



# TECHNICAL DATA

• 7<sup>th</sup> Edition •



MASCI

ISO 9001 QMS03196/800  
TIS 18001 OHS07012/210  
OHSAS 18001 OHSAS07009/130  
ISO 45001 OHSMS21027/195



ISO 14001 TH009912  
ISO 14001 TH013591



**TIS 11-2553**  
**TIS 85-2548**  
**TIS 293-2541**  
**TIS 2202-2547**



**TIS 64-2517**  
**TIS 118-2522**  
**TIS 2143-2567**  
**TIS 386-2567**  
**TIS 2341-2564**





## THAI-YAZAKI ELECTRIC WIRE CO., LTD.

### Technical Data

For  
Electric Wires  
and Cables

Publication : 7<sup>th</sup> Edition JUNE 2026

This catalog provides a comprehensive descriptions of the main products of Thai-Yazaki Electric Wire Co., Ltd.

These products are manufactured in conformity to the Thai Industrial Standard (TIS), Thai-Yazaki Standard, and IEC 60502 Standard.

#### Head Office/Sale Office:

10<sup>th</sup> Floor, O-NES Tower, Room No. 1003-1004  
6 Sukhumvit Soi 6, Klongtoey Sub-District,  
Klongtoey District, Bangkok, 10110 Thailand  
Tel: 0-26532550 Fax: 0-26532613  
Tax Identification No.0105505001539

#### FACTORY :

##### PHRA PRADAENG FACTORY

283 Moo 1, Suksawad Road, Bangplakot, Phrasamut-Chedi,  
Samuthprakarn 10290Tel.0-2463-0058

##### WAT KAE FACTORY

166 Moo 4, Soi Wat Khae Suk Sawat Rd., Pak Khlong Bang Pla Kot,  
Phra Samut Chedi, Samut Prakan 10290  
Tel.0-2425-8804

##### SUVARNABHUMI FACTORY

99 Moo 4, Khlong Suan, Bang Bo, Samut Prakan 10560  
Tel.0-2300-9500, 0-2136-4856

Technical Data and  
General information

A

Copper Conductor Cables

B

Aluminium Conductor Cables

C

Photovoltaic Solar Cable

D

Electrical Insulation Tape

E

# Index

## A Technical Data and General Information

|                                                                   |     |
|-------------------------------------------------------------------|-----|
| WIRE GAUGES                                                       | A1  |
| CONVERSION TABLE AWG/MCM (kcmil) TO THE METRIC CROSS-SECTION AREA | A5  |
| SI PREFIXES                                                       | A5  |
| PROPERTIES OF INSULATION AND JACKET MATERIALS                     | A6  |
| CONDITION OF INSTALLATION                                         | A11 |
| SYMBOLS OF ELECTRICAL UNITS                                       | A12 |
| TABLE OF THE DIMENSIONS FOR THE MOTOR STARTERS                    | A13 |
| STANDARD COEFFICIENT OF CONVERSION                                | A14 |
| CONDUCTIVITY AND DENSITY OF METALS                                | A15 |
| CONDUCTOR MATERIALS                                               | A15 |
| TEMPERATURE CORRECTION FACTORS FOR CONDUCTOR RESISTANCE           | A16 |
| ELECTRICAL FORMULAS                                               | A17 |
| CURRENT-CARRYING CAPACITIES OF CABLE                              | A23 |

## B Copper Conductor Cables

### Building Wires and Cables

|                                                                    |                   |
|--------------------------------------------------------------------|-------------------|
| <b>TIS 11 Part 3 - 2553 : Non-Sheathed Cables for Fixed Wiring</b> | <b>INDEX B(1)</b> |
| - 60227 IEC 01 THW or YK60227 IEC 01 THW                           | B1                |
| - 60227 IEC 02 THW (f)                                             | B3                |
| - 60227 IEC 05 IV                                                  | B4                |
| - 60227 IEC 06 IV (f)                                              | B5                |
| - 60227 IEC 07 HIV                                                 | B6                |
| - 60227 IEC 08 HIV (f)                                             | B7                |
| <b>TIS 11 Part 4 - 2553 : Sheathed Cables for Fixed Wiring</b>     | <b>INDEX B(1)</b> |
| - 60227 IEC 10                                                     | B8                |
| <b>TIS 11 Part 5 - 2553 : Flexible Cables (Cords)</b>              | <b>INDEX B(2)</b> |
| - 60227 IEC 52 VKF                                                 | B18               |
| - 60227 IEC 52                                                     | B19               |
| - 60227 IEC 53 VKF                                                 | B21               |
| - 60227 IEC 53                                                     | B22               |
| - 60227 IEC 56 HVKF                                                | B24               |
| - 60227 IEC 56                                                     | B25               |
| - 60227 IEC 57 HVKF                                                | B26               |
| - 60227 IEC 57                                                     | B27               |

|                                                                      |                   |
|----------------------------------------------------------------------|-------------------|
| <b>TIS 11 Part 101 - 2559 : Sheathed Cables for General Purposes</b> | <b>INDEX B(2)</b> |
| - VAF                                                                | B28               |
| - VAF-G                                                              | B29               |
| - NYY or YK NYY                                                      | B30               |
| - NYY-G                                                              | B38               |
| - VCT                                                                | B44               |
| - VCT-G                                                              | B47               |
| <b>Low Voltage Power Cables</b>                                      | <b>INDEX B(3)</b> |
| - NYY-SWA                                                            | B50               |
| - NYCY                                                               | B56               |
| - FD-0.6/1KV-CV or YK FD-0.6/1KV-CV                                  | B58               |
| - FD-0.6/1KV-CV-AWA                                                  | B66               |
| - FD-0.6/1KV-CV-SWA                                                  | B68               |
| - FD-0.6/1KV-CV-STA                                                  | B71               |
| <b>Medium Voltage Power Cables</b>                                   | <b>INDEX B(4)</b> |
| - 1.8/3KV-CV                                                         | B74               |
| - 3.6/6KV-CV                                                         | B77               |
| - 6/10KV-CV                                                          | B80               |
| - 8.7/15KV-CV                                                        | B83               |
| - 12/20KV-CV                                                         | B86               |
| - 18/30KV-CV                                                         | B89               |
| <b>High Voltage Power Cables</b>                                     | <b>INDEX B(4)</b> |
| - 69KV-CE-CWS                                                        | B92               |
| - 115KV-CE-CWS                                                       | B93               |
| <b>Control Cables</b>                                                | <b>INDEX B(4)</b> |
| - CVV                                                                | B94               |
| - CVV-S                                                              | B100              |
| <b>Automobile Wire and Cables</b>                                    | <b>INDEX B(5)</b> |
| - T-AV                                                               | B108              |
| <b>Bare Conductor</b>                                                | <b>INDEX B(5)</b> |
| - FHC                                                                | B109              |
| - FAC                                                                | B110              |

## C Aluminium Conductor Cables

### Building Wires and Cables

INDEX C(1)

- THWA

C1

- THWA-C

C2

### Low Voltage Power Cables

INDEX C(1)

- FD-0.6/1KV-AL-CV

C3

- FD-0.6/1KV-AL-CV-AWA

C8

- FD-0.6/1KV-AL-CV-SWA

C9

- FD-0.6/1KV-AL-CV-STA

C12

### High Voltage Power Cables

INDEX C(2)

- 24KV-OC

C15

- 33KV-OC

C16

- 15KV-CC

C17

- 25KV-CC (T1)

C18

- 35KV-CC (T3)

C19

### Bare Conductor

INDEX C(2)

- AAC

C20

- ACSR

C21

## D Photovoltaic Solar Cable

INDEX D

- PV Solar Cable

D1

## E Electrical Insulation Tape

INDEX E

- VTA

E1

# Technical Data and General Information

A

|                                                                               |      |
|-------------------------------------------------------------------------------|------|
| WIRE GAUGES                                                                   | A 1  |
| CONVERSION TABLE AWG/MCM (kcmil) TO THE METRIC CROSS-SECTION AREA             | A 5  |
| SI PREFIXES                                                                   | A 5  |
| PROPERTIES OF INSULATION AND JACKET MATERIALS                                 | A 6  |
| - Resistance to Industrial Chemical                                           | A 6  |
| - General Comparison Data                                                     | A 7  |
| - Thermal Properties                                                          | A 9  |
| - Operating Temperature                                                       | A 9  |
| - Electrical Properties                                                       | A 9  |
| - Long-Time Heat Aging Curves                                                 | A 10 |
| CONDITION OF INSTALLATION                                                     | A 11 |
| - Minimum Bending Radius                                                      | A 11 |
| - Permissible Maximum Pulling Tension                                         | A 11 |
| - Side Wall Pressure to Cable                                                 | A 11 |
| SYMBOLS OF ELECTRICAL UNITS                                                   | A 12 |
| TABLE OF THE DIMENSIONS FOR THE MOTOR STARTERS                                | A 13 |
| STANDARD COEFFICIENT OF CONVERSION                                            | A 14 |
| CONDUCTIVITY AND DENSITY OF METALS                                            | A 15 |
| CONDUCTOR MATERIALS                                                           | A 15 |
| TEMPERATURE CORRECTION FACTORS FOR CONDUCTOR RESISTANCE                       | A 16 |
| ELECTRICAL FORMULAS                                                           | A 17 |
| - D.C. Resistance                                                             | A 17 |
| - Inductance                                                                  | A 18 |
| - Reactance                                                                   | A 18 |
| - Impedance                                                                   | A 18 |
| - Dielectric Loss                                                             | A 18 |
| - Capacitance                                                                 | A 18 |
| - A.C. Resistance at Temperature                                              | A 19 |
| - Charging Current                                                            | A 20 |
| - Insulation Resistance                                                       | A 20 |
| - Short-Circuit Current Rating                                                | A 20 |
| - Short-Circuit Performance of Metallic Shields and Sheath of Insulated Cable | A 21 |
| - Voltage Drop Calculation                                                    | A 22 |
| - Calculating Maximum Cable Length Due to Voltage Drop                        | A 22 |

## CURRENT-CARRYING CAPACITIES OF CABLE

A 23

- Table 5-8: Correction factor for a group of circuits, or a group of multi-cores cable. A 23

- Table 5-20: Current rating of copper conductor, PVC insulated with/without sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C, ambient temperature 40°C, installed in raceway in air. A 24

- Table 5-21: Current rating of copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C or 90°C, ambient temperature 40°C, installed on wall. A 25

- Table 5-22: Current rating of copper conductor, PVC insulated TIS 11-2553 for  $U_0/U \leq 450/750$ V, conductor temperature 70°C or 90°C, ambient temperature 40°C installed on insulator in air. A 26

- Table 5-23: Current rating for copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$ kV, conductor temperature 70°C, ambient temperature 30°C, installed underground conduit or direct burial. A 27

- Table 5-24: Current rating for copper conductor, PVC insulated single-core TIS 11-2553 for  $U_0/U \leq 300/500$ V, conductor temperature 70°C or 90°C, ambient temperature 40°C, installed in air. A 28

- Table 5-25: Current rating for flexible copper conductor, PVC insulated with sheathed TIS 11-2553 for  $U_0/U \leq 300/500$ V, conductor temperature 70°C or 90°C, ambient temperature 40°C, installed in air. A 28

- Table 5-26: Current rating for flexible copper conductor, PVC insulated with/without sheathed TIS 11-2553 for  $U_0/U \leq 450/750$ V, conductor temperature 70°C, ambient temperature 40°C, installed in air. A 29

- Table 5-27: Current rating for copper conductor, XLPE insulated with/without sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 40°C, installed in raceway in air. A 30

- Table 5-28: Current rating for copper conductor, XLPE insulated with/without sheathed for  $U_0/U \leq 0.6/1$ kV, conductor temperature 90°C, ambient temperature 40°C, installed on insulator in air. A 31

- Table 5-29: Current rating for copper conductor, XLPE insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 30°C, installed underground conduit or direct burial. A 32

- Table 5-30: Current rating of copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C, ambient temperature 40°C, installed on perforated cable tray or cable ladder without cover. A 33

- Table 5-30(a): Current rating of copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C, ambient temperature 40°C, installed on unperforated cable tray without cover. A 34

- Table 5-31: Current rating for copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C, ambient temperature 40°C, installed on perforated or unperforated cable tray or cable ladder with cover. A 35

- Table 5-32: Current rating for copper conductor, XLPE insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 40°C, installed on perforated cable tray or cable ladder without cover. A 36

- Table 5-32(a): Current rating for copper conductor, XLPE insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 40°C, installed on unperforated cable tray without cover. A 37

|                  |                                                                                                                                                                                                                                   |      |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| - Table 5-33:    | Current rating for copper conductor, XLPE insulated with sheathed for $U_0/U \leq 0.6/1$ kV, conductor temperature 90°C, ambient temperature 40°C, installed on unperforated or perforated cable tray or cable ladder with cover. | A 38 |
| - Table 5-40:    | Correction factor for current rating of single-core cable installed on cable tray for more than one circuit.                                                                                                                      | A 39 |
| - Table 5-40(a): | Correction factor for current rating of single-core cable installed on cable tray for more than one circuit.                                                                                                                      | A 41 |
| - Table 5-41:    | Correction factor for current rating of single-core cable installed on cable tray for more than one circuit.                                                                                                                      | A 42 |
| - Table 5-42:    | Current rating for aluminium conductor, PVC insulated TIS 293-2541 for $U_0/U \leq 450/750$ V, conductor temperature 70°C, ambient temperature 40°C, installed on insulator in air.                                               | A 43 |
| - Table 5-43:    | Correction factor for ambient temperature other than 40°C to be applied to the current-carrying capacities for cable in air.                                                                                                      | A 44 |
| - Table 5-44:    | Correction factor for ambient air temperatures other than 30°C to be applied to current-carrying capacities for cables in the ground.                                                                                             | A 44 |
| - Table 5-45:    | Correction factor for more than one circuit, single-core or multi-cores cable $U_0/U \leq 0.6/1$ kV, Cables laid directly in ground.                                                                                              | A 45 |
| - Table 5-46:    | Correction factor for more than one circuit, single-core or multi-cores cable $U_0/U \leq 0.6/1$ kV, Cables in duct in ground.                                                                                                    | A 45 |
| - Table 5-47:    | Schedule of reference method of installation which form the basis of the tabulated current-carrying capacities.                                                                                                                   | A 46 |
| - Table 5-48:    | Requirement for installation copper conductor, PVC insulated cable according to TIS 11-2553 and TIS 11 Part 101-2559.                                                                                                             | A 47 |
| - Table ๕1       | Single-core 70°C, Copper conductor, PVC insulated cable                                                                                                                                                                           | A 49 |
| - Table ๕2       | Multi-cores 70°C, Copper conductor, PVC insulated cable                                                                                                                                                                           | A 50 |
| - Table ๕3       | Single-core 90°C, Copper conductor, XLPE insulation cable                                                                                                                                                                         | A 51 |
| - Table ๕4       | Multi-cores 90°C, Copper conductor, XLPE insulation cable                                                                                                                                                                         | A 52 |



## Wire Gauges

| Gauge  |        |        |      | Diameter |        | Sectional Area |                 |                 | Weight      |       |
|--------|--------|--------|------|----------|--------|----------------|-----------------|-----------------|-------------|-------|
| B.W.G. | A.W.G. | S.W.G. | mm.G | Mil      | mm.    | Cir.Mil        | in <sup>2</sup> | mm <sup>2</sup> | lb/1,000 ft | kg/km |
| 5/0    | -      | 7/10   | -    | 500      | 12.700 | 250,000        | 0.1964          | 126.7           | 756.9       | 1,126 |
| -      | -      | -      | 12   | 472.4    | 12.000 | 223,162        | 0.1753          | 113.1           | 675.6       | 1,005 |
| -      | -      | 6/0    | -    | 464      | 11.786 | 215,296        | 0.1691          | 109.1           | 651.7       | 969.9 |
| -      | 4/0    | -      | -    | 460      | 11.684 | 211,600        | 0.1662          | 107.2           | 640.5       | 953.0 |
| 4/0    | -      | -      | -    | 454      | 11.532 | 206,100        | 0.1619          | 104.4           | 624.0       | 928.1 |
| -      | -      | 5/0    | -    | 432      | 10.973 | 186,624        | 0.1466          | 94.56           | 565.0       | 840.6 |
| 3/0    | -      | -      | -    | 425      | 10.795 | 180,600        | 0.1419          | 91.52           | 546.9       | 813.6 |
| -      | 3/0    | -      | -    | 409.6    | 10.404 | 167,772        | 0.1318          | 85.03           | 508.0       | 755.9 |
| -      | -      | 4/0    | -    | 400      | 10.160 | 160,000        | 0.1257          | 81.07           | 484.5       | 720.7 |
| -      | -      | -      | 10   | 393.7    | 10.000 | 155,000        | 0.1217          | 78.54           | 468.0       | 698.2 |
| 2/0    | -      | -      | -    | 380      | 9.652  | 144,400        | 0.1134          | 73.17           | 437.1       | 650.5 |
| -      | -      | 3/0    | -    | 372      | 9.440  | 138,384        | 0.1087          | 70.12           | 418.9       | 623.4 |
| -      | 2/0    | -      | -    | 364.8    | 9.266  | 133,079        | 0.1045          | 67.42           | 402.7       | 599.4 |
| -      | -      | -      | 9    | 354.3    | 9.000  | 125,528        | 0.09859         | 63.62           | 380.0       | 565.6 |
| -      | -      | 2/0    | -    | 348      | 8.839  | 121,104        | 0.09512         | 61.36           | 366.6       | 545.5 |
| 0      | -      | -      | -    | 340      | 8.636  | 115,600        | 0.09079         | 58.58           | 349.9       | 520.8 |
| -      | 0      | -      | -    | 324.9    | 8.250  | 105,560        | 0.08291         | 53.49           | 319.5       | 475.5 |
| -      | -      | 0      | -    | 324      | 8.230  | 104,976        | 0.08245         | 53.19           | 317.8       | 472.8 |
| -      | -      | -      | 8    | 315      | 8.000  | 99,225         | 0.07793         | 50.27           | 300.3       | 446.9 |
| 1      | -      | 1      | -    | 300      | 7.629  | 90,000         | 0.07069         | 45.60           | 272.4       | 405.4 |
| -      | 1      | -      | -    | 289.3    | 7.348  | 83,694         | 0.06573         | 42.41           | 253.3       | 377.0 |
| 2      | -      | -      | -    | 284      | 7.214  | 80,660         | 0.06335         | 40.87           | 244.2       | 363.3 |
| -      | -      | 2      | -    | 276      | 7.010  | 76,176         | 0.05983         | 39.60           | 230.6       | 343.2 |
| -      | -      | -      | 7.0  | 275.6    | 7.000  | 75,955         | 0.05966         | 38.48           | 229.9       | 342.1 |
| 3      | -      | -      | -    | 259      | 6.579  | 67,080         | 0.05269         | 33.99           | 203.1       | 302.2 |
| -      | 2      | -      | -    | 257.6    | 6.544  | 66,358         | 0.05212         | 33.63           | 200.9       | 299.0 |
| -      | -      | -      | 6.5  | 255.9    | 6.500  | 65,485         | 0.05143         | 32.18           | 189.2       | 295.0 |
| -      | -      | 3      | -    | 252      | 6.401  | 63,504         | 0.04988         | 32.18           | 192.2       | 286.1 |
| 4      | -      | -      | -    | 238      | 6.045  | 56,640         | 0.04449         | 28.70           | 171.5       | 255.1 |
| -      | -      | -      | 6.0  | 236.2    | 6.000  | 55,790         | 0.04382         | 28.27           | 168.9       | 251.1 |
| -      | -      | 4      | -    | 232      | 5.893  | 53,824         | 0.04227         | 27.27           | 162.9       | 242.4 |
| -      | 3      | -      | -    | 229.4    | 5.827  | 52,624         | 0.04133         | 26.66           | 159.3       | 237.0 |
| 5      | -      | -      | -    | 220      | 5.588  | 48,400         | 0.03801         | 24.52           | 146.5       | 218.0 |
| -      | -      | -      | 5.5  | 216.5    | 5.500  | 46,872         | 0.03681         | 23.72           | 141.9       | 210.9 |
| -      | -      | 5      | -    | 212      | 5.385  | 44,944         | 0.03530         | 22.77           | 136.0       | 202.4 |
| -      | 4      | -      | -    | 204.3    | 5.189  | 41,738         | 0.03278         | 21.15           | 126.3       | 188.0 |
| 6      | -      | -      | -    | 203      | 5.156  | 41,210         | 0.03237         | 20.88           | 124.8       | 185.6 |
| -      | -      | -      | 5.0  | 196.9    | 5.000  | 38,770         | 0.03045         | 19.63           | 117.4       | 174.5 |
| -      | -      | 6      | -    | 192      | 4.877  | 36,864         | 0.02895         | 18.68           | 111.6       | 166.3 |
| -      | 5      | -      | -    | 181.9    | 4.621  | 33,088         | 0.02599         | 16.77           | 100.2       | 149.1 |
| 7      | -      | -      | -    | 180      | 4.572  | 32,400         | 0.02545         | 16.42           | 98.08       | 146.0 |
| -      | -      | -      | 4.5  | 177.2    | 4.500  | 31,400         | 0.02466         | 15.90           | 95.04       | 141.4 |
| -      | -      | 7      | -    | 176      | 4.470  | 30,976         | 0.02433         | 15.70           | 93.77       | 139.6 |
| 8      | -      | -      | -    | 165      | 4.191  | 27,220         | 0.02138         | 13.80           | 82.40       | 122.7 |
| -      | 6      | -      | -    | 162      | 4.115  | 26,244         | 0.02061         | 13.30           | 79.43       | 118.2 |

A

## Wire Gauges

| Gauge  |        |        |      | Diameter |       | Sectional Area |                 |                 | Weight      |        |
|--------|--------|--------|------|----------|-------|----------------|-----------------|-----------------|-------------|--------|
| B.W.G. | A.W.G. | S.W.G. | mm.G | Mil      | mm.   | Cir.Mil        | in <sup>2</sup> | mm <sup>2</sup> | lb/1,000 ft | kg/km  |
| -      | -      | 8      | -    | 160      | 4.064 | 25,600         | 0.02011         | 12.97           | 77.50       | 115.30 |
| -      | -      | -      | 4.0  | 157.5    | 4.000 | 24,806         | 0.01948         | 12.57           | 75.08       | 111.80 |
| 9      | -      | -      | -    | 148      | 3.759 | 21,900         | 0.01720         | 11.10           | 66.29       | 98.68  |
| -      | 7      | -      | -    | 144.3    | 3.665 | 20,822         | 0.01635         | 10.55           | 63.01       | 93.79  |
| -      | -      | 9      | -    | 144      | 3.658 | 20,736         | 0.01629         | 10.52           | 62.78       | 93.52  |
| -      | -      | -      | 3.5  | 137.8    | 3.500 | 18,989         | 0.01491         | 9.621           | 57.46       | 85.53  |
| 10     | -      | -      | -    | 134      | 3.404 | 17,960         | 0.01410         | 9.098           | 54.34       | 80.88  |
| -      | 8      | -      | -    | 128.5    | 3.264 | 16,512         | 0.01297         | 8.368           | 49.99       | 74.39  |
| -      | -      | 10     | -    | 128      | 3.251 | 16,384         | 0.01287         | 8.302           | 49.60       | 73.81  |
| -      | -      | -      | 3.2  | 126      | 3.200 | 15,876         | 0.01247         | 8.042           | 48.06       | 71.49  |
| 11     | -      | -      | -    | 120      | 3.048 | 14,400         | 0.01131         | 7.297           | 43.59       | 64.87  |
| -      | -      | 11     | -    | 116      | 2.946 | 13,456         | 0.01057         | 6.818           | 40.74       | 60.61  |
| -      | 9      | -      | -    | 114.4    | 2.906 | 13,087         | 0.01028         | 6.632           | 39.62       | 58.96  |
| -      | -      | -      | 2.9  | 114.2    | 2.900 | 13,042         | 0.01024         | 6.605           | 39.47       | 58.72  |
| 12     | -      | -      | -    | 109      | 2.769 | 11,880         | 0.009331        | 6.020           | 35.96       | 53.52  |
| -      | -      | 12     | -    | 104      | 2.642 | 10,816         | 0.008495        | 5.481           | 32.74       | 48.73  |
| -      | -      | -      | 2.6  | 102.4    | 2.600 | 10,486         | 0.008246        | 5.309           | 31.78       | 47.29  |
| -      | 10     | -      | -    | 101.9    | 2.588 | 10,384         | 0.008156        | 5.262           | 31.43       | 46.78  |
| 13     | -      | -      | -    | 95       | 2.413 | 9,025          | 0.007088        | 4.573           | 27.32       | 40.65  |
| -      | -      | 13     | -    | 92       | 2.337 | 8,464          | 0.006648        | 4.289           | 25.62       | 38.13  |
| -      | 11     | -      | -    | 90.74    | 2.305 | 8,234          | 0.006467        | 4.172           | 24.92       | 37.09  |
| -      | -      | -      | 2.3  | 90.55    | 2.300 | 8,199          | 0.006439        | 4.155           | 24.82       | 36.94  |
| 14     | -      | -      | -    | 83       | 2.108 | 6,889          | 0.005411        | 3.491           | 20.85       | 31.04  |
| -      | 12     | -      | -    | 80.81    | 2.053 | 6,530          | 0.005129        | 3.309           | 19.77       | 29.42  |
| -      | -      | 14     | -    | 80       | 2.032 | 6,400          | 0.005027        | 3.243           | 19.37       | 28.83  |
| -      | -      | -      | 2.0  | 78.74    | 2.000 | 6,200          | 0.004869        | 3.142           | 18.77       | 27.93  |
| 15     | -      | 15     | -    | 72       | 1.829 | 5,184          | 0.004072        | 2.627           | 18.46       | 27.36  |
| -      | 13     | -      | -    | 71.96    | 1.828 | 5,178          | 0.004067        | 2.624           | 15.67       | 23.33  |
| -      | -      | -      | 1.8  | 70.87    | 1.800 | 5,023          | 0.003945        | 2.545           | 15.20       | 22.63  |
| 16     | -      | -      | -    | 65       | 1.651 | 4,225          | 0.003318        | 2.141           | 12.79       | 19.03  |
| -      | 14     | -      | -    | 64.08    | 1.628 | 4,106          | 0.003225        | 2.081           | 12.43       | 18.50  |
| -      | -      | 16     | -    | 64       | 1.626 | 4,096          | 0.003217        | 2.075           | 12.40       | 18.45  |
| -      | -      | -      | 1.6  | 62.99    | 1.600 | 3,968          | 0.003116        | 2.011           | 12.01       | 17.88  |
| 17     | -      | -      | -    | 58       | 1.473 | 3,364          | 0.002642        | 1.705           | 10.18       | 15.16  |
| -      | 15     | -      | -    | 57.07    | 1.450 | 3,257          | 0.002558        | 1.650           | 9.859       | 14.67  |
| -      | -      | 17     | -    | 56       | 1.422 | 3,136          | 0.002463        | 1.589           | 9.493       | 14.13  |
| -      | -      | -      | 1.4  | 55.12    | 1.400 | 3,038          | 0.002386        | 1.539           | 9.196       | 13.68  |
| -      | 16     | -      | -    | 50.82    | 1.291 | 2,583          | 0.002029        | 1.309           | 7.820       | 11.64  |
| 18     | -      | -      | -    | 49       | 1.245 | 2,401          | 0.001886        | 1.217           | 7.269       | 10.82  |
| -      | -      | 18     | -    | 48       | 1.219 | 2,304          | 0.001810        | 1.167           | 6.976       | 10.38  |
| -      | -      | -      | 1.2  | 47.24    | 1.200 | 2,232          | 0.001753        | 1.131           | 6.756       | 10.06  |
| -      | 17     | -      | -    | 45.26    | 1.150 | 2,048          | 0.001608        | 1.037           | 6.197       | 9.219  |
| 19     | -      | -      | -    | 42       | 1.067 | 1,764          | 0.001385        | 0.8938          | 5.388       | 7.946  |
| -      | 18     | -      | -    | 40.3     | 1.024 | 1,624          | 0.001275        | 0.8226          | 4.914       | 7.313  |
| -      | -      | 19     | -    | 40       | 1.016 | 1,600          | 0.001257        | 0.8107          | 4.845       | 7.207  |
| -      | -      | -      | 1.0  | 39.37    | 1.000 | 1,550          | 0.001217        | 0.7854          | 4.690       | 6.982  |
| -      | -      | 20     | -    | 36       | 0.914 | 1,296          | 0.001018        | 0.6576          | 3.923       | 5.838  |

## Wire Gauges

| Gauge  |        |        |      | Diameter |        | Sectional Area |                 |                 | Weight      |        |
|--------|--------|--------|------|----------|--------|----------------|-----------------|-----------------|-------------|--------|
| B.W.G. | A.W.G. | S.W.G. | mm.G | Mil      | mm.    | Cir.Mil        | in <sup>2</sup> | mm <sup>2</sup> | lb/1,000 ft | kg/km  |
| -      | 19     | -      | -    | 35.89    | 0.9116 | 1,288          | 0.001012        | 0.6529          | 3.900       | 5.804  |
| -      | -      | -      | 0.90 | 35.43    | 0.9000 | 1,255          | 0.0009857       | 0.6362          | 3.799       | 5.656  |
| 20     | -      | -      | -    | 35       | 0.8890 | 1,225          | 0.0009621       | 0.6207          | 3.708       | 5.518  |
| 21     | -      | 21     | -    | 32       | 0.8128 | 1,024          | 0.0008042       | 0.5189          | 3.099       | 4.613  |
| -      | 20     | -      | -    | 31.96    | 0.8118 | 1,021          | 0.0008019       | 0.5174          | 3.091       | 4.600  |
| -      | -      | -      | 0.80 | 31.50    | 0.8000 | 992.3          | 0.0007794       | 0.5027          | 3.004       | 4.469  |
| -      | 21     | -      | -    | 28.46    | 0.7229 | 810            | 0.0006362       | 0.4105          | 2.452       | 3.649  |
| 22     | -      | 22     | -    | 28       | 0.7112 | 784            | 0.0006158       | 0.3973          | 2.373       | 3.532  |
| -      | -      | -      | 0.70 | 27.56    | 0.7000 | 759.6          | 0.0005966       | 0.3848          | 2.299       | 3.421  |
| -      | -      | -      | 0.65 | 25.59    | 0.6500 | 654.8          | 0.0005143       | 0.3318          | 1.982       | 2.950  |
| -      | 22     | -      | -    | 25.35    | 0.6438 | 642.6          | 0.0005047       | 0.3256          | 1.945       | 2.895  |
| 23     | -      | -      | -    | 25       | 0.6350 | 625            | 0.0004909       | 0.3167          | 1.892       | 2.816  |
| -      | -      | 23     | -    | 24       | 0.6096 | 576            | 0.0004524       | 0.2919          | 1.744       | 2.595  |
| -      | -      | -      | 0.60 | 23.62    | 0.6000 | 557.9          | 0.0004382       | 0.2827          | 1.689       | 2.513  |
| -      | 23     | -      | -    | 22.57    | 0.5733 | 509.4          | 0.0004001       | 0.2581          | 1.542       | 2.295  |
| 24     | -      | 24     | -    | 22       | 0.5583 | 484            | 0.0003801       | 0.2452          | 1.465       | 2.180  |
| -      | -      | -      | 0.55 | 21.65    | 0.5500 | 468.7          | 0.0003681       | 0.2376          | 1.419       | 2.112  |
| -      | 24     | -      | -    | 20.10    | 0.5106 | 404            | 0.0003173       | 0.2047          | 1.223       | 1.820  |
| 25     | -      | 25     | -    | 20       | 0.5080 | 400            | 0.0003142       | 0.2027          | 1.211       | 1.802  |
| -      | -      | -      | 0.50 | 19.69    | 0.5000 | 387.7          | 0.0003045       | 0.1963          | 1.174       | 1.745  |
| 26     | -      | 26     | -    | 18       | 0.4572 | 324            | 0.0002545       | 0.1642          | 0.9809      | 1.460  |
| -      | 25     | -      | -    | 17.90    | 0.4547 | 320.4          | 0.0002516       | 0.1623          | 0.9697      | 1.443  |
| -      | -      | -      | 0.45 | 17.72    | 0.4500 | 314            | 0.0002466       | 0.1590          | 0.9504      | 1.414  |
| -      | -      | 27     | -    | 16.4     | 0.4166 | 269            | 0.0002113       | 0.1363          | 0.7844      | 1.212  |
| 27     | -      | -      | -    | 16       | 0.4064 | 256            | 0.0002011       | 0.1297          | 0.7750      | 1.153  |
| -      | 26     | -      | -    | 15.94    | 0.4049 | 254.1          | 0.0001996       | 0.1288          | 0.7693      | 1.145  |
| -      | -      | -      | 0.40 | 15.75    | 0.400  | 248.1          | 0.0001949       | 0.1257          | 0.7512      | 1.118  |
| -      | -      | 28     | -    | 14.8     | 0.3759 | 219            | 0.0001720       | 0.1110          | 0.6629      | 0.9868 |
| -      | 27     | -      | -    | 14.20    | 0.361  | 201.6          | 0.0001583       | 0.1021          | 0.6101      | 0.9077 |
| 28     | -      | -      | -    | 14       | 0.3556 | 196            | 0.0001539       | 0.09932         | 0.5931      | 0.8330 |
| -      | -      | -      | 0.35 | 13.78    | 0.3500 | 189.9          | 0.0001491       | 0.09621         | 0.5746      | 0.8553 |
| -      | -      | 29     | -    | 13.6     | 0.3454 | 185            | 0.0001453       | 0.09372         | 0.5600      | 0.8332 |
| 29     | -      | -      | -    | 13       | 0.3302 | 169            | 0.0001327       | 0.08563         | 0.5114      | 0.7613 |
| -      | 28     | -      | -    | 12.64    | 0.3211 | 159.8          | 0.0001255       | 0.08097         | 0.4837      | 0.7198 |
| -      | -      | -      | 0.30 | 12.60    | 0.3200 | 158.8          | 0.0001246       | 0.08042         | 0.7806      | 0.7149 |
| -      | -      | 30     | -    | 12.4     | 0.3150 | 153.8          | 0.0001208       | 0.07791         | 0.4656      | 0.6926 |
| 30     | -      | -      | -    | 12       | 0.3048 | 144            | 0.0001131       | 0.07297         | 0.4359      | 0.6487 |
| -      | -      | 31     | -    | 11.6     | 0.2946 | 134.6          | 0.0001057       | 0.06818         | 0.4074      | 0.6061 |
| -      | -      | -      | 0.29 | 11.42    | 0.2900 | 130.4          | 0.0001024       | 0.06605         | 0.3947      | 0.5872 |
| -      | 29     | -      | -    | 11.26    | 0.2859 | 126.8          | 0.00009959      | 0.06425         | 0.3838      | 0.5712 |
| -      | -      | 32     | -    | 10.8     | 0.2743 | 116.6          | 0.00009158      | 0.05913         | 0.3530      | 0.5257 |
| -      | -      | -      | 0.26 | 10.24    | 0.2600 | 104.9          | 0.00008239      | 0.05309         | 0.3175      | 0.4720 |
| -      | 30     | -      | -    | 10.03    | 0.2546 | 100.6          | 0.00007901      | 0.05097         | 0.305       | 0.4531 |
| 31     | -      | 33     | -    | 10       | 0.2540 | 100            | 0.00007954      | 0.05067         | 0.3027      | 0.4505 |
| -      | -      | 34     | -    | 9.2      | 0.2337 | 84.64          | 0.00006648      | 0.04289         | 0.2562      | 0.3813 |
| -      | -      | -      | 0.23 | 9.055    | 0.2300 | 81.99          | 0.00006440      | 0.04155         | 0.2482      | 0.3694 |

A

## Wire Gauges

| Gauge  |        |        |      | Diameter |         | Sectional Area |                 |                 | Weight      |          |
|--------|--------|--------|------|----------|---------|----------------|-----------------|-----------------|-------------|----------|
| B.W.G. | A.W.G. | S.W.G. | mm.G | Mil      | mm.     | Cir.Mil        | in <sup>2</sup> | mm <sup>2</sup> | lb/1,000 ft | kg/km    |
| 32     | -      | -      | -    | 9        | 0.2286  | 81.102         | 0.00006362      | 0.04104         | 0.2452      | 0.3649   |
| -      | 31     | -      | -    | 8.928    | 0.2238  | 79.71          | 0.00006260      | 0.04039         | 0.2413      | 0.3591   |
| -      | -      | 35     | -    | 8.4      | 0.2134  | 70.56          | 0.00005542      | 0.03575         | 0.2136      | 0.3178   |
| 33     | -      | -      | -    | 8        | 0.2032  | 64             | 0.00005027      | 0.03243         | 0.1937      | 0.2883   |
| -      | 32     | -      | -    | 7.950    | 0.2019  | 65.20          | 0.00004964      | 0.03203         | 0.1913      | 0.2847   |
| -      | -      | -      | 0.20 | 7.874    | 0.2000  | 62             | 0.00004869      | 0.03142         | 0.1877      | 0.2793   |
| -      | -      | 36     | -    | 7.6      | 0.1930  | 57.76          | 0.00004536      | 0.02927         | 0.1748      | 0.2602   |
| -      | -      | -      | 0.18 | 7.087    | 0.1800  | 50.23          | 0.00003945      | 0.02545         | 0.1520      | 0.2263   |
| -      | 33     | -      | -    | 7.080    | 0.1798  | 50.13          | 0.00003937      | 0.02540         | 0.1517      | 0.2258   |
| 34     | -      | -      | -    | 7.       | 0.1778  | 49             | 0.00003848      | 0.02483         | 0.1483      | 0.2207   |
| -      | -      | 37     | -    | 6.8      | 0.1727  | 46.24          | 0.00003632      | 0.02343         | 0.1400      | 0.2083   |
| -      | 34     | -      | -    | 6.305    | 0.1601  | 39.75          | 0.00003122      | 0.02014         | 0.1203      | 0.1790   |
| -      | -      | -      | 0.16 | 6.299    | 0.1600  | 39.68          | 0.00003116      | 0.02011         | 0.1201      | 0.1788   |
| -      | -      | 38     | -    | 6        | 0.1524  | 36             | 0.00002827      | 0.01824         | 0.1090      | 0.1622   |
| -      | 35     | -      | -    | 5.615    | 0.1426  | 31.53          | 0.00002476      | 0.01597         | 0.09543     | 0.1420   |
| -      | -      | -      | 0.14 | 5.512    | 0.1400  | 30.38          | 0.00002386      | 0.01539         | 0.09196     | 0.1368   |
| -      | -      | 39     | -    | 5.2      | 0.1321  | 27.04          | 0.00002124      | 0.01370         | 0.08186     | 0.1218   |
| 35     | 36     | -      | -    | 5.000    | 0.1270  | 25             | 0.00001963      | 0.01267         | 0.07565     | 0.1126   |
| -      | -      | 40     | -    | 4.8      | 0.1219  | 23.04          | 0.00001810      | 0.01167         | 0.06976     | 0.1037   |
| -      | -      | -      | 0.12 | 4.724    | 0.1200  | 22.32          | 0.00001753      | 0.01131         | 0.06756     | 0.1006   |
| -      | 37     | -      | -    | 4.453    | 0.1131  | 19.83          | 0.00001557      | 0.01005         | 0.06001     | 0.08934  |
| -      | -      | 41     | -    | 4.4      | 0.1118  | 19.36          | 0.00001521      | 0.009810        | 0.05812     | 0.08721  |
| 36     | -      | 42     | -    | 4        | 0.1016  | 16.00          | 0.00001257      | 0.008107        | 0.04845     | 0.07207  |
| -      | 38     | -      | -    | 3.965    | 0.1007  | 15.72          | 0.00001235      | 0.007968        | 0.04760     | 0.07084  |
| -      | -      | -      | 0.10 | 3.937    | 0.1000  | 15.50          | 0.00001217      | 0.007854        | 0.04690     | 0.06982  |
| -      | -      | 43     | -    | 3.6      | 0.09114 | 12.96          | 0.00001018      | 0.006567        | 0.03923     | 0.05838  |
| -      | 39     | -      | -    | 3.531    | 0.08969 | 12.47          | 0.000009794     | 0.006319        | 0.03775     | 0.05618  |
| -      | -      | 44     | -    | 3.2      | 0.08138 | 10.24          | 0.000008042     | 0.005819        | 0.03099     | 0.04613  |
| -      | 40     | -      | -    | 3.145    | 0.07987 | 9.891          | 0.000007768     | 0.005012        | 0.02994     | 0.04456  |
| -      | 41     | 45     | -    | 3.800    | 0.07113 | 7.842          | 0.000006159     | 0.003973        | 0.02374     | 0.03532  |
| -      | 42     | -      | -    | 2.494    | 0.06334 | 6.219          | 0.000004884     | 0.003151        | 0.01882     | 0.02801  |
| -      | -      | 46     | -    | 2.4      | 0.06096 | 5.760          | 0.000004528     | 0.002929        | 0.01744     | 0.02595  |
| -      | 43     | -      | -    | 2.221    | 0.05641 | 4.932          | 0.000003873     | 0.002495        | 0.01498     | 0.02222  |
| -      | -      | 47     | -    | 2        | 0.05080 | 4.000          | 0.000003142     | 0.002027        | 0.01211     | 0.01802  |
| -      | 44     | -      | -    | 1.987    | 0.05023 | 3.911          | 0.000003072     | 0.001982        | 0.01184     | 0.01762  |
| -      | -      | -      | 0.05 | 1.969    | 0.05000 | 3.877          | 0.000003045     | 0.001963        | 0.01174     | 0.01745  |
| -      | 45     | -      | -    | 1.761    | 0.04473 | 3.102          | 0.000002436     | 0.001572        | 0.009383    | 0.01398  |
| -      | -      | 48     | -    | 1.6      | 0.04064 | 2.560          | 0.000002011     | 0.001297        | 0.007750    | 0.01153  |
| -      | 46     | -      | -    | 1.568    | 0.03984 | 2.460          | 0.000001931     | 0.001246        | 0.007446    | 0.01108  |
| -      | 47     | -      | -    | 1.397    | 0.03547 | 1.951          | 0.000001532     | 0.0009884       | 0.005904    | 0.008787 |
| -      | 48     | -      | -    | 1.224    | 0.03159 | 1.547          | 0.000001215     | 0.0007838       | 0.004683    | 0.006968 |
| -      | -      | 49     | -    | 1.2      | 0.03048 | 1.440          | 0.000001131     | 0.0007297       | 0.004359    | 0.006487 |
| -      | 49     | -      | -    | 1.108    | 0.02813 | 1.227          | 0.000009635     | 0.0006216       | 0.003713    | 0.005526 |
| -      | -      | 50     | -    | 1        | 0.02540 | 1.000          | 0.000007854     | 0.0005067       | 0.003027    | 0.004505 |
| -      | 50     | -      | -    | 0.986    | 0.02505 | 0.9728         | 0.000007641     | 0.0004929       | 0.002945    | 0.004382 |

NOTE    B.W.G.    - Birmingham Iron Wire Gauge  
           A.W.G.    - American Wire Gauge  
           S.W.G.    - British Standard Wire Gauge  
           mm.G.    - Millimeter Gauge

# Conversion table AWG/MCM (kcmil) to the metric cross-section area

| Conductor Cross-swection area<br>AWG/MCM (kcmil) |      | Theoretical Cross-Section area<br>mm <sup>2</sup> | Advised Cross-Section area<br>lb/1,000 ft |
|--------------------------------------------------|------|---------------------------------------------------|-------------------------------------------|
| AWG                                              | 20   | 0.51                                              | 0.5                                       |
|                                                  | 18   | 0.82                                              | 1                                         |
|                                                  | 16   | 1.31                                              | 1.5                                       |
|                                                  | 14   | 2.08                                              | 2.5                                       |
|                                                  | 12   | 3.31                                              | 4                                         |
|                                                  | 10   | 5.27                                              | 6                                         |
|                                                  | 8    | 8.40                                              | 10                                        |
|                                                  | 6    | 13.30                                             | 16                                        |
|                                                  | 4    | 21.20                                             | 25                                        |
|                                                  | 3    | 26.70                                             | 25                                        |
|                                                  | 2    | 33.60                                             | 35                                        |
|                                                  | 1    | 42.40                                             | so                                        |
|                                                  | 1/0  | 53.40                                             | so                                        |
|                                                  | 2/0  | 67.50                                             | 70                                        |
|                                                  | 3/0  | 85.00                                             | 95                                        |
|                                                  | 4/0  | 107.02                                            | 120                                       |
| MCM (kcmil)                                      | 250  | 126.70                                            | 120                                       |
|                                                  | 300  | 152.00                                            | 150                                       |
|                                                  | 350  | 177.40                                            | 185                                       |
|                                                  | 400  | 202.70                                            | 240                                       |
|                                                  | 500  | 253.40                                            | 240                                       |
|                                                  | 600  | 304.00                                            | 300                                       |
|                                                  | 700  | 354.00                                            | 400                                       |
|                                                  | 750  | 380.00                                            | 400                                       |
|                                                  | 800  | 405.40                                            | 400                                       |
|                                                  | 900  | 456.00                                            | 500                                       |
|                                                  | 1000 | 506.70                                            | 500                                       |
|                                                  | 1250 | 633.40                                            | 630                                       |
|                                                  | 1500 | 760.10                                            | 800                                       |

## SI Prefixes

| Multiply factor |       |       |       |       |     |                   | Prefix            | Symbol |   |
|-----------------|-------|-------|-------|-------|-----|-------------------|-------------------|--------|---|
| 1               | 000   | 000   | 000   | 000   | =   | 10 <sup>12</sup>  | tera              | T      |   |
|                 | 1     | 000   | 000   | 000   | =   | 10 <sup>9</sup>   | giga              | G      |   |
|                 |       | 1     | 000   | 000   | =   | 10 <sup>6</sup>   | mega              | M      |   |
|                 |       |       | 1     | 000   | =   | 10 <sup>3</sup>   | kilo              | k      |   |
|                 |       |       |       | 100   | =   | 10 <sup>2</sup>   | hecto             | h      |   |
|                 |       |       |       | 10    | =   | 10 <sup>1</sup>   | deca              | da     |   |
|                 |       |       |       | 0.1   | =   | 10 <sup>−1</sup>  | deci              | d      |   |
|                 |       |       |       | 0.01  | =   | 10 <sup>−2</sup>  | centi             | c      |   |
|                 |       |       |       | 0.001 | =   | 10 <sup>−3</sup>  | milli             | m      |   |
|                 |       |       | 0.000 | 001   | =   | 10 <sup>−6</sup>  | micro             | μ      |   |
|                 |       | 0.000 | 000   | 001   | =   | 10 <sup>−9</sup>  | nano              | n      |   |
|                 | 0.000 | 000   | 000   | 001   | =   | 10 <sup>−12</sup> | pico              | p      |   |
|                 |       | 0.000 | 000   | 000   | 001 | =                 | 10 <sup>−15</sup> | femto  | f |
| 0.000           | 000   | 000   | 000   | 000   | 001 | =                 | 10 <sup>−18</sup> | atto   | a |

# Properties of Insulation and Jacket Materials

## Resistance to Industrial Chemicals

| Reagent                  | Relative Rating |    |     |     |    |      |       | Reagent               | Relative Rating |    |     |     |    |      |       |
|--------------------------|-----------------|----|-----|-----|----|------|-------|-----------------------|-----------------|----|-----|-----|----|------|-------|
|                          | BR              | CR | ERC | PVC | PE | XLPE | NYLON |                       | BR              | CR | ERC | PVC | PE | XLPE | NYLON |
| Acetone                  | ⊙               | ○  | ⊙   | ×   | ⊙  | ⊙    | ○     | Chlorine Gas          | △               | △  | ×   | ×   | ×  | ×    | ⊙     |
| Aniline                  | ○               | ×  | ○   | ○   | ○  | ○    | ○     | Ozone                 | ○               | △  | ○   | ○   | ⊙  | ⊙    | ×     |
| Ethanol                  | ⊙               | ⊙  | ⊙   | △   | ○  | ○    | ○     | Bromine               | ×               | ×  | ×   | ×   | ×  | ×    | ×     |
| Ethyleneglycol           | ○               | ⊙  | ○   | △   | ⊙  | ⊙    | ○     | Nirtic Acid, conc.    | ×               | ×  | ×   | ×   | △  | △    | ×     |
| Xylene                   | ×               | ×  | ×   | ×   | ○  | ○    | ○     | Nitric Acid, 10%      | ×               | ×  | △   | ○   | ○  | ○    | △     |
| Glycerin                 | ⊙               | ⊙  | ⊙   | ○   | ⊙  | ⊙    | ○     | Fuming Nitric Acid    | ×               | ×  | △   | ×   | ×  | ×    | △     |
| Cresol                   | ○               | △  | ○   | △   | ○  | ○    | ×     | TapWater              | ⊙               | ⊙  | ⊙   | ⊙   | ⊙  | ⊙    | ⊙     |
| Chloroform               | ×               | ×  | ×   | ×   | △  | △    | ×     | Seawater              | ○               | ⊙  | ⊙   | ⊙   | ⊙  | ⊙    | △     |
| Acetic Acid, conc.       | ○               | △  | ○   | ×   | ○  | ○    | △     | Sulfuric Acid, conc.  | ×               | ×  | ×   | △   | △  | △    | ×     |
| Acetic Acid, 10%         | ○               | ×  | ○   | △   | ⊙  | ⊙    | ○     | Sulfuric Acid, 10%    | ○               | ○  | ○   | ⊙   | ○  | ○    | ○     |
| Ethyl Acetate            | ○               | ×  | △   | ×   | ○  | ○    | ○     | Phosphoric Acid       | ○               | △  | ○   | ×   | ⊙  | ⊙    | ○     |
| Carbon Tetrachloride     | ×               | ×  | ×   | ×   | ×  | ×    | △     | Sodium Hydroxide, 10% | ○               | ○  | ○   | ○   | ○  | ○    | ⊙     |
| Cyclohexane              | △               | ×  | ×   | △   | △  | △    | △     | Freon                 | ×               | ×  | ○   | ○   | ○  | ○    | ○     |
| Diocetyl Phthalate       | ⊙               | ×  | ×   | ×   | △  | △    | △     | Formic Acid           | △               | ×  | △   | ○   | ○  | ○    | ⊙     |
| Trichloroethylene        | ×               | ×  | ×   | △   | △  | △    | △     | JIC No.1 Oil (OF Oil) | ×               | △  | ×   | △   | ○  | ○    | ○     |
| Trichlorobenzene         | ×               | ×  | ×   | △   | △  | △    | △     | ASTM No.1 Oil         | ○               | ○  | △   | △   | ○  | ○    | ○     |
| Toluene                  | ×               | ×  | ×   | ×   | △  | △    | ○     | ASTM No.2 Oil         | △               | ○  | △   | △   | ○  | ○    | ○     |
| Carbon Disulfide         | ×               | ×  | ×   | △   | ○  | ○    | ○     | ASTM No.3 Oil         | ×               | △  | ×   | △   | △  | △    | △     |
| Phenol                   | ○               | △  | ○   | ×   | ○  | ○    | ×     | Gasoline              | ×               | △  | ×   | ×   | ○  | ○    | ○     |
| Furfural                 | ⊙               | ○  | ⊙   | △   | ⊙  | ⊙    | ○     | Creosote Oil          | △               | ×  | ×   | ×   | △  | △    | △     |
| Hexane                   | ×               | △  | ×   | △   | ○  | ○    | ○     | JIS No.2 Oil          | ×               | ×  | ×   | △   | ○  | ○    | ○     |
| Benzene                  | ×               | ×  | ×   | ×   | △  | △    | ○     | Heavy Oil             | ×               | ×  | ×   | △   | △  | △    | △     |
| Methanol                 | ⊙               | ⊙  | ⊙   | ×   | ○  | ○    | △     | Lube Oil              | ×               | △  | △   | △   | △  | △    | ○     |
| Methyl Ethyl Ketone      | △               | ×  | △   | ×   | ○  | ○    | ○     | Silicone Oil          | ⊙               | ⊙  | ⊙   | ○   | ⊙  | ⊙    | △     |
| Dioxane                  | ○               | ○  | ○   | ×   | ○  | ○    | ○     | Vegetable Oil         | ⊙               | ⊙  | ○   | ○   | ⊙  | ⊙    | △     |
| Nitrobenzene             | ○               | ×  | ○   | ×   | ○  | ○    | ○     | Petroleum Ether       | △               | △  | ×   | ×   | ⊙  | ⊙    | △     |
| Formaline                | ○               | ○  | ○   | ○   | ○  | ○    | △     | Trans Oil             | ×               | △  | ×   | ○   | ○  | ○    | ○     |
| Ammonia, conc.           | ○               | △  | ○   | △   | ○  | ○    | ○     | Naphtha               | ×               | ×  | ×   | ○   | ○  | ○    | ○     |
| Ammonia, 10%             | ○               | △  | ○   | ○   | ○  | ○    | ⊙     | Coal Tar              | ○               | ○  | ○   | ○   | ○  | ○    | ○     |
| Sodium Chloride          | ○               | ○  | ○   | ○   | ⊙  | ⊙    | ⊙     |                       |                 |    |     |     |    |      |       |
| Hydrochloric Acid, conc. | ○               | ○  | ○   | △   | ○  | ○    | ×     |                       |                 |    |     |     |    |      |       |
| Hydrochloric Acid, 10%   | ⊙               | ○  | ○   | ○   | ⊙  | ⊙    | ○     |                       |                 |    |     |     |    |      |       |

Where:

⊙ : High Resistance

×

○ : Fair Resistance

△ : Poor Resistance, care on use

# Properties of Insulation and Jacket Materials

## General Comparison Data

| Material                                                     | Polyvinyl Chloride                       | Low Density Polyethylene     | Cross-linked Polyethylene          | Polyisoprene                | Styrene Butadiene Copolymer                                                                                 | Polysiprene                         | Chlorosulphonated Polyethylene      |
|--------------------------------------------------------------|------------------------------------------|------------------------------|------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------------------|
| Designation                                                  | PVC                                      | PE                           | XLPE                               | NR                          | SBR                                                                                                         | CR                                  | CSM                                 |
| Chemical structure                                           | $-(CH_2-CH)_n$<br>Cl                     | $-(CH_2-CH_2)_n$             | $-(CH_2-CH-CH_2-CH_2-CH_2-CH_2)_n$ | $-(CH_2-C(CH_3)=CH-CH_2)_n$ | $-(CH_2-CH=CH-CH_2)_n$<br> | $-(CH_2-C(CH_3)=CH-CH_2)_n$         | $-(CH_2)_x-CH-(CH_2)_y-CH_2-Cl$     |
| Density                                                      | 1.3 - 1.5                                | 0.91 - 0.93                  | 0.91 - 0.93                        | 0.93 - 0.94                 | 0.93 - 0.94                                                                                                 | 1.15 - 1.23                         | 1.10                                |
| Hardness (Shore)                                             | D30 - 90                                 | D45 - 60                     |                                    | 30 - 90                     | 10 - 95                                                                                                     | 20 - 90                             | 50 - 90                             |
| Max. Operating Temp.                                         | °C 70                                    | 75                           | 90                                 | 60                          | 75                                                                                                          | 80                                  | 90                                  |
| Emergency Temp. Rating                                       | °C 85                                    | 90                           | 130                                | 85                          |                                                                                                             |                                     |                                     |
| Short Circuit Temp. Rating                                   | °C 120                                   | 150                          | 250                                | 150                         |                                                                                                             |                                     |                                     |
| Brittleness Temp.                                            | °C ~ -40                                 | < -70                        | < -70                              | -55 ~ -58                   | -30 ~ -65                                                                                                   | -30 ~ -50                           | -20 ~ -50                           |
| Softening Temp.                                              | °C 120 - 140                             | 100 - 115                    |                                    |                             |                                                                                                             |                                     |                                     |
| Thermal Expansion                                            | °C 0.7 - 2.5 x 10 <sup>-4</sup>          | 1.6 - 1.8 x 10 <sup>-4</sup> | 1.6 - 1.8 x 10 <sup>-4</sup>       | 1.8 x 10 <sup>-4</sup>      | 1.8 x 10 <sup>-4</sup>                                                                                      | 1.9 x 10 <sup>-4</sup>              | 1.8 x 10 <sup>-4</sup>              |
| Thermal Conductivity Cal / cm <sup>2</sup> sec <sup>°C</sup> | °C 3.0 - 4.0 x 10 <sup>-4</sup>          | 8.0 x 10 <sup>-4</sup>       | 8.0 x 10 <sup>-4</sup>             | 5.1 x 10 <sup>-4</sup>      | 5.8 x 10 <sup>-4</sup>                                                                                      | 5.6 x 10 <sup>-4</sup>              | 6.3 x 10 <sup>-4</sup>              |
| Specific Heat                                                | Cal / °C·g 0.3 - 0.5                     | 0.55                         | 0.55                               | 0.52                        | -                                                                                                           | 0.52                                |                                     |
| Tensile Strength                                             | kg / mm <sup>2</sup> 1.5 - 2.5           | 1.5 - 2.0                    | 1.8 - 3.0                          | 0.8 - 3.0                   | 0.4 - 3.0                                                                                                   | 0.7 - 3.0                           | 0.5 - 2.0                           |
| Elongation                                                   | % 200 - 400                              | 300 - 700                    | 300 - 700                          | 300 - 700                   | 100 - 700                                                                                                   | 400 - 900                           | 100 - 500                           |
| Abrasion Resistance                                          | Excellent                                | Good                         | Excellent                          | Good                        | Good                                                                                                        | Good                                | Good                                |
| Voltage Breakdown                                            | kV / mm 20 - 30                          | 30 - 50                      | 30 - 50                            | 16 - 32                     | 16 - 30                                                                                                     | 15 - 25                             | 16 - 32                             |
| Volume Resistivity                                           | Ω•cm 10 <sup>12</sup> - 10 <sup>15</sup> | > 10 <sup>16</sup>           | > 10 <sup>16</sup>                 | 10 <sup>15</sup>            | 10 <sup>14</sup> - 10 <sup>15</sup>                                                                         | 10 <sup>10</sup> - 10 <sup>12</sup> | 10 <sup>13</sup> - 10 <sup>14</sup> |
| Dielectric Constant                                          | 5.7                                      | 2.2 - 2.4                    | 2.2 - 2.4                          | 3 - 5                       | 3 - 5                                                                                                       | 7 - 10                              | -                                   |
| Dissipation Factor (tan δ)                                   | 0.1 - 0.03                               | < 0.0005                     | < 0.0005                           | 0.3 - 0.5                   | 2 - 5                                                                                                       | 1.7 - 4                             | -                                   |
| Weathering                                                   | Good                                     | Inferior*                    | Inferior*                          | Poor                        | Poor                                                                                                        | Excellent                           | Good                                |
| Ozone Resistance                                             | Excellent                                | Excellent                    | Excellent                          | Poor                        | Inferior                                                                                                    | Good                                | Good                                |
| Flame Resistance                                             | Self - Extinguish                        | Burns                        | Burns                              | Burn                        | Burn                                                                                                        | Self - Extinguish                   | Self - Extinguish                   |
| Track Resistance                                             | Inferior                                 | Excellent                    | Excellent                          | Fair                        | Fair                                                                                                        | Inferior                            | Good                                |
| Water Resistance                                             | Fair                                     | Excellent                    | Excellent                          | Fair                        | Fair                                                                                                        | Fair                                | Fair                                |
| Acid Resistance                                              | Excellent                                | Good                         | Good                               | Good                        | Fair                                                                                                        | Excellent                           | Good                                |
| Alkali Resistance                                            | Excellent                                | Excellent                    | Excellent                          | Good                        | Good                                                                                                        | Excellent                           | Excellent                           |
| Oil Resistance                                               | Good                                     | Excellent                    | Excellent                          | Poor                        | Inferior                                                                                                    | Good                                | Fair                                |
| Solvent Resistance                                           | Fair                                     | Excellent                    | Excellent                          | Inferior                    | Inferior                                                                                                    | Fair                                | Fair                                |

\* Improved to "good" with mixture of carbon black.

### General Comparison Data (Continued)

Improved to "goodH with mixture of carbon black.

# Properties of Insulation and Jacket Materials

## Thermal Properties

### Deflection temperature of plastics under load [ASTM D648]

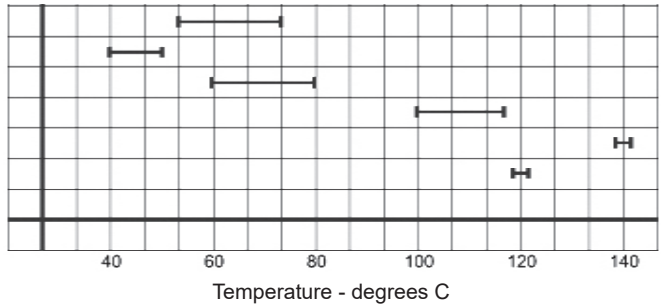
Polyvinyl Chloride (Hard Type)

Low Density Polyethylene

High Density Polyethylene

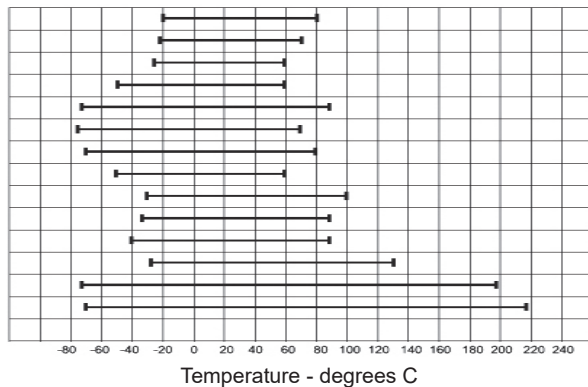
Polypropylene Polyamide

Polytetrafluoroethylene



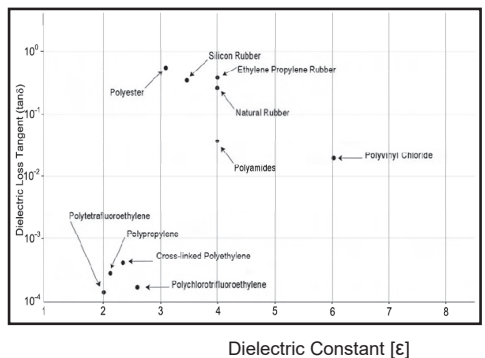
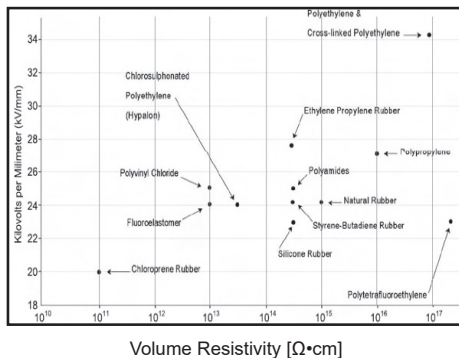
## Operating Temperature

[ Max. point : Max Continuous Operating Temperature  
Min.point : Brittleness Temperature ]



Polyvinyl Chloride, 80°C Grade  
Polyvinyl Chloride, 75°C Grade  
Polyvinyl Chloride, 60°C Grade Cold  
Resisting Polyvinyl Chloride  
Cross-Linked Polyethylene Polyethylene  
Nylon  
Synthetic Natural Rubber  
Chloroprene  
Styrene-Butadiene Rubber  
Ethylene-Propylene Rubber  
Chlorosulphonated Polyethylene (Hypalon)  
Silicone  
Teflon

## Electrical Properties

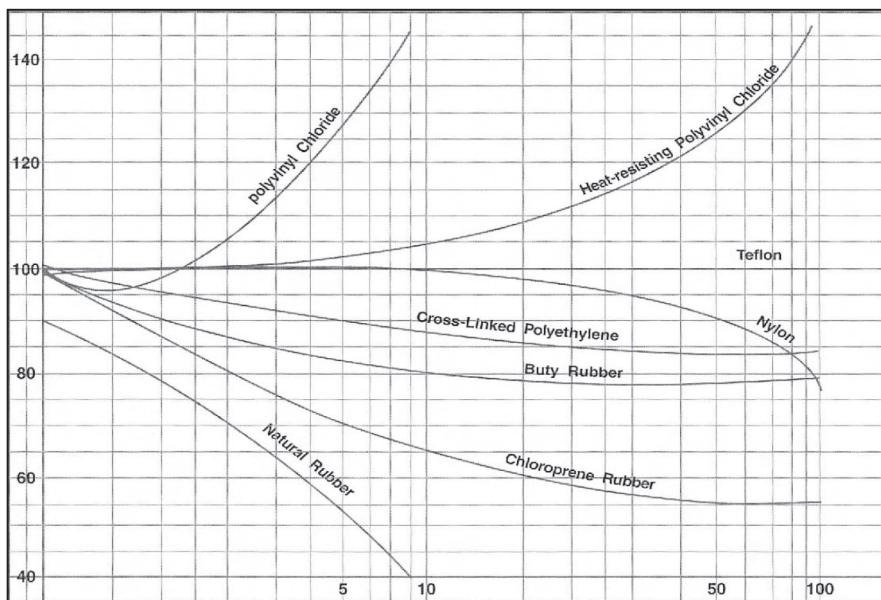


# Properties of Insulation and Jacket Materials

## Long - Time Heat Aging Curves

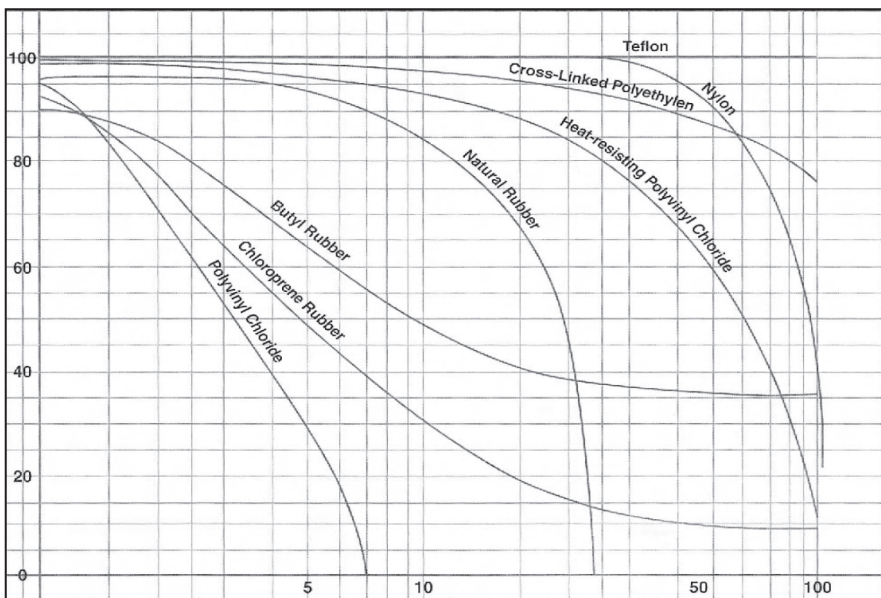
A

%Retention Critical Tensile Strength



Days in Air Oven 120°C

%Retention Critical Elongation



Days in Air Oven 120°C

# Condition of Installation

## Minimum Bending Radius

| Type of cable \ Number of core  |                | Single core     |                        | Multi cores |
|---------------------------------|----------------|-----------------|------------------------|-------------|
|                                 |                | Round conductor | Sector shape conductor |             |
| PVC & PE Sheath                 | Unshield cable | 8D              | 12D                    | 6D          |
|                                 | Shield Cable   | 10D             | 12D                    | 8D          |
| Wire armoured cable             |                | 10D             | 12D                    | 10D         |
| Lead sheathed                   |                | 10D             | 12D                    | 10D         |
| Corrugated metal armoured cable |                | -               | -                      | 8D          |
| Flattape armoured cable         |                | -               | -                      | 8D          |
| Al. flat sheathed cable         |                | 20D             | 20D                    | 20D         |
| Al. corrugated sheathed cable   |                | 15D             | 15D                    | 15D         |
| Al. solid conductor             |                | -               | -                      | 10D         |
| Cabtyre cable                   |                | 6D              | -                      | 4D          |

D: Overall diameter of cable

## Pennissible Maximum Pulling Tension

| Pulling tool | Material of conductor | Permissible maximum pulling tension (kgf)                                                |
|--------------|-----------------------|------------------------------------------------------------------------------------------|
| Pulling eye  | Copper                | $7 \times (\text{Number of core}) \times (\text{Cross-sectional area of conductor})$     |
|              | Aluminium             | $4 \times (\text{Number of core}) \times (\text{Cross-sectional area of conductor})$     |
| Cable grip   | Copper & Aluminium    | The same as using the pulling eye, but the maximum tension should be less than 1.5 tons. |

Note : When cable grip is used is should cover more than 500 mm. in length of the cable end and be bound to the cable sheath

## Side Wall Pressure to cable

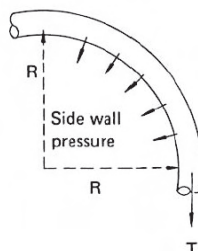
Permissible maximum side wall pressure to the cable at bending point during installation is

500 kg/m for at cable (Single core and multi core)

300 kg/m for PVC insulated PVC sheathed cable

250 kg/m for at triplex type

Side wall pressure to cable =  $\frac{\text{Pulling tension (kgf)}}{\text{bending radius (m)}}$



## Symbols of Electrical Units

| Electrical Unit      |                 | Symbol                              |
|----------------------|-----------------|-------------------------------------|
| CURRENT              | (AMPERE)        | A                                   |
| VOLTAGE              | (VOLT)          | V (kV)                              |
| RESISTANCE           | (OHM)           | $\Omega$ (k $\Omega$ , M $\Omega$ ) |
| ELECTRIC POWER       | (WATT)          | W (kW, MW.)                         |
| ELECTRIC ENERGY      | (WATT HOUR)     | Wh (kWh.)                           |
| HORSE POWER          |                 | HP                                  |
| POWER FACTOR         | (COS $\theta$ ) | P.F.                                |
| FREQUENCY            | (HERTZ)         | Hz                                  |
| CAPACITANCE          | (FARAD)         | F ( $\mu$ F, pF.)                   |
| APPARENT POWER       | (VOLTAMPERE)    | VA (kVA)                            |
| DIRECT CURRENT       |                 | DC                                  |
| ALTERNATING CURRENT  |                 | AC                                  |
| EFFICIENCY           |                 | Eff.                                |
| MAXIMUM VALUES       | (VOLTAMPERE)    | Em, Im                              |
| AVERAGE VALUES       | (VOLTAMPERE)    | Eav, Iav                            |
| EFFECTIVE VALUES     | (VOLTAMPERE)    | E, I                                |
| INSTANTANEOUS VALUES | (VOLTAMPERE)    | e, i                                |

## Electrical Formulas

| Direct Current                                               | Alternating Current                                                             |                                                                                             |
|--------------------------------------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
|                                                              | Single Phase                                                                    | Three Phase                                                                                 |
| $A = \frac{\text{kW} \times 1000}{V}$                        | $A = \frac{\text{kW} \times 1000}{V \times \text{P.F.}}$                        | $A = \frac{\text{kW} \times 1000}{1.73 \times V \times \text{P.F.}}$                        |
| $A = \frac{\text{kVA} \times 1000}{V}$                       | $A = \frac{\text{kVA} \times 1000}{V}$                                          | $A = \frac{\text{kVA} \times 1000}{1.73 \times V}$                                          |
| $A = \frac{\text{HP} \times 746}{V \times (\% \text{Eff.})}$ | $A = \frac{\text{HP} \times 746}{V \times (\% \text{Eff.}) \times \text{P.F.}}$ | $A = \frac{\text{HP} \times 746}{1.73 \times V \times (\% \text{Eff.}) \times \text{P.F.}}$ |
| $\text{kW} = \frac{A \times V}{1000}$                        | $\text{kW} = \frac{A \times V \times \text{P.F.}}{1000}$                        | $\text{kW} = \frac{A \times V \times 1.73 \times \text{P.F.}}{1000}$                        |
| $\text{kVA} = \frac{A \times V}{1000}$                       | $\text{kVA} = \frac{A \times V}{1000}$                                          | $\text{kVA} = \frac{A \times V \times 1.73}{1000}$                                          |
| $\text{HP} = \frac{A \times V \times (\% \text{Eff.})}{746}$ | $\text{HP} = \frac{A \times V \times (\% \text{Eff.}) \times \text{P.F.}}{746}$ | $\text{HP} = \frac{A \times V \times 1.73 \times (\% \text{Eff.}) \times \text{P.F.}}{746}$ |

Approximate Motor Amperes per Terminal

|         |                 |         |
|---------|-----------------|---------|
| 1 phase | 220 V ac = 4    | amps/HP |
| 3 phase | 200 V ac = 2.5  | amps/HP |
| 3 phase | 380 V ac = 1.41 | amps/HP |
| 3 phase | 440 V ac = 1    | amps/HP |
| 3 phase | 550 V ac = 1    | amps/HP |

## Table of The Dimesions for The Motor Starters

The figures are based on normal 3 - phase motor for a.c. at 50 c.p.s. 1400 - 1450 r.p.m.

| Motor ratings in HP at searvice voltage |                       |       |                       |       |                       | Rating of motor starter (A) | Relay setting (A) | Max. quick-blow back-up fuse (A) | Min cross section of cables (mm²) |
|-----------------------------------------|-----------------------|-------|-----------------------|-------|-----------------------|-----------------------------|-------------------|----------------------------------|-----------------------------------|
| 220 V                                   |                       | 380 V |                       | 440 V |                       |                             |                   |                                  |                                   |
| HP                                      | Full load current (A) | HP    | Full load current (A) | HP    | Full load current (A) |                             |                   |                                  |                                   |
|                                         |                       | 0.05  |                       | 0.05  |                       | 15                          | 0.15 - 0.25       | 1                                | 1.5                               |
| 0.05                                    |                       | 0.1   |                       | 0.1   |                       | 15                          | 0.25 - 0.4        | 2                                | 1.5                               |
|                                         |                       | 0.15  |                       | 0.20  |                       | 15                          | 0.4 - 0.65        | 4                                | 1.5                               |
| 0.1                                     |                       | 0.2   |                       | 0.25  | 0.5                   | 15                          | 0.4 - 0.65        | 4                                | 1.5                               |
| 0.15                                    |                       | 0.25  | 0.6                   | 0.50  | 0.9                   | 15                          | 0.6 - 1           | 6                                | 1.5                               |
| 0.25                                    | 1.1                   | 0.5   | 1.0                   |       |                       | 15                          | 1.0 - 1.6         | 6                                | 1.5                               |
|                                         |                       | 0.75  | 1.5                   | 0.75  | 1.2                   | 15                          | 1.0 - 1.6         | 6                                | 1.5                               |
| 0.5                                     | 1.8                   | 1.0   | 1.9                   | 1.0   | 1.6                   | 15                          | 1.5 - 2.5         | 15 (10)                          | 1.5                               |
| 0.75                                    | 2.5                   | 1.5   | 2.6                   | 2     | 3.2                   | 15                          | 2.5 - 4           | 25 (15)                          | 1.5                               |
| 1.0                                     | 3.2                   | 2     | 3.4                   | 2.5   | 3.9                   | 15                          | 2.5 - 4           | 25 (15)                          | 1.5                               |
| 1.5                                     | 4.4                   | 2.5   | 4.2                   | 3     | 4.5                   | 15                          | 4 - 6.5           | 25 (20)                          | 1.5                               |
| 2.0                                     | 5.8                   | 3     | 4.9                   | 4     | 6.0                   | 15                          | 4 - 6.5           | 25 (20)                          | 1.5                               |
| 2.5                                     | 7.3                   | 4     | 6.3                   | 5     | 7.5                   | 15                          | 6 - 10            | 35 (25)                          | 1.5                               |
| 3                                       | 8.4                   | 5     | 7.8                   | 6     | 8.5                   | 15                          | 6 - 10            | 35 (25)                          | 1.5                               |
| 4                                       | 11                    | 6     | 9.3                   | 7.5   | 11.0                  | 15                          | 9 - 14            | 35                               | 1.5                               |
| 5                                       | 13.5                  | 7.5   | 11.5                  |       |                       | 15                          | 9 - 14            | 35                               | 1.5                               |
|                                         |                       | 10    | 15                    | 10    | 14                    | 25                          | 13 - 20           | 60                               | 2.5                               |
| 7.5                                     | 19.5                  | 15    | 22                    | 15    | 21                    | 25                          | 16 - 25           | 60                               | 4                                 |
| 10                                      | 26                    | 20    | 29                    | 20    | 27                    | 60                          | 20 - 31           | 100                              | 6                                 |
| 15                                      | 39                    | 25    | 36                    | 30    | 39                    | 60                          | 28 - 43           | 125                              | 10                                |
| 20                                      | 51                    | 30    | 42                    |       |                       | 60                          | 40 - 60           | 160                              | 16                                |
|                                         |                       | 35    | 50                    | 35    | 46                    | 60                          | 40 - 60           | 160                              | 16                                |
|                                         |                       | 40    | 56                    | 40    | 52                    | 60                          | 40 - 60           | 160                              | 16                                |
| 25                                      | 63                    | 50    | 69                    | 50    | 65                    | 100                         | 50 - 75           | 200                              | 16                                |
| 35                                      | 91                    | 60    | 83                    | 60    | 76                    | 100                         | 70 - 100          | 200                              | 25                                |
| 40                                      | 100                   | 75    | 104                   | 75    | 96                    | 200                         | 84 - 120          | 400                              | 35                                |
| 50                                      | 125                   | 100   | 136                   | 100   | 125                   | 200                         | 105 - 150         | 500                              | 50                                |
| 75                                      | 184                   | 125   | 167                   | 125   | 155                   | 200                         | 140 - 200         | 500                              | 95                                |
|                                         |                       | 150   | 200                   | 150   | 180                   | 350                         | 175 - 250         | 600                              | 120                               |
| 100                                     | 245                   | 175   | 245                   | 175   | 215                   | 350                         | 175 - 250         | 600                              | 120                               |
| 120                                     | 295                   | 200   | 268                   | 200   | 240                   | 350                         | 210 - 300         | 850                              | 150                               |
| 150                                     | 370                   | 250   | 335                   | 250   | 300                   | 600                         | 280 - 400         | 850                              | 240                               |
| 175                                     | 425                   | 300   | 400                   | 300   | 360                   | 600                         | 350 - 500         | 1000                             | 400                               |
| 200                                     | 475                   | 350   | 470                   | 350   | 410                   | 600                         | 350 - 500         | 1000                             | 400                               |
| 225                                     | 540                   | 400   | 535                   | 400   | 450                   | 600                         | 420 - 600         | 1000                             |                                   |

Figures in brackets apply to hand operated motor starters.

## Standard Coefficient of Conversion

| Items          |                     | Description                   |                               |                              |                             |  |
|----------------|---------------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|--|
| 1. LENGTH      | 1 micron            | = 0.001 mm                    | = 3.94 X 10 <sup>-5</sup> in. |                              |                             |  |
|                | 1 mil               | = 0.0254 mm                   | = 0.001 in                    |                              |                             |  |
|                | 1 mm                | = 39.37 mils                  | = 0.03937 in.                 |                              |                             |  |
|                | 1 cm                | = 0.3937 in                   | = 0.0328 ft.                  |                              |                             |  |
|                | 1 inch              | = 25.4 mm                     | = 0.083 ft.                   | = 0.0278 yd.                 | = 2.54 cm.                  |  |
|                | 1 feet              | = 0.305 m                     | = 0.33 yd.                    |                              |                             |  |
|                | 1 yard              | = 0.914 m                     | = 91.44 cm.                   |                              |                             |  |
|                | 1 meter             | = 39.37 in                    | = 3.28 ft.                    | = 1.094 yd.                  |                             |  |
|                | 1 kilometer         | = 3,281 ft.                   | = 1,094 yd.                   | = 0.6213 mile                |                             |  |
|                | 1 mile              | = 5,280 ft.                   | = 1,760 yd.                   | = 1,609 m                    | = 1.609 km                  |  |
| 2. AREA        | 1 MCM               | = 1000 CM                     | (Circular Mil)                | = 0.5067 mm <sup>2</sup>     | = 1/1000 in <sup>2</sup>    |  |
|                | 1 CM                | = 0.0005067 mm <sup>2</sup>   | = 0.000000785 in <sup>2</sup> |                              | = 0.7854 sq. mil.           |  |
|                | 1 mm <sup>2</sup>   | = 1973 CM                     | = 0.00155 in <sup>2</sup>     | = 1,550 sq. mil.             |                             |  |
|                | 1 in <sup>2</sup>   | = 1273240 CM                  | = 645.1 mm <sup>2</sup>       | = 0.0069 ft. <sup>2</sup>    |                             |  |
|                | 1 yd <sup>2</sup>   | = 1,296 in <sup>2</sup>       | = 0.83613 m <sup>2</sup>      |                              |                             |  |
|                | 1 m <sup>2</sup>    | = 1,550 in <sup>2</sup>       | = 10.7 ft. <sup>2</sup>       | = 1.195 yd. <sup>2</sup>     |                             |  |
|                | 1 km <sup>2</sup>   | = 0.001562 mile <sup>2</sup>  |                               |                              |                             |  |
|                | 1 mile <sup>2</sup> | = 27,880,000 ft. <sup>2</sup> | = 3,098,000 yd. <sup>2</sup>  | = 2,590,000 m <sup>2</sup>   | = 2.59 km <sup>2</sup>      |  |
| 3. VOLUME      | 1 cm <sup>3</sup>   | = 0.061 in <sup>3</sup>       |                               |                              |                             |  |
|                | 1 in <sup>3</sup>   | = 16.39 cm <sup>3</sup>       | = 0.0036 gal.                 | = 0.0005787 ft. <sup>3</sup> |                             |  |
|                | 1 l                 | = 1,000 cm <sup>3</sup>       | = 61.023 in <sup>3</sup>      | = 0.2642 gal                 | = 0.03531 ft. <sup>3</sup>  |  |
|                | 1 gal.              | = 3,785 cm <sup>3</sup>       | = 231 in <sup>3</sup>         | = 0.1337 ft. <sup>3</sup>    | = 0.004951 yd. <sup>3</sup> |  |
|                | 1 ft. <sup>3</sup>  | = 28,317 cm <sup>3</sup>      | = 1,728 in <sup>3</sup>       | = 28.32 l.                   | = 7.48 gal                  |  |
|                | 1 yd <sup>3</sup>   | = 46,656 in <sup>3</sup>      | = 0.7646 m <sup>3</sup>       |                              |                             |  |
|                | 1 m <sup>3</sup>    | = 61,023 in <sup>3</sup>      | = 35.31 ft. <sup>3</sup>      | = 1.308 yd <sup>3</sup>      |                             |  |
| 4. WEIGHT      | 1 g.                | = 15.43 gr.                   | = 0.03527 oz.                 | = 0.002205 lb.               |                             |  |
|                | 1 oz.               | = 437.5 gr.                   | = 28.35 g.                    | = 0.0625 lb.                 |                             |  |
|                | 1 lb.               | = 7,000 gr.                   | = 453.6 g.                    | = 16 oz.                     | = 0.4536 kg.                |  |
|                | 1 kg.               | = 15,432 gr.                  | = 35.27 oz.                   | = 2.205 lb.                  |                             |  |
|                | 1 ton (short)       | = 2,000 lb.                   | = 907.2 kg.                   | = 0.8928 ton (long)          |                             |  |
|                | 1 ton (long)        | = 2,240 lb.                   | = 1.12 ton (short)            | = 1.016 ton (metric)         |                             |  |
|                | 1 ton (metric)      | = 2,204.62 lb.                |                               |                              |                             |  |
| 5. ENERGY      | 1 Btu.              | = 1,055 joules                | = 778.1 ft.-lb                | = 252 g-cal.                 | = 107.6 kg.-m.              |  |
|                |                     | = 0.2930 watt-hr.             |                               |                              |                             |  |
|                | 1 watt-hr.          | = 3,600 joules                | = 2,655.4 ft. -lb.            | = 860 g-cal.                 | = 367.1 kg.-m.              |  |
|                |                     | = 3.413 B.t.u.                | = 0.001341 hp.-hr.            |                              |                             |  |
|                | 1 hp.-hr.           | = 2,684,000 joules            | = 1,980,000 ft.-lb            | = 273,700 kg.-cm.            |                             |  |
|                |                     | = 745.6 watt-hr.              |                               |                              |                             |  |
|                | 1 kw - hr.          | = 2,655,000 ft.-lb.           | = 367,100 kg.-m.              | = 1.34 hp.-hr.               |                             |  |
| 6. POWER       | 1 watt              | = 44.26 ft.-lb./min           | = 6.199 kg-m/min              | = 0.001341 hp.               |                             |  |
|                | 1 hp                | = 33,000 ft.-lb./min          |                               | = 745.6 watts                | = 550 ft.-lb./sec.          |  |
|                |                     | = 76.04 kg-m/sec              |                               |                              |                             |  |
|                | 1 kw                | = 44,256.7 ft-lb./min         |                               | = 101.979 kg-m/sec           | = 1.341 hp.                 |  |
|                |                     | = 1,000 watts.                |                               |                              |                             |  |
| 7. TEMPERATURE | Temp °C             | = 5/9 (temp °F-32)            |                               |                              |                             |  |
|                | Temp °F             | = (9/5 x temp °C) +32         |                               |                              |                             |  |

## Conductivity and Density of Metals

| Kind                          | Symbol | Conductivity<br>(% IACS) | Density<br>(g/cm <sup>3</sup> ) |
|-------------------------------|--------|--------------------------|---------------------------------|
| Silver                        | Ag     | 108.6                    | 10.50                           |
| Stranded Copper<br>(Annealed) | Cu     | 100.0                    | 8.89                            |
| Gold                          | Au     | 72.5                     | 19.30                           |
| Aluminium                     | Al     | 61.0                     | 2.70                            |
| Iron                          | Fe     | 13.0                     | 7.78                            |
| Tin                           | Sn     | 12.2                     | 7.29                            |
| Steel                         | -      | 11.6                     | 7.78                            |

## Conductor Materials

| Material             | Specific resistance 20°C |           |           | Temperature<br>coefficient,<br>20°C | Density<br>(g/cm <sup>3</sup> ) |
|----------------------|--------------------------|-----------|-----------|-------------------------------------|---------------------------------|
|                      | μΩ-cm                    | μΩ-in     | Ω-cmil/ft |                                     |                                 |
| Annealed copper      | 1.724                    | 0.6788    | 10.37     | 0.00393                             | 8.89                            |
| Hard-drawn copper    | 1.79                     | 0.695     | 10.77     | 0.00378                             | 8.89                            |
| Annealed aluminium   | 2.82                     | 1.113     | 17.0      | 0.0039                              | 2.70                            |
| Hard-drawn aluminium | 2.92                     | 1.15      | 17.5      | 0.0038                              | 2.70                            |
| Pure iron            | 10.0                     | 3.93      | 60.0      | 0.006                               | 7.86                            |
| Steel wire           | 10.7-17.5                | 4.2-6.9   | 64-106    | 0.006-0.00036                       | 7.78                            |
| Cast iron            | 75-100                   | 29.5-39.4 | 450-600   | 0.001-0.00074                       | 7.32                            |

## Temperature Correction Factors for Conductor Resistance

Factors for correcting resistances at various temperatures of conductor to the standard reference temperature of 20°C and reciprocals of the factors for calculating resistances at other temperatures from the value at 20°C

| Temperature<br>°C | Correction Factor |          | Reciprocal of Factor |          |
|-------------------|-------------------|----------|----------------------|----------|
|                   | Copper            | Aluminum | Copper               | Aluminum |
| 0                 | 1.085             | 1.088    | 0.921                | 0.919    |
| 5                 | 1.063             | 1.064    | 0.941                | 0.940    |
| 10                | 1.041             | 1.042    | 0.961                | 0.960    |
| 15                | 1.020             | 1.021    | 0.980                | 0.980    |
| 20                | 1.000             | 1.000    | 1.000                | 1.000    |
| 25                | 0.981             | 0.980    | 1.020                | 1.020    |
| 30                | 0.962             | 0.961    | 1.039                | 1.040    |
| 35                | 0.944             | 0.943    | 1.059                | 1.060    |
| 40                | 0.927             | 0.925    | 1.079                | 1.081    |
| 45                | 0.911             | 0.908    | 1.098                | 1.101    |
| 50                | 0.895             | 0.892    | 1.118                | 1.121    |
| 55                | 0.879             | 0.876    | 1.138                | 1.141    |
| 60                | 0.864             | 0.861    | 1.157                | 1.161    |
| 65                | 0.850             | 0.846    | 1.177                | 1.181    |
| 70                | 0.836             | 0.832    | 1.197                | 1.202    |
| 75                | 0.822             | 0.819    | 1.216                | 1.222    |
| 80                | 0.809             | 0.805    | 1.236                | 1.242    |
| 85                | 0.797             | 0.792    | 1.255                | 1.262    |
| 90                | 0.784             | 0.780    | 1.275                | 1.282    |

The correction factor is given by:

$$k = \frac{1}{k_1} = \frac{1}{1 + \alpha(\theta - 20)}$$

Where:

**k** = temperature correction factor of conductor

**k<sub>1</sub>** = reciprocal of k

**α** = constant mass temperature coefficient at 20°C per °C  
 = 0.00393 for copper (based on 100% conductivity)  
 = 0.00403 for aluminum (based on 61% conductivity)

**θ** = referred temperature, °C

## Electrical Formulas

### D.C. resistance

#### Method of calculation of conductor maximum d.c. resistance

$$R_{dc} = \frac{4A}{n\pi d^2} \times K_1 \times K_2 \times K_3$$

Where:

$R_{dc}$  = the d.c. resistance at 20°C,  $\Omega/\text{km}$

A = the standard resistivity of the conductor metal at 20°C

17.241 for annealed copper

28.264 for aluminium alloy 1350

17.654 for tinned copper

$K_1$  = a factor dependent on the diameter of the wire in the conductor, on the kind of metal and on whether or not the copper wires are tinned or nickel-coated.

$K_2$  = A factor dependent on the conductor construction.

1.00 for Solid conductors

1.02 for stranded or uniaxial conductors in fixed cables, where the diameter of wires exceeds 0.6 mm

1.03 for stranded or bunched conductors in all cables where the diameter of wires  $\leq 0.6$  mm

1.04 for stranded or bunched conductors in all cables where the diameter of wires  $\geq 0.6$  mm

$K_3$  = A factor dependent on whether or not the conductor is, typically, used also in multicore cables.

1.00 for conductors in fixed cables of  $< 500 \text{ mm}^2$  (typically single core cables)

1.02 for conductors in fixed cables of  $< 500 \text{ mm}^2$  (typically multi core cables)

1.05 for conductors in all flexible cords and cables

n = the number of wires in the conductor

d = the diameter of wires in the conductor

| Diameter of wire in conductor |             | $K_1$                         |                                  |                               |                                  |
|-------------------------------|-------------|-------------------------------|----------------------------------|-------------------------------|----------------------------------|
|                               |             | Solid Conductor               |                                  | Stranded Conductor            |                                  |
| mm                            |             | Plain or silver plated copper | Tinned copper or plain aluminium | Plain or silver plated copper | Tinned copper or plain aluminium |
| >0.10                         | $\leq 0.10$ | -                             | -                                | 1.07                          | 1.12                             |
|                               | $\leq 0.31$ | -                             | -                                | 1.04                          | 1.07                             |
|                               | $\leq 0.91$ | 1.03                          | 1.05                             | 1.02                          | 1.04                             |
| >0.91                         | $\leq 3.60$ | 1.03                          | 1.04                             | 1.02                          | 1.03                             |
|                               | $\leq 4.50$ | 1.03                          | 1.04                             | -                             | -                                |
|                               | $> 4.50$    | 1.03                          | 1.03                             | -                             | -                                |

## Inductance

The inductance, L, per core of a 3-core cable or of three single-core cables comprises two parts namely the self-inductance of the conductor and the mutual inductance with other cores.

The formula for calculating the Inductance of a cable is given by:

$$L = K + 0.2 \log_{10} \left( \frac{2S}{d} \right) \text{ (mH/km)}$$

Where:

L = Inductance of cable in (mH/km)

K = Constant relating to the conductor formation (see table below)

S = Axial spacing between conductors within the cable (mm) or axial spacing between Conductors of a trefoil group of single core cables (mm) or

= 1.26 x phase spacing for a flat formation of three single-core cables (mm)

d = conductor diameter or for shaped designs the diameter of an equivalent circular conductor (mm)

Typical Values for K for Different Stranded Conductors (at 50Hz)

| Number of Wires in Conductor      | K      |
|-----------------------------------|--------|
| 9                                 | 0.0642 |
| 7                                 | 0.0554 |
| 37                                | 0.0528 |
| 61 and Over                       | 0.0514 |
| 1 (Solid)                         | 0.05   |
| Hollow core conductor, 12 mm duct | 0.0383 |

## Reactance (Inductive Reactance)

$$X = 2 \times \pi \times f \times L \text{ (}\Omega/\text{km)}$$

Where:

f = Frequency (Hz)

L = Inductance (mH/km)

## Impedance

$$Z = \sqrt{R^2 + X^2} \text{ (}\Omega/\text{km)}$$

Where:

R = Conductor Resistance ( $\Omega/\text{km}$ )

X = cable Inductive Reactance ( $\Omega/\text{km}$ )

## Dielectric loss (A.C. cables only)

The dielectric loss per unit length in each phase is giving by :

$$W_d = \omega C U_o^2 \tan \delta \text{ (W/m)}$$

Where:

$$\omega = 2\pi f$$

C = capacitance per unit length (F/m)

$U_o$  = voltage to earth (V)

| Type of cable                                       | Permittivity ( $\epsilon$ ) | $\tan \delta$ | $U_o$ |
|-----------------------------------------------------|-----------------------------|---------------|-------|
| PVC                                                 | 8                           | 0.1           | 6     |
| PE (HD and LD)                                      | 2.3                         | 0.001         | 127   |
| XLPE                                                |                             |               |       |
| • up to and including 18/30 (36)kV cable (unfilled) | 2.5                         | 0.004         | 127   |
| • greater 18/30 (36)kV cable (unfilled)             | 2.5                         | 0.001         | 127   |
| • greater 18/30 (36)kV cable (filled)               | 3                           | 0.005         | 63.5  |

## Capacitance

The capacitance of circular conductor is giving by :

$$C = \frac{\epsilon}{18 \ln \left( \frac{D}{d_c} \right)} 10^{-9} \text{ (F/m)}$$

Where:

$\epsilon$  = relative permittivity of the insulation

$D$  = external diameter of the insulation (excluding screen) (mm)

$d_c$  = diameter of conductor, including screen, if any (mm)

The same formula can be used for oval conductors if the geometric mean of the appropriate major and minor diameters is substituted for D, and  $d_c$ .

## AC resistance at temperature :

$$R_{ac} = R_{dc_i} (1 + Y_s + Y_p)$$

Where:

$R_{dc_i}$  = DC resistance at operating temperature

$Y_s$  = Skin effect factor

$Y_p$  = Proximity effect factor

### Skin effect factor $Y_s$

$$Y_s = X_s^4 / (192 + X_s^4)$$

Where:

$$X_s^4 = 8 \times \pi \times f \times 10^{-7} \times \frac{k_s}{R_{dc_i}}$$

$k_s$  = Factor determined by conductor construction

| Type of conductor | Whether dried and impregnated or not | $k_s$ | $k_p$    |
|-------------------|--------------------------------------|-------|----------|
| Copper            |                                      |       |          |
| Round, stranded   | Yes                                  | 1     | 0.8      |
| Round, stranded   | No                                   | 1     | 1        |
| Aluminium         | Either                               |       | see note |
| Round, stranded   | Either                               | 1     |          |

$f$  = Frequency (Hz)

$R_{dc_i}$  = DC resistance at operating temperature

### Proximity effect factor $Y_p$

1. For 2 core and 2 single core cables :

$$Y_p = X_p^4 / (192 + 0.8X_p^4) \times \left(\frac{d_c}{S}\right)^2 \times 2.9$$

2. For 3 core and 3 single core cables :

$$Y_p = X_p^4 / (192 + 0.8X_p^4) \times \left(\frac{d_c}{S}\right)^2 \times \left[ 0.312 \times \left(\frac{d_c}{S}\right)^2 + \frac{1.18}{[X_p^4 / (192 + 0.8X_p^4) \times 0.27]} \right]$$

Where:

$$X_p^4 = 8 \times \pi \times f \times 10^{-7} \times \frac{k_p}{R_{dc_i}}$$

$R_{dc_i}$  = DC resistance at operating temperature

$k_p$  = Factor determined by conductor construction

$d_c$  = Diameter of conductor (mm)

$S$  = Spacing between conductor centres (mm)

## Charging Current

$$I_c = \omega CV \times 10^{-6} \text{ (A)}$$

Where:

- $I_c$  = charging current (A/km)
- $\omega$  =  $2\pi$  time the frequency of the applied voltage
- $C$  = capacitance between the electrodes between which the voltage is applied ( $\mu\text{F}/\text{km}$ )
- $V$  = applied voltage (V)

## Insulation Resistance

$$IR \text{ at } 20^\circ\text{C} = 3.67 \times 10^{-12} \times p \times \log_{10} \left( \frac{D_2}{D_1} \right) \text{ (M}\Omega \cdot \text{km)}$$

Where:

- $R_i$  = insulation resistance of one kilometer of cable in Meggaohms (M $\Omega$ -km)
- $D_1$  = inner diameters of the insulation (mm)
- $D_2$  = outer diameters of the insulations (mm)
- $p$  = resistivity ( $\Omega$ -cm)

$$\text{XLPE} : 2.5 \times 10^{15}$$

$$\text{PVC} : 1 \times 10^{13} - 1 \times 10^{14}$$

## Short-Circuit Current Rating

$$\text{Copper Conductor} \quad I = A \times \sqrt{\left( \frac{0.0297}{t} \right) \log \left( \frac{234 + T_2}{234 + T_1} \right)} \times 1.973$$

$$\text{Aluminium Conductor} \quad I = A \times \sqrt{\left( \frac{0.0125}{t} \right) \log \left( \frac{228 + T_2}{228 + T_1} \right)} \times 1.973$$

Where:

- $I$  = Short circuit current (kA)
- $A$  = Cross-section area ( $\text{mm}^2$ )
- $t$  = Short circuit duration (sec)
- $T_1$  = Max. permissible continuous operating temp ( $^\circ\text{C}$ ); PVC=70, XLPE=90
- $T_2$  = Max. permissible temperature at short circuit ( $^\circ\text{C}$ ); PVC=160, XLPE=250

### Short-Circuit Current 1 sec at conductor (kA)

| Size<br>( $\text{mm}^2$ ) | Copper |       | Aluminium |      |
|---------------------------|--------|-------|-----------|------|
|                           | XLPE   | PVC   | XLPE      | PVC  |
| 1.5                       | 0.21   | 0.17  | -         | -    |
| 2.5                       | 0.35   | 0.29  | -         | -    |
| 4                         | 0.57   | 0.46  | -         | -    |
| 6                         | 0.85   | 0.68  | -         | -    |
| 10                        | 1.42   | 1.14  | 0.93      | 0.75 |
| 16                        | 2.27   | 1.83  | 1.48      | 1.19 |
| 25                        | 3.55   | 2.85  | 2.32      | 1.87 |
| 35                        | 4.97   | 3.99  | 3.25      | 2.61 |
| 50                        | 7.10   | 5.71  | 4.64      | 3.73 |
| 70                        | 9.94   | 7.99  | 6.50      | 5.23 |
| 95                        | 13.5   | 10.8  | 8.82      | 7.09 |
| 120                       | 17.0   | 13.7  | 11.1      | 8.96 |
| 150                       | 21.3   | 17.1  | 13.9      | 11.2 |
| 185                       | 26.3   | 21.1  | 17.2      | 13.8 |
| 240                       | 34.1   | 27.4  | 22.3      | 17.9 |
| 300                       | 42.6   | 34.2  | 27.8      | 22.4 |
| 400                       | 56.8   | 45.6  | 37.1      | 29.9 |
| 500                       | 71.0   | 57.1  | 46.4      | 37.3 |
| 630                       | 89.4   | 71.9  | 58.5      | 47.0 |
| 800                       | 113.6  | 91.3  | 74.2      | 59.7 |
| 1000                      | 142.0  | 114.1 | 92.8      | 74.7 |

## Short Circuit Performance of Metallic Shields and Sheath of Insulated Cable

$$I = \frac{A}{\sqrt{t}} \sqrt{K \log \left[ \frac{T_2 + \lambda}{T_1 + \lambda} \right]}$$

$$M = \sqrt{K \log \left[ \frac{T_2 + \lambda}{T_1 + \lambda} \right]}$$

$$I = \frac{MA}{\sqrt{t}}$$

I = Short-circuit current of copper shield (A)

A = Effective cross-sectional area of shield or sheath (circular mils) see table below

t = Time of short circuit (second)

| Type of shield or sheath                                                                      | Formula for calculating A                    |
|-----------------------------------------------------------------------------------------------|----------------------------------------------|
| 1. Wires applied either helically. as a braid or serving or longitudinally with corrugations. | $nd_s^2$                                     |
| 2. Helically applied tape. not overlapped.                                                    | $1.27nwb$                                    |
| 3. Helically applied flat tape. overlapped.<br>See note 3.                                    | $4bd_m \times \sqrt{\frac{100}{2(100 - L)}}$ |
| 4. Corrugated tape. longitudinally applied.                                                   | $1.27[\pi(d_{is} + 50) + B]b$                |
| 5. Tubular sheath.                                                                            | $4bd_m$                                      |

Where:

A = Effective cross-sectional area. shield or sheath, cmil.

B = Tape overlap. mils (usually 375)

b = Thickness of tape. mils.

$d_{is}$  = Diameter over extruded insulation screen, mils.

$d_m$  = Mean diameter of shield or sheath. mils.

$d_s$  = Diameter of wires. mils.

w = Width of tape. mils.

n = Number of serving or braid wires. or tapes.

L = Overlap of tape. percent.

## Voltage Drop Calculation

For single phase:

$$V_{1\phi} = \frac{2I(R \cos \theta + X \sin \theta)L}{1000}$$

Where:

$I$  is the nominal full load or starting current as applicable (A)

$R$  is the ac resistance of the cable ( $\Omega/\text{km}$ )

$X$  is the ac reactance of the cable ( $\Omega/\text{km}$ )

$\cos \theta$  is the load power factor (pu)

$L$  is the length of the cable (m)

For three phase:

$$V_{3\phi} = \frac{\sqrt{3}I(R \cos \theta + X \sin \theta)L}{1000}$$

Where:

$I$  is the nominal full load or starting current as applicable (A)

$R$  is the ac resistance of the cable ( $\Omega/\text{km}$ )

$X$  is the ac reactance of the cable ( $\Omega/\text{km}$ )

$\cos \theta$  is the load power factor (pu)

$L$  is the length of the cable (m)

## Calculating Maximum Cable Length Due to Voltage Drop

It may be more convenient to calculate the maximum length of a cable for a particular conductor size given a maximum permissible voltage drop (5% of the at full load Ref. NEC Standard) rather than the voltage drop itself. The maximum cable length that will achieve this can be calculated by re-arranging the voltage maximum permissible voltage drop:

For single phase:

$$L_{max} = \frac{1000V_{3\phi}}{2I(R \cos \theta + X \sin \theta)}$$

Where:

$I$  is the nominal full load or starting current as applicable (A)

$R$  is the ac resistance of the cable ( $\Omega/\text{km}$ )

$X$  is the ac reactance of the cable ( $\Omega/\text{km}$ )

$\cos \theta$  is the load power factor (pu)

$V_{1\phi}$  is the maximum permissible single phase voltage drop (V)

For three phase:

$$L_{max} = \frac{1000V_{3\phi}}{\sqrt{3}I(R \cos \theta + X \sin \theta)}$$

Where:

$I$  is the nominal full load or starting current as applicable (A)

$R$  is the ac resistance of the cable ( $\Omega/\text{km}$ )

$X$  is the ac reactance of the cable ( $\Omega/\text{km}$ )

$\cos \theta$  is the load power factor (pu)

$V_{3\phi}$  is the maximum permissible single phase voltage drop (V)

## CURRENT-CARRYING CAPACITIES OF CABLE

(Refer EIT Standard 022001-22)

**Table 5-8 :** Correction factor for a group of circuits, or a group of multi-cores cable

| No. of circuits or multi-cores cable | In cable raceway | Single layer on wall or floor |
|--------------------------------------|------------------|-------------------------------|
| 2                                    | 0.80             | 0.85                          |
| 3                                    | 0.70             | 0.79                          |
| 4                                    | 0.65             | 0.75                          |
| 5                                    | 0.60             | 0.73                          |
| 6                                    | 0.57             | 0.72                          |
| 7                                    | 0.54             | 0.72                          |
| 8                                    | 0.52             | 0.71                          |
| 9                                    | 0.50             | 0.70                          |
| 10-12                                | 0.45             | 0.70                          |
| 13-16                                | 0.41             | 0.70                          |
| 17-20                                | 0.38             | 0.70                          |

A

**Table 5-20:** Current rating of copper conductor, PVC insulated with/without sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C, ambient temperature 40°C, installed in raceway in air.

| Installation Group      | Group 1                                                                                                                                                                                          |                                                                                   |                                                                                   |                                                                                   | Group 2                                                                           |                                                                                   |                                                                                   |                                                                                    |
|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| No. of loaded Conductor | 2                                                                                                                                                                                                |                                                                                   | 3                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                    |
| Conductor Type          | Single-core                                                                                                                                                                                      | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                        |
| Installation Method     |                                                                                                                 |  |  |  |  |  |  |  |
| Electrical system       | AC or DC                                                                                                                                                                                         |                                                                                   | AC                                                                                |                                                                                   | AC or DC                                                                          |                                                                                   | AC                                                                                |                                                                                    |
| Cable Code              | 60227 IEC 01, 60227 IEC 02, 60227 IEC 05, 60227 IEC 06, 60227 IEC 10, NYY, NYY-G, VCT, VCT-G, IEC 60502-1 and special cable such as fire resistant (FRC), low smoke and halogen free (LSHF) etc. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Size (mm²)              | Current rating (A)                                                                                                                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| 1                       | 10                                                                                                                                                                                               | 10                                                                                | 9                                                                                 | 9                                                                                 | 12                                                                                | 11                                                                                | 10                                                                                | 10                                                                                 |
| 1.5                     | 13                                                                                                                                                                                               | 12                                                                                | 12                                                                                | 11                                                                                | 15                                                                                | 14                                                                                | 13                                                                                | 13                                                                                 |
| 2.5                     | 17                                                                                                                                                                                               | 16                                                                                | 16                                                                                | 15                                                                                | 21                                                                                | 20                                                                                | 18                                                                                | 17                                                                                 |
| 4                       | 23                                                                                                                                                                                               | 22                                                                                | 21                                                                                | 20                                                                                | 28                                                                                | 26                                                                                | 24                                                                                | 23                                                                                 |
| 6                       | 30                                                                                                                                                                                               | 28                                                                                | 27                                                                                | 25                                                                                | 36                                                                                | 33                                                                                | 31                                                                                | 30                                                                                 |
| 10                      | 40                                                                                                                                                                                               | 37                                                                                | 37                                                                                | 34                                                                                | 50                                                                                | 45                                                                                | 44                                                                                | 40                                                                                 |
| 16                      | 53                                                                                                                                                                                               | 50                                                                                | 49                                                                                | 45                                                                                | 66                                                                                | 60                                                                                | 59                                                                                | 54                                                                                 |
| 25                      | 70                                                                                                                                                                                               | 65                                                                                | 64                                                                                | 59                                                                                | 88                                                                                | 78                                                                                | 77                                                                                | 70                                                                                 |
| 35                      | 86                                                                                                                                                                                               | 80                                                                                | 77                                                                                | 72                                                                                | 109                                                                               | 97                                                                                | 96                                                                                | 86                                                                                 |
| 50                      | 104                                                                                                                                                                                              | 96                                                                                | 94                                                                                | 86                                                                                | 131                                                                               | 116                                                                               | 117                                                                               | 103                                                                                |
| 70                      | 131                                                                                                                                                                                              | 121                                                                               | 118                                                                               | 109                                                                               | 167                                                                               | 146                                                                               | 149                                                                               | 130                                                                                |
| 95                      | 158                                                                                                                                                                                              | 145                                                                               | 143                                                                               | 131                                                                               | 202                                                                               | 175                                                                               | 180                                                                               | 156                                                                                |
| 120                     | 183                                                                                                                                                                                              | 167                                                                               | 164                                                                               | 150                                                                               | 234                                                                               | 202                                                                               | 208                                                                               | 179                                                                                |
| 150                     | 209                                                                                                                                                                                              | 191                                                                               | 188                                                                               | 171                                                                               | 261                                                                               | 224                                                                               | 228                                                                               | 196                                                                                |
| 185                     | 238                                                                                                                                                                                              | 216                                                                               | 213                                                                               | 194                                                                               | 297                                                                               | 256                                                                               | 258                                                                               | 222                                                                                |
| 240                     | 279                                                                                                                                                                                              | 253                                                                               | 249                                                                               | 227                                                                               | 348                                                                               | 299                                                                               | 301                                                                               | 258                                                                                |
| 300                     | 319                                                                                                                                                                                              | 291                                                                               | 285                                                                               | 259                                                                               | 398                                                                               | 343                                                                               | 343                                                                               | 295                                                                                |
| 400                     | -                                                                                                                                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | 475                                                                               | -                                                                                 | 406                                                                               | -                                                                                  |
| 500                     | -                                                                                                                                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | 545                                                                               | -                                                                                 | 464                                                                               | -                                                                                  |

**Remark:** 1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.  
 2. For installation more than one circuit in raceway, correction factor given in Table 5-8 shall be applied.  
 3. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.

**Table 5-21:** Current rating of copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C or 90°C, ambient temperature 40°C, installed on wall.

| Installation Group      | Group 3                                                                           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Cable Type              | Flat                                                                              | Round                                                                             |                                                                                   |                                                                                   |                                                                                   | Round                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Conductor Type          | Multi-cores                                                                       | Single-core                                                                       |                                                                                   |                                                                                   |                                                                                   | Multi-cores                                                                       |                                                                                   |                                                                                   |                                                                                   |
| Insulation Type         | PVC                                                                               | PVC                                                                               |                                                                                   | XLPE                                                                              |                                                                                   | PVC                                                                               |                                                                                   | XLPE                                                                              |                                                                                   |
| Conductor temperature   | 70°C                                                                              | 70°C                                                                              |                                                                                   | 90°C                                                                              |                                                                                   | 70°C                                                                              |                                                                                   | 90°C                                                                              |                                                                                   |
| No. of loaded conductor | 2                                                                                 | 2                                                                                 | 3                                                                                 | 2                                                                                 | 3                                                                                 | 2                                                                                 | 3                                                                                 | 2                                                                                 | 3                                                                                 |
| Installation Method     |  |  |  |  |  |  |  |  |  |
| Electrical system       | AC                                                                                | AC, DC                                                                            | AC                                                                                | AC, DC                                                                            | AC                                                                                | AC, DC                                                                            | AC                                                                                | AC, DC                                                                            | AC                                                                                |
| Cable Code              | VAF, VAF-G                                                                        | NYY, IEC 60502-1                                                                  |                                                                                   | IEC60502-1                                                                        |                                                                                   | NYY, NYY-G, VCT, 60227 IEC 10, IEC 60502-1                                        |                                                                                   | IEC 60502-1                                                                       |                                                                                   |
| Size (mm²)              | Current rating (A)                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| 1                       | 14                                                                                | 13                                                                                | 12                                                                                | 17                                                                                | 16                                                                                | 13                                                                                | 12                                                                                | 17                                                                                | 15                                                                                |
| 1.5                     | 17                                                                                | 17                                                                                | 16                                                                                | 23                                                                                | 21                                                                                | 17                                                                                | 15                                                                                | 22                                                                                | 20                                                                                |
| 2.5                     | 23                                                                                | 23                                                                                | 22                                                                                | 31                                                                                | 29                                                                                | 23                                                                                | 21                                                                                | 30                                                                                | 27                                                                                |
| 4                       | 32                                                                                | 32                                                                                | 29                                                                                | 42                                                                                | 37                                                                                | 31                                                                                | 28                                                                                | 41                                                                                | 36                                                                                |
| 6                       | 41                                                                                | 41                                                                                | 37                                                                                | 54                                                                                | 49                                                                                | 40                                                                                | 36                                                                                | 53                                                                                | 47                                                                                |
| 10                      | 56                                                                                | 57                                                                                | 51                                                                                | 74                                                                                | 67                                                                                | 55                                                                                | 50                                                                                | 73                                                                                | 65                                                                                |
| 16                      | 74                                                                                | 76                                                                                | 69                                                                                | 99                                                                                | 90                                                                                | 74                                                                                | 66                                                                                | 97                                                                                | 87                                                                                |
| 25                      | -                                                                                 | 99                                                                                | 90                                                                                | 130                                                                               | 118                                                                               | 97                                                                                | 84                                                                                | 126                                                                               | 108                                                                               |
| 35                      | -                                                                                 | 123                                                                               | 112                                                                               | 160                                                                               | 147                                                                               | 120                                                                               | 104                                                                               | 156                                                                               | 134                                                                               |
| 50                      | -                                                                                 | 158                                                                               | 145                                                                               | 207                                                                               | 190                                                                               | 146                                                                               | 125                                                                               | 190                                                                               | 163                                                                               |
| 70                      | -                                                                                 | 204                                                                               | 186                                                                               | 267                                                                               | 244                                                                               | 185                                                                               | 160                                                                               | 245                                                                               | 208                                                                               |
| 95                      | -                                                                                 | 247                                                                               | 227                                                                               | 323                                                                               | 297                                                                               | 224                                                                               | 194                                                                               | 298                                                                               | 253                                                                               |
| 120                     | -                                                                                 | 287                                                                               | 264                                                                               | 375                                                                               | 345                                                                               | 260                                                                               | 225                                                                               | 348                                                                               | 293                                                                               |
| 150                     | -                                                                                 | 331                                                                               | 304                                                                               | 433                                                                               | 397                                                                               | 299                                                                               | 260                                                                               | 401                                                                               | 338                                                                               |
| 185                     | -                                                                                 | 379                                                                               | 348                                                                               | 496                                                                               | 455                                                                               | 341                                                                               | 297                                                                               | 460                                                                               | 386                                                                               |
| 240                     | -                                                                                 | 448                                                                               | 411                                                                               | 586                                                                               | 537                                                                               | 401                                                                               | 351                                                                               | 545                                                                               | 455                                                                               |
| 300                     | -                                                                                 | 517                                                                               | 474                                                                               | 676                                                                               | 620                                                                               | 461                                                                               | 404                                                                               | 630                                                                               | 524                                                                               |
| 400                     | -                                                                                 | 604                                                                               | 552                                                                               | 790                                                                               | 722                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |
| 500                     | -                                                                                 | 689                                                                               | 629                                                                               | 900                                                                               | 823                                                                               | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 |

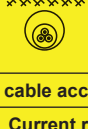
**Remark:** 1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.  
 2. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.  
 3. For installation more than one circuit in raceway, correction factor given in Table 5-8 shall be applied.

**Table 5-22:** Current rating of copper conductor, PVC insulated TIS 11-2553 for  $U_0/U \leq 450/750V$ , conductor temperature  $70^\circ C$  or  $90^\circ C$ , ambient temperature  $40^\circ C$  installed on insulator in air.

| Installation Group      | Group 4                                                                                                                                                                |                                                                                                                                                                        |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation Method     |  or  |  or  |
| Cable Code              | 60227 IEC 01, NYY                                                                                                                                                      |                                                                                                                                                                        |
| Size (mm <sup>2</sup> ) | Current rating (A)                                                                                                                                                     |                                                                                                                                                                        |
| 4                       | 30                                                                                                                                                                     | 37                                                                                                                                                                     |
| 6                       | 39                                                                                                                                                                     | 48                                                                                                                                                                     |
| 10                      | 56                                                                                                                                                                     | 67                                                                                                                                                                     |
| 16                      | 78                                                                                                                                                                     | 92                                                                                                                                                                     |
| 25                      | 113                                                                                                                                                                    | 127                                                                                                                                                                    |
| 35                      | 141                                                                                                                                                                    | 157                                                                                                                                                                    |
| 50                      | 171                                                                                                                                                                    | 191                                                                                                                                                                    |
| 70                      | 221                                                                                                                                                                    | 244                                                                                                                                                                    |
| 95                      | 271                                                                                                                                                                    | 297                                                                                                                                                                    |
| 120                     | 315                                                                                                                                                                    | 345                                                                                                                                                                    |
| 150                     | 365                                                                                                                                                                    | 397                                                                                                                                                                    |
| 185                     | 418                                                                                                                                                                    | 453                                                                                                                                                                    |
| 240                     | 495                                                                                                                                                                    | 535                                                                                                                                                                    |
| 300                     | 573                                                                                                                                                                    | 617                                                                                                                                                                    |
| 400                     | 692                                                                                                                                                                    | 741                                                                                                                                                                    |

**Remark:** For ambient temperature other than  $40^\circ C$ , correction factor given in Table 5-43 shall be applied

**Table 5-23:** Current rating for copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1kV$ , conductor temperature  $70^{\circ}C$ , ambient temperature  $30^{\circ}C$ , installed underground conduit or direct burial.

| Installation Group       | Group 5                                                                                                                                                             |                                                                                                                                                                     | Group 6                                                                                                                                                             |
|--------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No. of loaded conductors | 2                                                                                                                                                                   | 3                                                                                                                                                                   | $\leq 3$                                                                                                                                                            |
| Conductor Type           | Single-core/Multi-cores                                                                                                                                             | Single-core/Multi-cores                                                                                                                                             | Single-core/Multi-cores                                                                                                                                             |
| Installation Method      |   |   |   |
| Cable Code               | NYY, VCT, and cable according with IEC 60502-1                                                                                                                      |                                                                                                                                                                     |                                                                                                                                                                     |
| Size (mm <sup>2</sup> )  | Current rating (A)                                                                                                                                                  |                                                                                                                                                                     |                                                                                                                                                                     |
| 1                        | 17                                                                                                                                                                  | 15                                                                                                                                                                  | 21                                                                                                                                                                  |
| 1.5                      | 21                                                                                                                                                                  | 19                                                                                                                                                                  | 26                                                                                                                                                                  |
| 2.5                      | 28                                                                                                                                                                  | 25                                                                                                                                                                  | 35                                                                                                                                                                  |
| 4                        | 36                                                                                                                                                                  | 33                                                                                                                                                                  | 45                                                                                                                                                                  |
| 6                        | 46                                                                                                                                                                  | 41                                                                                                                                                                  | 57                                                                                                                                                                  |
| 10                       | 62                                                                                                                                                                  | 55                                                                                                                                                                  | 76                                                                                                                                                                  |
| 16                       | 81                                                                                                                                                                  | 72                                                                                                                                                                  | 99                                                                                                                                                                  |
| 25                       | 106                                                                                                                                                                 | 94                                                                                                                                                                  | 128                                                                                                                                                                 |
| 35                       | 129                                                                                                                                                                 | 114                                                                                                                                                                 | 154                                                                                                                                                                 |
| 50                       | 153                                                                                                                                                                 | 136                                                                                                                                                                 | 181                                                                                                                                                                 |
| 70                       | 190                                                                                                                                                                 | 168                                                                                                                                                                 | 223                                                                                                                                                                 |
| 95                       | 232                                                                                                                                                                 | 204                                                                                                                                                                 | 267                                                                                                                                                                 |
| 120                      | 265                                                                                                                                                                 | 234                                                                                                                                                                 | 304                                                                                                                                                                 |
| 150                      | 303                                                                                                                                                                 | 266                                                                                                                                                                 | 342                                                                                                                                                                 |
| 185                      | 344                                                                                                                                                                 | 303                                                                                                                                                                 | 386                                                                                                                                                                 |
| 240                      | 404                                                                                                                                                                 | 361                                                                                                                                                                 | 448                                                                                                                                                                 |
| 300                      | 462                                                                                                                                                                 | 404                                                                                                                                                                 | 507                                                                                                                                                                 |
| 400                      | 529                                                                                                                                                                 | 462                                                                                                                                                                 | 577                                                                                                                                                                 |
| 500                      | 605                                                                                                                                                                 | 527                                                                                                                                                                 | 654                                                                                                                                                                 |

**Remark :**

1. For ground temperature other than  $30^{\circ}C$ , correction factor given in Table 5-44 shall be applied.
2. For installation more than one circuit, correction factor given in Table 5-45 or 5-46 shall be applied.
3. For installation more than one circuit in raceway, correction factor given in Table 5-8 shall be applied.
4. The installation of the electrical system which is belong to MEA or PEA, Please consider current rating according to MEA or PEA standard except that no current rating is specified.

**Table 5-24:** Current rating for copper conductor, PVC insulated single-core TIS 11-2553 for  $U_0/U \leq 300/500V$ , conductor temperature 70°C or 90°C, ambient temperature 40°C, installed in air.

| Conductor temperature   | 70°C                       | 90°C                       |
|-------------------------|----------------------------|----------------------------|
| Cable Code              | 60227 IEC 05, 60227 IEC 06 | 60227 IEC 07, 60227 IEC 08 |
| Size (mm <sup>2</sup> ) | Current rating (A)         |                            |
| 0.5                     | 3                          | 3                          |
| 0.75                    | 6                          | 6                          |
| 1                       | 10*                        | 10                         |
| 1.5                     | -                          | 16                         |
| 2.5                     | -                          | 25                         |

**Remark :**

1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.
2. \*Current rating for 60227 IEC 06 cable only.

**Table 5-25:** Current rating for flexible copper conductor, PVC insulated with sheathed TIS 11-2553 for  $U_0/U \leq 300/500V$ , conductor temperature 70°C or 90°C, ambient temperature 40°C, installed in air.

| No. of loaded conductors | 2                                                      | 3  |
|--------------------------|--------------------------------------------------------|----|
| Cable Code               | 60227 IEC 52, 60227 IEC 53, 60227 IEC 56, 60227 IEC 57 |    |
| Size (mm <sup>2</sup> )  | Current rating (A)                                     |    |
| 0.5                      | 3                                                      | 3  |
| 0.75                     | 6                                                      | 6  |
| 1                        | 10                                                     | 10 |
| 1.5                      | 16                                                     | 16 |
| 2.5                      | 25                                                     | 20 |

**Remark :** For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.

**Table 5-26:** Current rating for flexible copper conductor, PVC insulated with/without sheathed  
TIS 11-2553 for  $U_0/U \leq 450/750V$ , conductor temperature  $70^\circ C$ , ambient temperature  $40^\circ C$ , installed in air.

| Conductor Type/<br>No. of loaded conductor | 2 Single-core cable or<br>2 Cores cable with/without ground | 3, 4, 5 Cores cable |
|--------------------------------------------|-------------------------------------------------------------|---------------------|
| Cable Code                                 | 60227 IEC 02, VCT, VCT-G                                    | VCT, VCT-G          |
| Size (mm <sup>2</sup> )                    | Current rating (A)                                          |                     |
| 1                                          | 13                                                          | 11                  |
| 1.5                                        | 16                                                          | 14                  |
| 2.5                                        | 25                                                          | 21                  |
| 4                                          | 30                                                          | 26                  |
| 6                                          | 39                                                          | 34                  |
| 10                                         | 51                                                          | 47                  |
| 16                                         | 73                                                          | 63                  |
| 25                                         | 97                                                          | 83                  |
| 35                                         | 140                                                         | 102                 |
| 50                                         | 175                                                         | -                   |
| 70                                         | 216                                                         | -                   |
| 95                                         | 258                                                         | -                   |
| 120                                        | 302                                                         | -                   |
| 150                                        | 347                                                         | -                   |
| 185                                        | 394                                                         | -                   |
| 240                                        | 471                                                         | -                   |

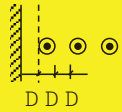
**Remark :** For ambient temperature other than  $40^\circ C$ , correction factor given in Table 5-43 shall be applied.

**Table 5-27:** Current rating for copper conductor, XLPE insulated with/without sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 40°C, installed in raceway in air.

| Installation Group      | Group 1                                                                                            |                                                                                   |                                                                                   |                                                                                   | Group 2                                                                           |                                                                                   |                                                                                   |                                                                                    |
|-------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| No. of loaded Conductor | 2                                                                                                  |                                                                                   | 3                                                                                 |                                                                                   | 2                                                                                 |                                                                                   | 3                                                                                 |                                                                                    |
| Conductor Type          | Single-core                                                                                        | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                        |
| Installation Method     |                   |  |  |  |  |  |  |  |
| Electrical system       | AC or DC                                                                                           |                                                                                   | AC                                                                                |                                                                                   | AC or DC                                                                          |                                                                                   | AC                                                                                |                                                                                    |
| Cable Code              | IEC 60502-1 and special cable such as fire resistant (FRC), low smoke and halogen free (LSHF) etc. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Size (mm²)              | Current rating (A)                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| 1                       | 13                                                                                                 | 13                                                                                | 12                                                                                | 12                                                                                | 15                                                                                | 15                                                                                | 14                                                                                | 14                                                                                 |
| 1.5                     | 17                                                                                                 | 17                                                                                | 15                                                                                | 15                                                                                | 21                                                                                | 20                                                                                | 18                                                                                | 18                                                                                 |
| 2.5                     | 24                                                                                                 | 23                                                                                | 21                                                                                | 20                                                                                | 28                                                                                | 27                                                                                | 25                                                                                | 24                                                                                 |
| 4                       | 32                                                                                                 | 30                                                                                | 28                                                                                | 27                                                                                | 38                                                                                | 36                                                                                | 34                                                                                | 32                                                                                 |
| 6                       | 41                                                                                                 | 38                                                                                | 36                                                                                | 35                                                                                | 49                                                                                | 46                                                                                | 44                                                                                | 40                                                                                 |
| 10                      | 56                                                                                                 | 52                                                                                | 49                                                                                | 46                                                                                | 68                                                                                | 63                                                                                | 60                                                                                | 55                                                                                 |
| 16                      | 74                                                                                                 | 69                                                                                | 66                                                                                | 62                                                                                | 91                                                                                | 83                                                                                | 80                                                                                | 73                                                                                 |
| 25                      | 96                                                                                                 | 90                                                                                | 86                                                                                | 81                                                                                | 121                                                                               | 108                                                                               | 106                                                                               | 96                                                                                 |
| 35                      | 119                                                                                                | 110                                                                               | 106                                                                               | 99                                                                                | 149                                                                               | 133                                                                               | 131                                                                               | 116                                                                                |
| 50                      | 144                                                                                                | 132                                                                               | 128                                                                               | 118                                                                               | 180                                                                               | 159                                                                               | 159                                                                               | 140                                                                                |
| 70                      | 182                                                                                                | 167                                                                               | 163                                                                               | 149                                                                               | 230                                                                               | 201                                                                               | 202                                                                               | 177                                                                                |
| 95                      | 219                                                                                                | 200                                                                               | 197                                                                               | 179                                                                               | 278                                                                               | 241                                                                               | 245                                                                               | 212                                                                                |
| 120                     | 253                                                                                                | 230                                                                               | 227                                                                               | 207                                                                               | 322                                                                               | 278                                                                               | 284                                                                               | 244                                                                                |
| 150                     | 289                                                                                                | 264                                                                               | 259                                                                               | 236                                                                               | 358                                                                               | 304                                                                               | 311                                                                               | 273                                                                                |
| 185                     | 329                                                                                                | 299                                                                               | 295                                                                               | 268                                                                               | 409                                                                               | 349                                                                               | 349                                                                               | 309                                                                                |
| 240                     | 386                                                                                                | 351                                                                               | 346                                                                               | 315                                                                               | 480                                                                               | 418                                                                               | 410                                                                               | 362                                                                                |
| 300                     | 442                                                                                                | 402                                                                               | 396                                                                               | 360                                                                               | 549                                                                               | 484                                                                               | 468                                                                               | 414                                                                                |
| 400                     | -                                                                                                  | -                                                                                 | -                                                                                 | -                                                                                 | 622                                                                               | -                                                                                 | 531                                                                               | -                                                                                  |
| 500                     | -                                                                                                  | -                                                                                 | -                                                                                 | -                                                                                 | 713                                                                               | -                                                                                 | 606                                                                               | -                                                                                  |

**Remark:** 1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.  
 2. For installation more than one circuit in raceway, correction factor given in Table 5-8 shall be applied.  
 3. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.

**Table 5-28:** Current rating for copper conductor, XLPE insulated with/without sheathed for  $U_0/U \leq 0.6/1\text{kV}$ , conductor temperature  $90^\circ\text{C}$ , ambient temperature  $40^\circ\text{C}$ , installed on insulator in air.

| Installation Group      | Group 4                                                                                                                                                             |                                                                                                                                                                     |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Installation Method     |   |   |
| Cable Code              | Cable according with IEC 60502-1                                                                                                                                    |                                                                                                                                                                     |
| Size (mm <sup>2</sup> ) | Current rating (A)                                                                                                                                                  |                                                                                                                                                                     |
| 4                       | 47                                                                                                                                                                  | 54                                                                                                                                                                  |
| 6                       | 60                                                                                                                                                                  | 68                                                                                                                                                                  |
| 10                      | 82                                                                                                                                                                  | 90                                                                                                                                                                  |
| 16                      | 110                                                                                                                                                                 | 124                                                                                                                                                                 |
| 25                      | 147                                                                                                                                                                 | 166                                                                                                                                                                 |
| 35                      | 183                                                                                                                                                                 | 206                                                                                                                                                                 |
| 50                      | 224                                                                                                                                                                 | 250                                                                                                                                                                 |
| 70                      | 289                                                                                                                                                                 | 321                                                                                                                                                                 |
| 95                      | 354                                                                                                                                                                 | 391                                                                                                                                                                 |
| 120                     | 413                                                                                                                                                                 | 455                                                                                                                                                                 |
| 150                     | 480                                                                                                                                                                 | 525                                                                                                                                                                 |
| 185                     | 551                                                                                                                                                                 | 602                                                                                                                                                                 |
| 240                     | 654                                                                                                                                                                 | 711                                                                                                                                                                 |
| 300                     | 758                                                                                                                                                                 | 821                                                                                                                                                                 |
| 400                     | 917                                                                                                                                                                 | 987                                                                                                                                                                 |
| 500                     | 1,064                                                                                                                                                               | 1,140                                                                                                                                                               |

**Remark:** For ambient temperature other than  $40^\circ\text{C}$ , correction factor given in Table 5-43 shall be applied

**Table 5-29:** Current rating for copper conductor, XLPE insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 30°C, installed underground conduit or direct burial.

| Installation Group       | Group 5                                                                                                                                                                |                                                                                                                                                                        | Group 6                                                                                                                                                                |
|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| No. of loaded conductors | 2                                                                                                                                                                      | 3                                                                                                                                                                      | $\leq 3$                                                                                                                                                               |
| Conductor Type           | Single-core/Multi-cores                                                                                                                                                | Single-core/Multi-cores                                                                                                                                                | Single-core/Multi-cores                                                                                                                                                |
| Installation Method      |  or  |  or  |  or  |
| Cable Code               | Cable according with IEC 60502-1                                                                                                                                       |                                                                                                                                                                        |                                                                                                                                                                        |
| Size (mm <sup>2</sup> )  | Current rating (A)                                                                                                                                                     |                                                                                                                                                                        |                                                                                                                                                                        |
| 1.5                      | 25                                                                                                                                                                     | 22                                                                                                                                                                     | 33                                                                                                                                                                     |
| 2.5                      | 33                                                                                                                                                                     | 29                                                                                                                                                                     | 43                                                                                                                                                                     |
| 4                        | 43                                                                                                                                                                     | 38                                                                                                                                                                     | 55                                                                                                                                                                     |
| 6                        | 54                                                                                                                                                                     | 47                                                                                                                                                                     | 70                                                                                                                                                                     |
| 10                       | 71                                                                                                                                                                     | 63                                                                                                                                                                     | 92                                                                                                                                                                     |
| 16                       | 94                                                                                                                                                                     | 83                                                                                                                                                                     | 119                                                                                                                                                                    |
| 25                       | 124                                                                                                                                                                    | 109                                                                                                                                                                    | 152                                                                                                                                                                    |
| 35                       | 150                                                                                                                                                                    | 132                                                                                                                                                                    | 184                                                                                                                                                                    |
| 50                       | 180                                                                                                                                                                    | 159                                                                                                                                                                    | 217                                                                                                                                                                    |
| 70                       | 223                                                                                                                                                                    | 196                                                                                                                                                                    | 266                                                                                                                                                                    |
| 95                       | 271                                                                                                                                                                    | 238                                                                                                                                                                    | 318                                                                                                                                                                    |
| 120                      | 313                                                                                                                                                                    | 275                                                                                                                                                                    | 362                                                                                                                                                                    |
| 150                      | 355                                                                                                                                                                    | 312                                                                                                                                                                    | 406                                                                                                                                                                    |
| 185                      | 406                                                                                                                                                                    | 356                                                                                                                                                                    | 459                                                                                                                                                                    |
| 240                      | 477                                                                                                                                                                    | 418                                                                                                                                                                    | 533                                                                                                                                                                    |
| 300                      | 543                                                                                                                                                                    | 475                                                                                                                                                                    | 601                                                                                                                                                                    |
| 400                      | 625                                                                                                                                                                    | 545                                                                                                                                                                    | 684                                                                                                                                                                    |
| 500                      | 717                                                                                                                                                                    | 623                                                                                                                                                                    | 777                                                                                                                                                                    |

**Remark :**

1. For ground temperature other than 30°C, correction factor given in Table 5-44 shall be applied.
2. For installation more than one circuit, correction factor given in Table 5-45 or 5-46 shall be applied.
3. For installation more than one circuit in raceway, correction factor given in Table 5-8 shall be applied.
4. The installation of the electrical system which is belong to MEA or PEA, Please consider current rating according to MEA or PEA standard except that no current rating is specified.

**Table 5-30:** Current rating of copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C, ambient temperature 40°C, installed on perforated cable tray or cable ladder without cover.

| Installation Group       | Group 7                                                                                                                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| No. of loaded conductors | 2                                                                                                                          |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Conductor Type           | Single-core/Multi-cores                                                                                                    |                                                                                   | Single-core                                                                       |                                                                                   |                                                                                   |                                                                                   | Multi-cores                                                                       |
| Installation Method      |                                           |  |  |  |  |  |  |
| Electrical system        | AC or DC                                                                                                                   |                                                                                   | AC                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Cable Code               | 60227 IEC 10, NYY, VCT, IEC 60502-1 and special cable such as fire resistant (FRC), low smoke and halogen free (LSHF) etc. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Size (mm²)               | Current rating (A)                                                                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| 1                        | -                                                                                                                          | 15                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 13                                                                                |
| 1.5                      | -                                                                                                                          | 19                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 16                                                                                |
| 2.5                      | -                                                                                                                          | 26                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 22                                                                                |
| 4                        | -                                                                                                                          | 35                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 30                                                                                |
| 6                        | -                                                                                                                          | 44                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 37                                                                                |
| 10                       | -                                                                                                                          | 61                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 52                                                                                |
| 16                       | -                                                                                                                          | 82                                                                                | -                                                                                 | -                                                                                 | -                                                                                 | -                                                                                 | 70                                                                                |
| 25                       | 114                                                                                                                        | 104                                                                               | 99                                                                                | 96                                                                                | 127                                                                               | 113                                                                               | 88                                                                                |
| 35                       | 141                                                                                                                        | 129                                                                               | 124                                                                               | 119                                                                               | 157                                                                               | 141                                                                               | 110                                                                               |
| 50                       | 171                                                                                                                        | 157                                                                               | 151                                                                               | 145                                                                               | 191                                                                               | 171                                                                               | 133                                                                               |
| 70                       | 218                                                                                                                        | 202                                                                               | 196                                                                               | 188                                                                               | 244                                                                               | 221                                                                               | 171                                                                               |
| 95                       | 264                                                                                                                        | 245                                                                               | 239                                                                               | 230                                                                               | 297                                                                               | 271                                                                               | 207                                                                               |
| 120                      | 306                                                                                                                        | 285                                                                               | 279                                                                               | 268                                                                               | 345                                                                               | 315                                                                               | 240                                                                               |
| 150                      | 353                                                                                                                        | 330                                                                               | 324                                                                               | 310                                                                               | 397                                                                               | 365                                                                               | 278                                                                               |
| 185                      | 403                                                                                                                        | 378                                                                               | 371                                                                               | 356                                                                               | 453                                                                               | 418                                                                               | 317                                                                               |
| 240                      | 475                                                                                                                        | 447                                                                               | 441                                                                               | 422                                                                               | 535                                                                               | 495                                                                               | 374                                                                               |
| 300                      | 547                                                                                                                        | 516                                                                               | 511                                                                               | 488                                                                               | 617                                                                               | 573                                                                               | 432                                                                               |
| 400                      | 656                                                                                                                        | -                                                                                 | 599                                                                               | 571                                                                               | 741                                                                               | 692                                                                               | -                                                                                 |
| 500                      | 755                                                                                                                        | -                                                                                 | 686                                                                               | 652                                                                               | 854                                                                               | 800                                                                               | -                                                                                 |

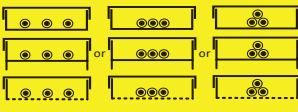
**Remark:** 1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.  
 2. For installation more than one circuit in raceway, correction factor given in Table 40 or 5-41 for single core and multi cores cable respectively shall be applied.  
 3. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.

**Table 5-30 (a):** Current rating of copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C, ambient temperature 40°C, installed on unperforated cable tray without cover.

| Installation Group       | Group 7                                                                                                                    |                                                                                   |                                                                                   |                                                                                   |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| No. of loaded conductors | 2                                                                                                                          |                                                                                   | 3                                                                                 | 3 or 4                                                                            |
| Conductor Type           | Single-core                                                                                                                | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                       |
| Installation Method      |                                           |  |  |  |
| Electrical system        | AC or DC                                                                                                                   |                                                                                   | AC                                                                                |                                                                                   |
| Cable Code               | 60227 IEC 10, NYY, VCT, IEC 60502-1 and special cable such as fire resistant (FRC), low smoke and halogen free (LSHF) etc. |                                                                                   |                                                                                   |                                                                                   |
| Size (mm²)               | Current rating (A)                                                                                                         |                                                                                   |                                                                                   |                                                                                   |
| 1                        | -                                                                                                                          | 13                                                                                | -                                                                                 | 12                                                                                |
| 1.5                      | -                                                                                                                          | 17                                                                                | -                                                                                 | 15                                                                                |
| 2.5                      | -                                                                                                                          | 23                                                                                | -                                                                                 | 21                                                                                |
| 4                        | -                                                                                                                          | 31                                                                                | -                                                                                 | 28                                                                                |
| 6                        | -                                                                                                                          | 40                                                                                | -                                                                                 | 36                                                                                |
| 10                       | -                                                                                                                          | 55                                                                                | -                                                                                 | 50                                                                                |
| 16                       | -                                                                                                                          | 74                                                                                | -                                                                                 | 66                                                                                |
| 25                       | 99                                                                                                                         | 97                                                                                | 90                                                                                | 84                                                                                |
| 35                       | 123                                                                                                                        | 120                                                                               | 112                                                                               | 104                                                                               |
| 50                       | 158                                                                                                                        | 146                                                                               | 145                                                                               | 125                                                                               |
| 70                       | 204                                                                                                                        | 185                                                                               | 186                                                                               | 160                                                                               |
| 95                       | 247                                                                                                                        | 224                                                                               | 227                                                                               | 194                                                                               |
| 120                      | 287                                                                                                                        | 260                                                                               | 264                                                                               | 225                                                                               |
| 150                      | 331                                                                                                                        | 299                                                                               | 304                                                                               | 260                                                                               |
| 185                      | 379                                                                                                                        | 341                                                                               | 348                                                                               | 297                                                                               |
| 240                      | 448                                                                                                                        | 401                                                                               | 411                                                                               | 351                                                                               |
| 300                      | 517                                                                                                                        | 461                                                                               | 474                                                                               | 404                                                                               |
| 400                      | 604                                                                                                                        | -                                                                                 | 552                                                                               | -                                                                                 |
| 500                      | 689                                                                                                                        | -                                                                                 | 629                                                                               | -                                                                                 |

**Remark:** 1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.  
 2. For installation more than one circuit in raceway, correction factor given in Table 5-40 or 5-41 for single core and multi cores cable respectively shall be applied.  
 3. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.

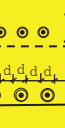
**Table 5-31:** Current rating for copper conductor, PVC insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 70°C, ambient temperature 40°C, installed on perforated or unperforated cable tray or cable ladder with cover.

| Installation Group       | Group 7                                                                                                                    |                                                                                   |                                                                                   |                                                                                   |
|--------------------------|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| No. of loaded conductors | 2                                                                                                                          |                                                                                   | 3                                                                                 |                                                                                   |
| Conductor Type           | Single-core                                                                                                                | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                       |
| Installation Method      |                                           |  |  |  |
| Electrical system        | AC or DC                                                                                                                   |                                                                                   | AC                                                                                |                                                                                   |
| Cable Code               | 60227 IEC 10, NYY, VCT, IEC 60502-1 and special cable such as fire resistant (FRC), low smoke and halogen free (LSHF) etc. |                                                                                   |                                                                                   |                                                                                   |
| Size (mm <sup>2</sup> )  | Current rating (A)                                                                                                         |                                                                                   |                                                                                   |                                                                                   |
| 1                        | -                                                                                                                          | 11                                                                                | -                                                                                 | 10                                                                                |
| 1.5                      | -                                                                                                                          | 14                                                                                | -                                                                                 | 13                                                                                |
| 2.5                      | -                                                                                                                          | 20                                                                                | -                                                                                 | 17                                                                                |
| 4                        | -                                                                                                                          | 26                                                                                | -                                                                                 | 23                                                                                |
| 6                        | -                                                                                                                          | 33                                                                                | -                                                                                 | 30                                                                                |
| 10                       | -                                                                                                                          | 45                                                                                | -                                                                                 | 40                                                                                |
| 16                       | -                                                                                                                          | 60                                                                                | -                                                                                 | 54                                                                                |
| 25                       | 88                                                                                                                         | 78                                                                                | 77                                                                                | 70                                                                                |
| 35                       | 109                                                                                                                        | 97                                                                                | 96                                                                                | 86                                                                                |
| 50                       | 131                                                                                                                        | 116                                                                               | 117                                                                               | 103                                                                               |
| 70                       | 167                                                                                                                        | 146                                                                               | 149                                                                               | 130                                                                               |
| 95                       | 202                                                                                                                        | 175                                                                               | 180                                                                               | 156                                                                               |
| 120                      | 234                                                                                                                        | 202                                                                               | 208                                                                               | 179                                                                               |
| 150                      | 261                                                                                                                        | 224                                                                               | 228                                                                               | 196                                                                               |
| 185                      | 279                                                                                                                        | 256                                                                               | 258                                                                               | 222                                                                               |
| 240                      | 348                                                                                                                        | 299                                                                               | 301                                                                               | 258                                                                               |
| 300                      | 398                                                                                                                        | 343                                                                               | 343                                                                               | 295                                                                               |
| 400                      | 475                                                                                                                        | -                                                                                 | 406                                                                               | -                                                                                 |
| 500                      | 545                                                                                                                        | -                                                                                 | 464                                                                               | -                                                                                 |

**Remark (Table 5-31)**

1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.
2. For installation more than one circuit, correction factor given in Table 5-40 or 5-41 for single core and multi cores cable respectively shall be applied.
3. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.

**Table 5-32:** Current rating for copper conductor, XLPE insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 40°C, installed on perforated cable tray or cable ladder without cover.

| Installation Group       | Group 7                                                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| No. of loaded conductors | 2                                                                                                                       |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Conductor Type           | Single-core                                                                                                             | Multi-cores                                                                       | Single-core                                                                       |                                                                                   |                                                                                   |                                                                                   | Multi-cores                                                                        |
| Installation Method      |                                        |  |  |  |  |  |  |
| Electrical system        | AC or DC                                                                                                                |                                                                                   | AC                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Cable Code               | Cable according with IEC 60502-1 and special cable such as fire resistant (FRC), low smoke and halogen free (LSHF) etc. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| Size (mm²)               | Current rating (A)                                                                                                      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| 1                        | -                                                                                                                       | 19                                                                                | -                                                                                 |                                                                                   |                                                                                   |                                                                                   | 16                                                                                 |
| 1.5                      | -                                                                                                                       | 24                                                                                | -                                                                                 |                                                                                   |                                                                                   |                                                                                   | 21                                                                                 |
| 2.5                      | -                                                                                                                       | 33                                                                                | -                                                                                 |                                                                                   |                                                                                   |                                                                                   | 29                                                                                 |
| 4                        | -                                                                                                                       | 45                                                                                | -                                                                                 |                                                                                   |                                                                                   |                                                                                   | 38                                                                                 |
| 6                        | -                                                                                                                       | 57                                                                                | -                                                                                 |                                                                                   |                                                                                   |                                                                                   | 49                                                                                 |
| 10                       | -                                                                                                                       | 78                                                                                | -                                                                                 |                                                                                   |                                                                                   |                                                                                   | 68                                                                                 |
| 16                       | -                                                                                                                       | 105                                                                               | -                                                                                 |                                                                                   |                                                                                   |                                                                                   | 91                                                                                 |
| 25                       | 147                                                                                                                     | 136                                                                               | 128                                                                               | 123                                                                               | 166                                                                               | 147                                                                               | 116                                                                                |
| 35                       | 182                                                                                                                     | 168                                                                               | 160                                                                               | 154                                                                               | 206                                                                               | 183                                                                               | 144                                                                                |
| 50                       | 220                                                                                                                     | 205                                                                               | 197                                                                               | 188                                                                               | 250                                                                               | 224                                                                               | 175                                                                                |
| 70                       | 282                                                                                                                     | 263                                                                               | 254                                                                               | 244                                                                               | 321                                                                               | 289                                                                               | 224                                                                                |
| 95                       | 343                                                                                                                     | 320                                                                               | 311                                                                               | 298                                                                               | 391                                                                               | 354                                                                               | 271                                                                                |
| 120                      | 398                                                                                                                     | 374                                                                               | 364                                                                               | 349                                                                               | 455                                                                               | 413                                                                               | 315                                                                                |
| 150                      | 459                                                                                                                     | 430                                                                               | 422                                                                               | 404                                                                               | 525                                                                               | 480                                                                               | 363                                                                                |
| 185                      | 523                                                                                                                     | 493                                                                               | 485                                                                               | 464                                                                               | 602                                                                               | 551                                                                               | 415                                                                                |
| 240                      | 618                                                                                                                     | 583                                                                               | 577                                                                               | 552                                                                               | 711                                                                               | 654                                                                               | 490                                                                                |
| 300                      | 713                                                                                                                     | 674                                                                               | 670                                                                               | 640                                                                               | 821                                                                               | 758                                                                               | 564                                                                                |
| 400                      | 855                                                                                                                     | -                                                                                 | 790                                                                               | 749                                                                               | 987                                                                               | 917                                                                               | -                                                                                  |
| 500                      | 986                                                                                                                     | -                                                                                 | 908                                                                               | 861                                                                               | 1,140                                                                             | 1,064                                                                             | -                                                                                  |

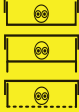
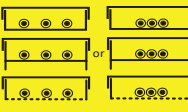
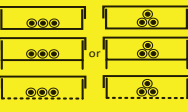
**Remark:** 1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.  
 2. For installation more than one circuit in raceway, correction factor given in Table 5-40 or 5-41 for single core and multi cores cable respectively shall be applied.  
 3. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.

**Table 5-32 (a):** Current rating for copper conductor, XLPE insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 40°C, installed on unperforated cable tray without cover.

| Installation Group       | Group 7                                                                                                                 |                                                                                   |                                                                                   |                                                                                   |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| No. of loaded conductors | 2                                                                                                                       |                                                                                   | 3                                                                                 |                                                                                   |
| Conductor Type           | Single-core                                                                                                             | Multi-cores                                                                       | Single-core                                                                       | Multi-cores                                                                       |
| Installation Method      |                                        |  |  |  |
| Electrical system        | AC or DC                                                                                                                |                                                                                   | AC                                                                                |                                                                                   |
| Cable Code               | Cable according with IEC 60502-1 and special cable such as fire resistant (FRC), low smoke and halogen free (LSHF) etc. |                                                                                   |                                                                                   |                                                                                   |
| Size (mm²)               | Current rating (A)                                                                                                      |                                                                                   |                                                                                   |                                                                                   |
| 1                        | -                                                                                                                       | 17                                                                                | -                                                                                 | 15                                                                                |
| 1.5                      | -                                                                                                                       | 22                                                                                | -                                                                                 | 20                                                                                |
| 2.5                      | -                                                                                                                       | 30                                                                                | -                                                                                 | 27                                                                                |
| 4                        | -                                                                                                                       | 41                                                                                | -                                                                                 | 36                                                                                |
| 6                        | -                                                                                                                       | 53                                                                                | -                                                                                 | 47                                                                                |
| 10                       | -                                                                                                                       | 73                                                                                | -                                                                                 | 65                                                                                |
| 16                       | -                                                                                                                       | 97                                                                                | -                                                                                 | 87                                                                                |
| 25                       | 130                                                                                                                     | 126                                                                               | 118                                                                               | 108                                                                               |
| 35                       | 160                                                                                                                     | 156                                                                               | 147                                                                               | 134                                                                               |
| 50                       | 207                                                                                                                     | 190                                                                               | 190                                                                               | 163                                                                               |
| 70                       | 267                                                                                                                     | 245                                                                               | 244                                                                               | 208                                                                               |
| 95                       | 323                                                                                                                     | 298                                                                               | 297                                                                               | 253                                                                               |
| 120                      | 376                                                                                                                     | 348                                                                               | 345                                                                               | 293                                                                               |
| 150                      | 433                                                                                                                     | 401                                                                               | 397                                                                               | 338                                                                               |
| 185                      | 496                                                                                                                     | 460                                                                               | 455                                                                               | 386                                                                               |
| 240                      | 586                                                                                                                     | 545                                                                               | 537                                                                               | 455                                                                               |
| 300                      | 676                                                                                                                     | 630                                                                               | 620                                                                               | 524                                                                               |
| 400                      | 790                                                                                                                     | -                                                                                 | 722                                                                               | -                                                                                 |
| 500                      | 901                                                                                                                     | -                                                                                 | 823                                                                               | -                                                                                 |

**Remark:** 1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.  
 2. For installation more than one circuit, correction factor given in Table 5-40 or 5-41 for single core and multi cores cable respectively shall be applied. .  
 3. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.

**Table 5-33:** Current rating for copper conductor, XLPE insulated with sheathed for  $U_0/U \leq 0.6/1$  kV, conductor temperature 90°C, ambient temperature 40°C, installed on unperforated or perforated cable tray or cable ladder with cover.

| Installation Group       | Group 7                                                                                            |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |
|--------------------------|----------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| No. of loaded conductors | 2                                                                                                  |                                                                                   | 3                                                                                                                                                                                                                                                           |                                                                                   |
| Conductor Type           | Single-core                                                                                        | Multi-cores                                                                       | Single-core                                                                                                                                                                                                                                                 | Multi-cores                                                                       |
| Installation Method      |                   |  |  or  or  |  |
| Electrical system        | AC or DC                                                                                           |                                                                                   | AC                                                                                                                                                                                                                                                          |                                                                                   |
| Cable Code               | IEC 60502-1 and special cable such as fire resistant (FRC), low smoke and halogen free (LSHF) etc. |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |
| Size (mm²)               | Current rating (A)                                                                                 |                                                                                   |                                                                                                                                                                                                                                                             |                                                                                   |
| 1                        | -                                                                                                  | 15                                                                                | -                                                                                                                                                                                                                                                           | 14                                                                                |
| 1.5                      | -                                                                                                  | 20                                                                                | -                                                                                                                                                                                                                                                           | 18                                                                                |
| 2.5                      | -                                                                                                  | 27                                                                                | -                                                                                                                                                                                                                                                           | 24                                                                                |
| 4                        | -                                                                                                  | 36                                                                                | -                                                                                                                                                                                                                                                           | 32                                                                                |
| 6                        | -                                                                                                  | 46                                                                                | -                                                                                                                                                                                                                                                           | 40                                                                                |
| 10                       | -                                                                                                  | 63                                                                                | -                                                                                                                                                                                                                                                           | 55                                                                                |
| 16                       | -                                                                                                  | 83                                                                                | -                                                                                                                                                                                                                                                           | 73                                                                                |
| 25                       | 121                                                                                                | 108                                                                               | 106                                                                                                                                                                                                                                                         | 96                                                                                |
| 35                       | 149                                                                                                | 133                                                                               | 131                                                                                                                                                                                                                                                         | 116                                                                               |
| 50                       | 180                                                                                                | 159                                                                               | 159                                                                                                                                                                                                                                                         | 140                                                                               |
| 70                       | 230                                                                                                | 201                                                                               | 202                                                                                                                                                                                                                                                         | 177                                                                               |
| 95                       | 278                                                                                                | 241                                                                               | 245                                                                                                                                                                                                                                                         | 212                                                                               |
| 120                      | 322                                                                                                | 278                                                                               | 284                                                                                                                                                                                                                                                         | 244                                                                               |
| 150                      | 358                                                                                                | 304                                                                               | 311                                                                                                                                                                                                                                                         | 273                                                                               |
| 185                      | 409                                                                                                | 349                                                                               | 349                                                                                                                                                                                                                                                         | 309                                                                               |
| 240                      | 480                                                                                                | 418                                                                               | 410                                                                                                                                                                                                                                                         | 362                                                                               |
| 300                      | 549                                                                                                | 484                                                                               | 468                                                                                                                                                                                                                                                         | 414                                                                               |
| 400                      | 622                                                                                                | -                                                                                 | 531                                                                                                                                                                                                                                                         | -                                                                                 |
| 500                      | 713                                                                                                | -                                                                                 | 606                                                                                                                                                                                                                                                         | -                                                                                 |

**Remark:** 1. For ambient temperature other than 40°C, correction factor given in Table 5-43 shall be applied.  
 2. For installation more than one circuit, correction factor given in Table 5-40 or 5-41 for single core and multi cores cable respectively shall be applied. .  
 3. The current rating are applicable to DC electrical system with a maximum voltage of 1.5 kV DC.

**Table 5-40:** Correction factor for current rating of single-core cable installed on cable tray for more than one circuit.

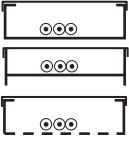
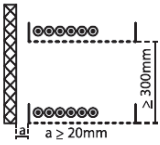
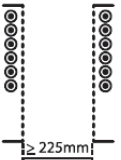
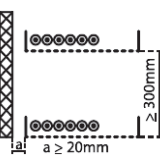
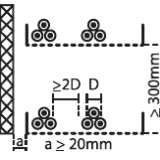
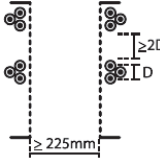
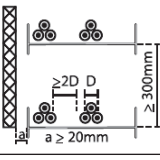
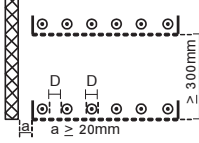
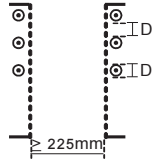
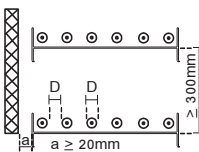
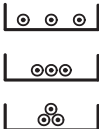
| Installation method                                              |                                                                                     | No. of trays or ladders | No. of circuits / tray or ladder |      |      |      |      |      | Method of wiring                                                               |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------|----------------------------------|------|------|------|------|------|--------------------------------------------------------------------------------|
|                                                                  |                                                                                     |                         | 1                                | 2    | 3    | 4    | 5-6  | 7-9  |                                                                                |
| Perforated or unperforated cable tray or cable ladder with cover |    | 1                       | See Table 5-40(a), Column 2      |      |      |      |      |      | Flat laying, touching, Trefoil                                                 |
| Perforated cable tray (Note 2)                                   |    | 1                       | 1.00                             | 0.91 | 0.87 | 0.82 | 0.78 | 0.77 | Flat laying, touching                                                          |
|                                                                  |                                                                                     | 2                       | 0.96                             | 0.87 | 0.81 | 0.78 | 0.74 | 0.69 |                                                                                |
|                                                                  |                                                                                     | 3                       | 0.95                             | 0.85 | 0.78 | 0.75 | 0.70 | 0.65 |                                                                                |
| Vertical perforated cable tray (Note 3)                          |    | 1                       | 1.00                             | 0.86 | 0.80 | 0.75 | 0.71 | 0.70 | Flat laying, vertical, touching                                                |
|                                                                  |                                                                                     | 2                       | 0.95                             | 0.84 | 0.77 | 0.72 | 0.67 | 0.66 |                                                                                |
| Cable ladder (Note 2)                                            |    | 1                       | 1.00                             | 0.97 | 0.96 | 0.94 | 0.93 | 0.92 | Flat laying, touching                                                          |
|                                                                  |                                                                                     | 2                       | 0.98                             | 0.93 | 0.89 | 0.88 | 0.86 | 0.83 |                                                                                |
|                                                                  |                                                                                     | 3                       | 0.97                             | 0.90 | 0.86 | 0.83 | 0.80 | 0.77 |                                                                                |
| Perforated cable tray (Note 2)                                   |   | 1                       | 1.00                             | 0.98 | 0.96 | 0.93 | 0.89 | -    | Trefoil laying, space between group ≥ 2 times of the overall diameter of cable |
|                                                                  |                                                                                     | 2                       | 0.97                             | 0.93 | 0.89 | 0.85 | 0.80 | -    |                                                                                |
|                                                                  |                                                                                     | 3                       | 0.96                             | 0.92 | 0.86 | 0.82 | 0.76 | -    |                                                                                |
| Vertical perforated cable tray (Note 3)                          |  | 1                       | 1.00                             | 0.91 | 0.89 | 0.88 | 0.87 | -    |                                                                                |
|                                                                  |                                                                                     | 2                       | 1.00                             | 0.90 | 0.86 | 0.85 | 0.83 | -    |                                                                                |
| Cable ladder (Note 2)                                            |  | 1                       | 1.00                             | 1.00 | 1.00 | 1.00 | 1.00 | -    |                                                                                |
|                                                                  |                                                                                     | 2                       | 0.97                             | 0.95 | 0.93 | 0.92 | 0.91 | -    |                                                                                |
|                                                                  |                                                                                     | 3                       | 0.96                             | 0.94 | 0.90 | 0.89 | 0.86 | -    |                                                                                |

**Table 5-40 (Continuous)**

| Installation method                     |                                                                                   | No. of trays or ladders | No. of circuits / tray or ladder |      |      |      |      |     | Method of wiring                                    |
|-----------------------------------------|-----------------------------------------------------------------------------------|-------------------------|----------------------------------|------|------|------|------|-----|-----------------------------------------------------|
|                                         |                                                                                   |                         | 1                                | 2    | 3    | 4    | 5-6  | 7-9 |                                                     |
| Perforated cable tray (Note 2)          |  | 1                       | 1.00                             | 0.93 | 0.90 | 0.87 | 0.83 | -   | Space between cable not less than diameter of cable |
|                                         |                                                                                   | 2                       | 0.97                             | 0.89 | 0.85 | 0.81 | 0.76 | -   |                                                     |
|                                         |                                                                                   | 3                       | 0.96                             | 0.88 | 0.82 | 0.78 | 0.72 | -   |                                                     |
| Vertical perforated cable tray (Note 3) |  | 1                       | 1.00                             | 0.91 | 0.89 | 0.88 | 0.87 | -   |                                                     |
|                                         |                                                                                   | 2                       | 0.94                             | 0.90 | 0.86 | 0.85 | 0.83 | -   |                                                     |
| Cable ladder (Note 2)                   |  | 1                       | 1.00                             | 0.97 | 0.96 | 0.96 | 0.96 | -   |                                                     |
|                                         |                                                                                   | 2                       | 0.97                             | 0.94 | 0.93 | 0.92 | 0.91 | -   |                                                     |
|                                         |                                                                                   | 3                       | 0.96                             | 0.93 | 0.92 | 0.91 | 0.88 | -   |                                                     |
| Unperforated cable tray without cover   |  | 1                       | See Table 5-40(a), Column 3      |      |      |      |      |     | Flat laying, touching                               |

**Remark:** 1. Correction factors are given for single layer of cable.

2. Correction factors are given for vertical spacing between trays of 300 mm and at least 20 mm between trays and wall.

3. Correction factors are given for horizontal spacing between trays of 225 mm with trays mounted back to back.

4. In case of more than one cable tray, correction factors shall be used from the cable tray which has highest number of cable circuits.

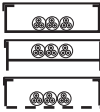
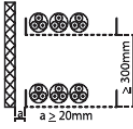
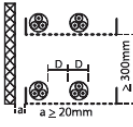
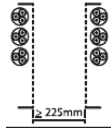
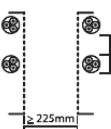
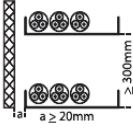
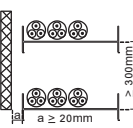
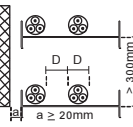
5. In case of one cable tray with more than 9 circuits, correction factor for 9 circuits shall be used.

**Table 5-40(a):** Correction factor for current rating of single-core cable installed on cable tray for more than one circuit.

| Column 1         | Column 2                                                    | Column 3                                                    |
|------------------|-------------------------------------------------------------|-------------------------------------------------------------|
| Group of circuit | Correction factor for cable tray or cable ladder with cover | Correction factor for unperforated cable tray without cover |
| 1                | 1.0                                                         | 1.0                                                         |
| 2                | 0.8                                                         | 0.85                                                        |
| 3                | 0.7                                                         | 0.79                                                        |
| 4                | 0.65                                                        | 0.75                                                        |
| 5                | 0.60                                                        | 0.73                                                        |
| 6                | 0.57                                                        | 0.72                                                        |
| 7                | 0.54                                                        | 0.72                                                        |
| 8                | 0.52                                                        | 0.71                                                        |
| 9                | 0.50                                                        | 0.70                                                        |
| 10-12            | 0.45                                                        | 0.70                                                        |
| 13-16            | 0.41                                                        | 0.70                                                        |
| 17-20            | 0.38                                                        | 0.70                                                        |

A

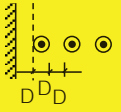
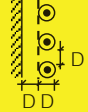
**Table 5-41:** Correction factor for current rating of single-core cable installed on cable tray for more than one circuit.

| Installation method                                              |                                                                                     | No. of trays or ladders | No. of circuits / tray or ladder |      |      |      |      |      |
|------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------|----------------------------------|------|------|------|------|------|
|                                                                  |                                                                                     |                         | 1                                | 2    | 3    | 4    | 5-6  | 7-9  |
| Perforated or Unperforated cable tray or cable ladder with cover |    | 1                       | See Table 5-40(a), Column 2      |      |      |      |      |      |
| Perforated cable tray (Note 2)                                   |    | 1                       | 1.00                             | 0.88 | 0.82 | 0.77 | 0.73 | 0.72 |
|                                                                  |                                                                                     | 2                       | 1.00                             | 0.87 | 0.80 | 0.77 | 0.73 | 0.68 |
|                                                                  |                                                                                     | 3                       | 1.00                             | 0.86 | 0.79 | 0.76 | 0.71 | 0.65 |
|                                                                  |                                                                                     | 4-6                     | 1.00                             | 0.84 | 0.77 | 0.73 | 0.68 | 0.64 |
|                                                                  |    | 1                       | 1.00                             | 1.00 | 0.98 | 0.95 | 0.91 | -    |
|                                                                  |                                                                                     | 2                       | 1.00                             | 0.99 | 0.96 | 0.92 | 0.87 | -    |
|                                                                  |                                                                                     | 3                       | 1.00                             | 0.98 | 0.95 | 0.91 | 0.85 | -    |
| Vertical perforated cable tray (Note 3)                          |    | 1                       | 1.00                             | 0.88 | 0.82 | 0.77 | 0.73 | 0.72 |
|                                                                  |                                                                                     | 2                       | 1.00                             | 0.88 | 0.81 | 0.76 | 0.71 | 0.70 |
|                                                                  |    | 1                       | 1.00                             | 0.91 | 0.89 | 0.88 | 0.87 | -    |
|                                                                  |                                                                                     | 2                       | 1.00                             | 0.91 | 0.88 | 0.87 | 0.85 | -    |
| Unperforated cable tray (Note 2)                                 |  | 1                       | 0.97                             | 0.84 | 0.78 | 0.75 | 0.71 | 0.68 |
|                                                                  |                                                                                     | 2                       | 0.97                             | 0.83 | 0.76 | 0.72 | 0.68 | 0.63 |
|                                                                  |                                                                                     | 3                       | 0.97                             | 0.82 | 0.75 | 0.71 | 0.66 | 0.61 |
|                                                                  |                                                                                     | 4-6                     | 0.97                             | 0.81 | 0.73 | 0.69 | 0.63 | 0.58 |
| Cable ladder (Note 2)                                            |  | 1                       | 1.00                             | 0.87 | 0.82 | 0.80 | 0.79 | 0.78 |
|                                                                  |                                                                                     | 2                       | 1.00                             | 0.86 | 0.80 | 0.78 | 0.76 | 0.73 |
|                                                                  |                                                                                     | 3                       | 1.00                             | 0.85 | 0.79 | 0.76 | 0.73 | 0.70 |
|                                                                  |                                                                                     | 4-6                     | 1.00                             | 0.84 | 0.77 | 0.73 | 0.68 | 0.64 |
|                                                                  |  | 1                       | 1.00                             | 1.00 | 1.00 | 1.00 | 1.00 | -    |
|                                                                  |                                                                                     | 2                       | 1.00                             | 0.99 | 0.98 | 0.97 | 0.96 | -    |
|                                                                  |                                                                                     | 3                       | 1.00                             | 0.98 | 0.97 | 0.96 | 0.93 | -    |

**Remark (Table 5-41)**

1. Correction factors are given for single layer of cable.
2. Correction factors are given for vertical spacing between trays of 300 mm and at least 20 mm between trays and wall.
3. Correction factors are given for horizontal spacing between trays of 225 mm with trays mounted back to back.
4. In case of more than one cable tray, correction factors shall be used from the cable tray which has highest number of cable circuits.
5. In case of one cable tray with more than 9 circuits, correction factor for 9 circuits shall be used.

**Table 5-42:** Current rating for aluminium conductor, PVC insulated TIS 293-2541 for  $U_0/U \leq 450/750V$ , conductor temperature  $70^\circ C$ , ambient temperature  $40^\circ C$ , installed on insulator in air.

| Installation Method     |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Size (mm <sup>2</sup> ) | Current rating (A)                                                                |                                                                                   |
| 25                      | 97                                                                                | 86                                                                                |
| 35                      | 121                                                                               | 108                                                                               |
| 50                      | 147                                                                               | 132                                                                               |
| 70                      | 189                                                                               | 171                                                                               |
| 95                      | 231                                                                               | 210                                                                               |
| 120                     | 268                                                                               | 245                                                                               |
| 150                     | 310                                                                               | 284                                                                               |
| 185                     | 354                                                                               | 327                                                                               |
| 240                     | 419                                                                               | 389                                                                               |
| 300                     | 485                                                                               | 452                                                                               |
| 400                     | 584                                                                               | 547                                                                               |
| 500                     | 674                                                                               | 635                                                                               |

**Remark:** Where the ambient temperature is other than  $40^\circ C$ , the correction factor given in Table 5-43

**Table 5-43:** Correction factor for ambient temperature other than 40°C to be applied to the current-carrying capacities for cable in air.

| Ambient Temperature (°C) | Insulation |      |             |      |       |
|--------------------------|------------|------|-------------|------|-------|
|                          | PVC        |      | XLPE or EPR | MI   |       |
|                          | 70°C       | 90°C | 90°C        | 70°C | 105°C |
| 11-15                    | 1.34       | -    | 1.23        | 1.41 | 1.21  |
| 16-20                    | 1.29       | -    | 1.19        | 1.34 | 1.16  |
| 21-25                    | 1.22       | -    | 1.14        | 1.26 | 1.13  |
| 26-30                    | 1.15       | -    | 1.10        | 1.18 | 1.09  |
| 31-35                    | 1.08       | 1.00 | 1.05        | 1.09 | 1.04  |
| 36-40                    | 1.00       | 1.00 | 1.00        | 1.00 | 1.00  |
| 41-45                    | 0.91       | 1.00 | 0.96        | 0.91 | 0.96  |
| 46-50                    | 0.82       | 1.00 | 0.90        | 0.79 | 0.91  |
| 51-55                    | 0.70       | 0.96 | 0.84        | 0.67 | 0.87  |
| 56-60                    | 0.57       | 0.83 | 0.78        | 0.53 | 0.82  |
| 61-65                    | -          | 0.67 | 0.71        | -    | 0.76  |
| 66-70                    | -          | 0.47 | 0.64        | -    | 0.70  |
| 71-75                    | -          | -    | 0.55        | -    | 0.65  |
| 76-80                    | -          | -    | 0.45        | -    | 0.59  |
| 81-85                    | -          | -    | -           | -    | 0.51  |
| 86-90                    | -          | -    | -           | -    | 0.43  |
| 91-95                    | -          | -    | -           | -    | 0.35  |

**Table 5-44:** Correction factor for ambient air temperatures other than 30°C to be applied to current-carrying capacities for cables in the ground.

| Ambient Temperature (°C) | Insulation |             |
|--------------------------|------------|-------------|
|                          | PVC        | XLPE or EPR |
| 11-15                    | 1.18       | 1.12        |
| 16-20                    | 1.12       | 1.08        |
| 21-25                    | 1.07       | 1.03        |
| 26-30                    | 1.00       | 1.00        |
| 31-35                    | 0.94       | 0.96        |
| 36-40                    | 0.87       | 0.91        |
| 41-45                    | 0.80       | 0.86        |
| 46-50                    | 0.71       | 0.82        |
| 51-55                    | 0.62       | 0.76        |
| 56-60                    | 0.51       | 0.70        |
| 61-65                    | -          | 0.65        |
| 66-70                    | -          | 0.57        |
| 71-75                    | -          | 0.49        |
| 76-80                    | -          | 0.41        |

**Table 5-45:** Correction factor for more than one circuit, single-core or multi-cores cable  $U_0/U \leq 0.6/1\text{kV}$ , Cables laid directly in ground

| No. of circuit | Cable-to-cable clearance (mm) |                    |      |      |      |
|----------------|-------------------------------|--------------------|------|------|------|
|                | Touching                      | One cable diameter | 125  | 250  | 500  |
| 2              | 0.75                          | 0.80               | 0.85 | 0.90 | 0.90 |
| 3              | 0.65                          | 0.70               | 0.75 | 0.80 | 0.85 |
| 4              | 0.60                          | 0.60               | 0.70 | 0.75 | 0.80 |
| 5              | 0.55                          | 0.55               | 0.65 | 0.70 | 0.80 |
| 6              | 0.50                          | 0.55               | 0.60 | 0.70 | 0.80 |

A

**Table 5-46:** Correction factor for more than one circuit, single-core or multi-cores cable  $U_0/U \leq 0.6/1\text{kV}$ , Cables in duct in ground

| No. of circuit | Duct-to-duct clearance (mm.) |      |      |       |
|----------------|------------------------------|------|------|-------|
|                | Touching                     | 250  | 500  | 1,000 |
| 2              | 0.85                         | 0.90 | 0.95 | 0.95  |
| 3              | 0.75                         | 0.85 | 0.90 | 0.95  |
| 4              | 0.70                         | 0.80 | 0.85 | 0.90  |
| 5              | 0.65                         | 0.80 | 0.85 | 0.90  |
| 6              | 0.60                         | 0.80 | 0.80 | 0.90  |

**Table 5-47:** Schedule of reference method of installation which form the basis of the tabulated current-carrying capacities

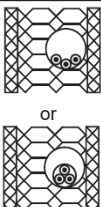
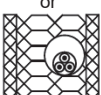
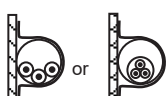
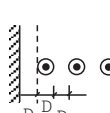
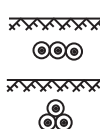
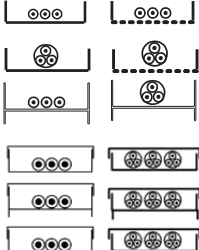
| Method of Wiring                                                                                                                                       | Method of Installation                                                                                                                                                                               | Group of Installation | Note                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------------------------------------------------------------------------------------------|
| Single-core or multi-cores insulated cable with/without sheathed installed in metallic or non-metallic raceway in a thermal insulated wall or ceiling. |  or<br>                            | Group 1               | Ceiling or thermal insulated wall has a thermal conductance not less than $10 \text{ W/m}^2\cdot\text{K}$ |
| Single-core or multi-cores insulated cable with/without sheathed installed in metallic or non-metallic raceway on wall or ceiling in concrete wall.    |  or<br>                            | Group 2               | Ceiling or concrete wall have thermal resistivity not more than $2 \text{ K}\cdot\text{m/W}$              |
| Single-core or multi-cores insulated cable with/without sheathed on wall and no enclosure.                                                             |  or<br>                            | Group 3               | -                                                                                                         |
| Single-core or multi-cores insulated cable with/without sheathed installed in air on insulators with space.                                            |  D<br>D<br>D<br>or<br> D<br>D<br>D | Group 4               | Spacing between cable and cable, wall and cable not less than diameter of cable.                          |
| Single-core or multi-cores insulated cable with/without sheathed installed underground in metallic or non-metallic conduit.                            |  or<br>                        | Group 5               | -                                                                                                         |
| Single-core or multi-cores insulated cable with/without sheathed installed directly underground.                                                       |  or<br>                        | Group 6               | -                                                                                                         |

**Table 5-47: (Continuous)**

| Methods of Wiring                                                                                                             | Methods of Installation                                                           | Group of Installation | Note                                                                                                   |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------|
| Single-core or multi-cores insulated cable with sheathed installed on perforated or unperforated cable trays or cable ladder. |  | Group 7               | Perforated tray shall have the perforation of not less than 30% of the total surface area of the tray. |

**A**
**Table 5-48: Requirement for installation copper conductor, PVC insulated cable according to TIS 11-2553 and TIS 11 Part 101-2559**

| Cable Name   | Size (mm <sup>2</sup> ) | Type of conductor | No. of core | Temp. of conductor | Sheath | Rated voltage U <sub>0</sub> /U(V) | Application                                                                                                                                                    |
|--------------|-------------------------|-------------------|-------------|--------------------|--------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 60227 IEC 01 | 1.5-400                 | Solid or Stranded | Single core | 70°C               | -      | 450/750                            | <ul style="list-style-type: none"> <li>• Installation exposed</li> <li>• Installation in raceway</li> <li>• Don't allow for underground installing</li> </ul>  |
| 60227 IEC 02 | 1.5-240                 | Flexible          | Single core | 70°C               | -      | 450/750                            | <ul style="list-style-type: none"> <li>• Installation exposed</li> <li>• Installation in raceway</li> <li>• Don't allow for underground installing</li> </ul>  |
| 60227 IEC 05 | 0.5-1                   | Solid             | Single core | 70°C               | -      | 300/500                            | <ul style="list-style-type: none"> <li>• Installation exposed</li> <li>• Installation in raceway</li> <li>• Don't allow for underground installing</li> </ul>  |
| 60227 IEC 06 | 0.5-1                   | Flexible          | Single core | 70°C               | -      | 300/500                            | <ul style="list-style-type: none"> <li>• Installation exposed</li> <li>• Installation in raceway</li> <li>• Don't allow for underground installing</li> </ul>  |
| 60227 IEC 07 | 0.5-2.5                 | Solid             | Single core | 90°C               | -      | 300/500                            | <ul style="list-style-type: none"> <li>• Installation exposed</li> <li>• Installation in raceway</li> <li>• Don't allow for underground installing</li> </ul>  |
| 60227 IEC 08 | 0.5-2.5                 | Flexible          | Single core | 90°C               | -      | 300/500                            | <ul style="list-style-type: none"> <li>• Installation exposed.</li> <li>• Installation in raceway</li> <li>• Don't allow for underground installing</li> </ul> |

**Table 5-48 (Continuous)**

| Cable Name       | Size (mm <sup>2</sup> ) | Type of conductor | No. of core                                      | Temp. of conductor | Sheath | Rated voltage U <sub>0</sub> /U(V) | Application                                                                                                                                                                                             |
|------------------|-------------------------|-------------------|--------------------------------------------------|--------------------|--------|------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 60227 IEC 10     | 1.5-35                  | Solid or Stranded | Multi cores (with/without ground)                | 70°C               | -      | 300/500                            | <ul style="list-style-type: none"> <li>• Installation exposed</li> <li>• Installation on cable tray</li> <li>• Don't allow for underground installing</li> </ul>                                        |
| 60227 IEC 52     | 0.5-0.75                | Flexible          | Multi cores (with/without ground)                | 70°C               | -      | 300/300                            | For mobile-electrical equipment, electrical appliances                                                                                                                                                  |
| 60227 IEC 53     | 0.75-2.5                | Flexible          | Multi cores (with/without ground)                | 70°C               | o      | 300/500                            | For mobile-electrical equipment, electrical appliances                                                                                                                                                  |
| 60227 IEC 56     | 0.5-0.75                | Flexible          | Multi cores (with/without ground)                | 90°C               | o      | 300/300                            | For mobile-electrical equipment, electrical appliances                                                                                                                                                  |
| 60227 IEC 57     | 0.75-2.5                | Flexible          | Multi cores (with/without ground)                | 90°C               | o      | 300/500                            | For mobile-electrical equipment, electrical appliances                                                                                                                                                  |
| NYY<br><br>NYY-G | 1-500                   | Solid or Stranded | Single core                                      | 70°C               | o      | 450/750                            | <ul style="list-style-type: none"> <li>• Installation exposed</li> <li>• Installation in raceway</li> <li>• Can use allow for underground installing</li> </ul>                                         |
|                  | 1-300                   |                   | Multi cores                                      |                    |        |                                    |                                                                                                                                                                                                         |
|                  | 1-300                   |                   | Multi cores (with/without ground)                |                    |        |                                    |                                                                                                                                                                                                         |
| VAF<br>VAF-G     | 1-16                    | Solid or Stranded | 2 cores<br>2 cores with ground                   | 70°C               | o      | 300/500                            | <ul style="list-style-type: none"> <li>• Installation on a wall</li> <li>• Installation in raceway</li> <li>• Don't allow for underground installing</li> </ul>                                         |
| VCT<br>VCT-G     | 1-35                    | Flexible          | Single core<br>Multi cores (with/without ground) | 70°C               | o      | 450/750                            | <ul style="list-style-type: none"> <li>• Installation exposed</li> <li>• For electrical appliances</li> <li>• Installation on cable tray</li> <li>• Can use allow for underground installing</li> </ul> |

## Voltage Drop for Single-core and Multi-cores cable

**Table 31:** Single-core 70°C, Copper conductor, PVC insulated cable

| Size<br><br>(mm²) | Single-phase, AC (mV/A/m) |            |        | Three-phase, AC (mV/A/m) |            |      |        |
|-------------------|---------------------------|------------|--------|--------------------------|------------|------|--------|
|                   | Installation method       |            |        |                          |            |      |        |
|                   | Group 1, 2                | Group 3, 7 |        | Group 1, 2               | Group 3, 7 |      |        |
|                   |                           | Touching   | Spaced |                          | Trefoil    | Flat | Spaced |
| 1.0               | 44                        | 44         | 44     | 38                       | 38         | 38   | 38     |
| 1.5               | 29                        | 29         | 29     | 25                       | 25         | 25   | 25     |
| 2.5               | 18                        | 18         | 18     | 15                       | 15         | 15   | 15     |
| 4                 | 11                        | 11         | 11     | 9.5                      | 9.5        | 9.5  | 9.5    |
| 6                 | 7.3                       | 7.3        | 7.3    | 6.4                      | 6.4        | 6.4  | 6.4    |
| 10                | 4.4                       | 4.4        | 4.4    | 3.8                      | 3.8        | 3.8  | 3.8    |
| 16                | 2.8                       | 2.8        | 2.8    | 2.4                      | 2.4        | 2.4  | 2.4    |
| 25                | 1.81                      | 1.75       | 1.75   | 1.52                     | 1.50       | 1.50 | 1.52   |
| 35                | 1.33                      | 1.25       | 1.27   | 1.13                     | 1.11       | 1.12 | 1.15   |
| 50                | 1.00                      | 0.94       | 0.97   | 0.85                     | 0.81       | 0.84 | 0.86   |
| 70                | 0.71                      | 0.66       | 0.69   | 0.61                     | 0.57       | 0.60 | 0.63   |
| 95                | 0.56                      | 0.50       | 0.54   | 0.48                     | 0.44       | 0.47 | 0.50   |
| 120               | 0.48                      | 0.41       | 0.45   | 0.40                     | 0.35       | 0.39 | 0.43   |
| 150               | 0.41                      | 0.35       | 0.39   | 0.35                     | 0.30       | 0.34 | 0.38   |
| 185               | 0.36                      | 0.29       | 0.34   | 0.31                     | 0.26       | 0.30 | 0.34   |
| 240               | 0.30                      | 0.25       | 0.29   | 0.27                     | 0.21       | 0.25 | 0.29   |
| 300               | 0.27                      | 0.22       | 0.26   | 0.24                     | 0.18       | 0.23 | 0.26   |
| 400               | 0.25                      | 0.19       | 0.23   | 0.22                     | 0.16       | 0.20 | 0.24   |
| 500               | 0.23                      | 0.17       | 0.21   | 0.20                     | 0.15       | 0.18 | 0.22   |

Refer EIT Standard 022001-22

**Table 2:** Multi-cores 70°C, Copper conductor, PVC insulated cable

| Size<br>(mm <sup>2</sup> ) | Single-phase | Three-phase |
|----------------------------|--------------|-------------|
|                            | AC (mV/A/m)  | AC (mV/A/m) |
| 1.0                        | 44           | 38          |
| 1.5                        | 29           | 25          |
| 2.5                        | 18           | 15          |
| 4                          | 11           | 9.5         |
| 6                          | 7.3          | 6.4         |
| 10                         | 4.4          | 3.8         |
| 16                         | 2.8          | 2.4         |
| 25                         | 1.75         | 1.50        |
| 35                         | 1.25         | 1.10        |
| 50                         | 0.93         | 0.80        |
| 70                         | 0.65         | 0.57        |
| 95                         | 0.49         | 0.43        |
| 120                        | 0.41         | 0.36        |
| 150                        | 0.34         | 0.29        |
| 185                        | 0.29         | 0.25        |
| 240                        | 0.24         | 0.21        |
| 300                        | 0.21         | 0.18        |
| 400                        | 0.17         | 0.15        |

Refer EIT Standard 022001-22

**Table 3:** Single-core 90°C, Copper conductor, XLPE insulation cable

| Size<br><br>(mm²) | Single-phase, AC (mV/A/m) |            |        | Three-phase, AC (mV/A/m) |            |      |        |
|-------------------|---------------------------|------------|--------|--------------------------|------------|------|--------|
|                   | Installation method       |            |        |                          |            |      |        |
|                   | Group 1, 2                | Group 3, 7 |        | Group 1, 2               | Group 3, 7 |      |        |
|                   |                           | Touching   | Spaced |                          | Trefoil    | Flat | Spaced |
| 1.0               | 46                        | 46         | 46     | 40                       | 40         | 40   | 40     |
| 1.5               | 31                        | 31         | 31     | 27                       | 27         | 27   | 27     |
| 2.5               | 19                        | 19         | 19     | 16                       | 16         | 16   | 16     |
| 4                 | 12                        | 12         | 12     | 10                       | 10         | 10   | 10     |
| 6                 | 7.9                       | 7.9        | 7.9    | 6.8                      | 6.8        | 6.8  | 6.8    |
| 10                | 4.7                       | 4.7        | 4.7    | 4.0                      | 4.0        | 4.0  | 4.0    |
| 16                | 2.9                       | 2.9        | 2.9    | 2.5                      | 2.5        | 2.5  | 2.5    |
| 25                | 1.85                      | 1.85       | 1.85   | 1.60                     | 1.57       | 1.58 | 1.60   |
| 35                | 1.37                      | 1.35       | 1.37   | 1.17                     | 1.14       | 1.15 | 1.17   |
| 50                | 1.04                      | 1.00       | 1.02   | 0.91                     | 0.87       | 0.87 | 0.90   |
| 70                | 0.75                      | 0.70       | 0.73   | 0.65                     | 0.61       | 0.62 | 0.64   |
| 95                | 0.58                      | 0.52       | 0.56   | 0.50                     | 0.45       | 0.46 | 0.50   |
| 120               | 0.49                      | 0.42       | 0.47   | 0.42                     | 0.37       | 0.38 | 0.42   |
| 150               | 0.42                      | 0.36       | 0.40   | 0.37                     | 0.31       | 0.33 | 0.37   |
| 185               | 0.37                      | 0.31       | 0.35   | 0.32                     | 0.26       | 0.27 | 0.31   |
| 240               | 0.32                      | 0.25       | 0.30   | 0.27                     | 0.22       | 0.23 | 0.27   |
| 300               | 0.28                      | 0.22       | 0.26   | 0.24                     | 0.19       | 0.20 | 0.24   |
| 400               | 0.25                      | 0.19       | 0.23   | 0.22                     | 0.17       | 0.18 | 0.22   |
| 500               | 0.23                      | 0.17       | 0.21   | 0.20                     | 0.15       | 0.16 | 0.20   |

Refer EIT Standard 022001-22

**Table 54:** Multi-cores 90°C, Copper conductor, XLPE insulation cable

| Size<br>(mm <sup>2</sup> ) | Single-phase | Three-phase |
|----------------------------|--------------|-------------|
|                            | AC (mV/A/m)  | AC (mV/A/m) |
| 1.0                        | 46           | 40          |
| 1.5                        | 31           | 27          |
| 2.5                        | 19           | 16          |
| 4                          | 12           | 10          |
| 6                          | 7.9          | 6.8         |
| 10                         | 4.7          | 4.0         |
| 16                         | 2.9          | 2.5         |
| 25                         | 1.85         | 1.60        |
| 35                         | 1.35         | 1.15        |
| 50                         | 0.99         | 0.86        |
| 70                         | 0.68         | 0.60        |
| 95                         | 0.52         | 0.44        |
| 120                        | 0.42         | 0.36        |
| 150                        | 0.35         | 0.31        |
| 185                        | 0.30         | 0.25        |
| 240                        | 0.24         | 0.22        |
| 300                        | 0.21         | 0.18        |
| 400                        | 0.19         | 0.16        |

Refer EIT Standard 022001-22

## Copper Conductor Cables

### Building Wires and Cables

TIS 11 Part 3-2553 : Non-Sheathed Cables for Fixed Wiring

|                                            |                                                                          |    |
|--------------------------------------------|--------------------------------------------------------------------------|----|
| 60227 IEC 01 THW or<br>YK 60227 IEC 01 THW | 450/750V 70°C SOLID AND STRANDED CONDUCTOR PVC<br>INSULATED, SINGLE CORE | B1 |
| 60227 IEC 02 THW (f)                       | 450/750V 70°C FLEXIBLE CONDUCTOR PVC INSULATED,<br>SINGLE CORE           | B3 |
| 60227 IEC 05 IV                            | 300/500 V 70°C SOLID CONDUCTOR PVC INSULATED,<br>SINGLE CORE             | B4 |
| 60227 IEC 06 IV (f)                        | 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED,<br>SINGLE CORE          | B5 |
| 60227 IEC 07 HIV                           | 300/500 V 90°C SOLID CONDUCTOR PVC INSULATED,<br>SINGLE CORE             | B6 |
| 60227 IEC 08 HIV (f)                       | 300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED,<br>SINGLE CORE          | B7 |

### TIS 11 Part 4-2553: Sheathed Cables for Fixed Wiring

|              |                                                                                  |    |
|--------------|----------------------------------------------------------------------------------|----|
| 60227 IEC 10 | 300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC<br>INSULATED AND DOUBLE SHEATHED | B8 |
|--------------|----------------------------------------------------------------------------------|----|

**B**

## TIS 11 Part 5-2553 Flexible Cables (Cords)

|                   |                                                                        |     |
|-------------------|------------------------------------------------------------------------|-----|
| 60227 IEC 52 VKF  | 300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE  | B18 |
| 60227 IEC 52      | 300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B19 |
| 60227 IEC 53 VKF  | 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE  | B21 |
| 60227 IEC 53      | 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B22 |
| 60227 IEC 56 HVKF | 300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE  | B24 |
| 60227 IEC 56      | 300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B25 |
| 60227 IEC 57 HVKF | 300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE  | B26 |
| 60227 IEC 57      | 300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B27 |

## B TIS 11 Part 101-2559: Sheathed Cables for General Purposes

|               |                                                                                             |     |
|---------------|---------------------------------------------------------------------------------------------|-----|
| VAF           | 300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE             | B28 |
| VAF-G         | 300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, FLAT TYPE | B29 |
| YYY or YK YYY | 450/750 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED               | B30 |
| YYY-G         | 450/750 V 70°C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND               | B38 |
| VCT           | 450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE                      | B44 |
| VCT-G         | 450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE          | B47 |

## Low Voltage Power Cables

|                                   |                                                                                                                                |     |
|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------|-----|
| NY-Y-SWA                          | 450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE                               | B50 |
| NYCY                              | 450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH CONCENTRIC CONDUCTORS POWER CABLE                                       | B56 |
| FD-0.6/1KV-CV or YK FD-0.6/1KV-CV | 0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT POWER CABLE                                     | B58 |
| FD-0.6/1KV-CV-AWA                 | 0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH ALUMINIUM WIRE ARMORED FLAME RETARDANT POWER CABLE        | B66 |
| FD-0.6/1KV-CV-SWA                 | 0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE | B68 |
| FD-0.6/1KV-CV-STA                 | 0.6/1 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED STEEL TAPE ARMOUR FLAME RETARDANT POWER CABLE                   | B71 |

**B**

## Medium Voltage Power Cables

|             |                                                                                  |     |
|-------------|----------------------------------------------------------------------------------|-----|
| 1.8/3KV-CV  | 1.8/3(3.6)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE   | B74 |
| 3.6/6KV-CV  | 3.6/6(7.2)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE   | B77 |
| 6/10KV-CV   | 6/10(12)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE     | B80 |
| 8.7/15KV-CV | 8.7/15(17.5)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE | B83 |
| 12/20KV-CV  | 12/20(24)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE    | B86 |
| 18/30KV-CV  | 18/30(36)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED POWER CABLE    | B89 |

B

## High Voltage Power Cables

|              |                                                                                                              |     |
|--------------|--------------------------------------------------------------------------------------------------------------|-----|
| 69KV-CE-CWS  | 69kV 90°C CROSS-LINKED POLYETHYLENE INSULATED WITH COPPER WIRE SCREEN AND POLYETHYLENE SHEATHED POWER CABLE  | B92 |
| 115KV-CE-CWS | 115kV 90°C CROSS-LINKED POLYETHYLENE INSULATED WITH COPPER WIRE SCREEN AND POLYETHYLENE SHEATHED POWER CABLE | B93 |

## Control Cables

|       |                                                                                    |     |
|-------|------------------------------------------------------------------------------------|-----|
| CVV   | 600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, AND SHEATHED CABLE                    | B94 |
| CVV-S | 600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELDED CONTROL CABLE | B94 |

## Automobile Wire and Cables

|      |                                                                  |      |
|------|------------------------------------------------------------------|------|
| T-AV | 60°C LOW VOLTAGE FLEXIBLE CONDUCTOR PVC INSULATED FOR AUTOMOBILE | B102 |
|------|------------------------------------------------------------------|------|

## Bare Conductor

|     |                                      |      |
|-----|--------------------------------------|------|
| FHC | HARD DRAWN COPPER STRANDED CONDUCTOR | B103 |
|-----|--------------------------------------|------|

|     |                                    |      |
|-----|------------------------------------|------|
| FAC | ANNEALED COPPER STRANDED CONDUCTOR | B104 |
|-----|------------------------------------|------|

**B**



# 60227 IEC 01 THW or YK 60227 IEC 01 THW



450/750V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED, SINGLE CORE



TIS 11 Part 3-2553

## CABLE STRUCTURE

**Conductor** : Solid or stranded annealed copper wire  
**Insulation** : Polyvinyl chloride (PVC/C)  
**Core identification** : Black  
 (Other colors available upon request)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 70°C  
 : Circuit voltage not exceeding 450/750 Volts  
**Rated voltage** : 450 Volts between Line to Earth  
 : 750 Volts between Line to Line  
**AC Testing voltage** : 2,500 volts  
**Reference standard** : TIS 11 Part 3-2553 Table 1

## APPLICATION

Building wiring for installation on insulator or in raceway dry location.

| Cable name          | Nominal cross sectional area | Conductor type | Insulation thickness nominal | Overall diameter average |         | Conductor resistance at 20°C maximum | Insulation resistance at 70°C minimum | Continuous current rating                                                                                  |                                                                                                   |                                                                                                  | Cable weight approx. | Standard Length |
|---------------------|------------------------------|----------------|------------------------------|--------------------------|---------|--------------------------------------|---------------------------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------|-----------------|
|                     |                              |                |                              | minimum                  | maximum |                                      |                                       | In free air at (40°C)<br> | In Conduit in air at 40°C                                                                         |                                                                                                  |                      |                 |
|                     |                              |                |                              |                          |         |                                      |                                       |                                                                                                            | Single-phase<br> | Three-phase<br> |                      |                 |
|                     | (mm²)                        |                | (mm)                         | (mm)                     | (mm)    | (Ω/km)                               | (MΩ-km)                               | (A)                                                                                                        |                                                                                                   |                                                                                                  | (kg/km)              | (m)             |
| 60227 IEC 01 THW    | 1.5                          | Solid          | 0.7                          | 2.6                      | 3.2     | 12.1                                 | 0.011                                 | 21                                                                                                         | 15                                                                                                | 13                                                                                               | 20                   | 100/C           |
|                     | 1.5                          | Non-compacted  | 0.7                          | 2.7                      | 3.3     | 12.1                                 | 0.010                                 | 21                                                                                                         | 15                                                                                                | 13                                                                                               | 25                   | 100/C           |
|                     | 2.5                          | Solid          | 0.8                          | 3.2                      | 3.9     | 7.41                                 | 0.010                                 | 28                                                                                                         | 21                                                                                                | 18                                                                                               | 35                   | 100/C           |
|                     | 2.5                          | Non-compacted  | 0.8                          | 3.3                      | 4.0     | 7.41                                 | 0.009                                 | 28                                                                                                         | 21                                                                                                | 18                                                                                               | 35                   | 100/C           |
|                     | 4                            | Solid          | 0.8                          | 3.6                      | 4.4     | 4.61                                 | 0.0085                                | 37                                                                                                         | 28                                                                                                | 24                                                                                               | 50                   | 100/C           |
|                     | 4                            | Non-compacted  | 0.8                          | 3.8                      | 4.6     | 4.61                                 | 0.0077                                | 37                                                                                                         | 28                                                                                                | 24                                                                                               | 55                   | 100/C           |
| YK 60227 IEC 01 THW | 6                            | Non-compacted  | 0.8                          | 4.3                      | 5.2     | 3.08                                 | 0.0065                                | 49                                                                                                         | 36                                                                                                | 31                                                                                               | 70                   | 100/C           |
|                     | 10                           | Non-compacted  | 1.0                          | 5.6                      | 6.7     | 1.83                                 | 0.0065                                | 68                                                                                                         | 50                                                                                                | 44                                                                                               | 120                  | 100/C           |
|                     | 16                           | Compacted      | 1.0                          | 6.4                      | 7.8     | 1.15                                 | 0.0050                                | 91                                                                                                         | 66                                                                                                | 59                                                                                               | 170                  | 100/C           |
|                     | 25                           | Compacted      | 1.2                          | 8.1                      | 9.7     | 0.727                                | 0.0050                                | 122                                                                                                        | 88                                                                                                | 77                                                                                               | 270                  | 100/C           |
|                     | 35                           | Compacted      | 1.2                          | 9.0                      | 10.9    | 0.524                                | 0.0043                                | 151                                                                                                        | 109                                                                                               | 96                                                                                               | 360                  | 100/C           |
|                     | 50                           | Compacted      | 1.4                          | 10.6                     | 12.8    | 0.387                                | 0.0043                                | 184                                                                                                        | 131                                                                                               | 117                                                                                              | 490                  | 1000/D          |
|                     | 70                           | Compacted      | 1.4                          | 12.1                     | 14.6    | 0.268                                | 0.0035                                | 234                                                                                                        | 167                                                                                               | 149                                                                                              | 670                  | 1000/D          |
|                     | 95                           | Compacted      | 1.6                          | 14.1                     | 17.1    | 0.193                                | 0.0035                                | 292                                                                                                        | 202                                                                                               | 180                                                                                              | 930                  | 1000/D          |
|                     | 120                          | Compacted      | 1.6                          | 15.6                     | 18.8    | 0.153                                | 0.0032                                | 341                                                                                                        | 234                                                                                               | 208                                                                                              | 1150                 | 1000/D          |
|                     | 150                          | Compacted      | 1.8                          | 17.3                     | 20.9    | 0.124                                | 0.0032                                | 391                                                                                                        | 261                                                                                               | 228                                                                                              | 1420                 | 1000/D          |
|                     | 185                          | Compacted      | 2.0                          | 19.3                     | 23.3    | 0.0991                               | 0.0032                                | 454                                                                                                        | 297                                                                                               | 258                                                                                              | 1780                 | 1000/D          |
|                     | 240                          | Compacted      | 2.2                          | 22.0                     | 26.6    | 0.0754                               | 0.0032                                | 543                                                                                                        | 348                                                                                               | 301                                                                                              | 2300                 | 1000/D          |
| 60227 IEC 01 THW    | 300                          | Non-compacted  | 2.4                          | 24.5                     | 29.6    | 0.0601                               | 0.0030                                | 628                                                                                                        | 398                                                                                               | 343                                                                                              | 3090                 | 500/D           |
|                     | 400                          | Non-compacted  | 2.6                          | 27.5                     | 33.2    | 0.047                                | 0.0028                                | 736                                                                                                        | 475                                                                                               | 406                                                                                              | 3930                 | 500/D           |

C = Packing in Coil  
 D = Packing in drum

## 60227 IEC 01 THW or YK 60227 IEC 01 THW

450/750V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED, SINGLE CORE



 TIS 11 Part 3-2553

### CABLE STRUCTURE

**Conductor** : Solid or stranded annealed copper wire

**Insulation** : Polyvinyl chloride (PVC/C)

**Core identification** : Black  
(Other colors available upon request)

### TECHNICAL DATA

**Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 450/750 Volts

**Rated voltage** : 450 Volts between Line to Earth  
: 750 Volts between Line to Line

**AC Testing voltage** : 2,500 volts

**Reference standard** : TIS 11 Part 3-2553 Table 1

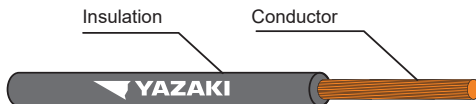
### APPLICATION

Building wiring for installation on insulator or in raceway dry location.

| Cable name          | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | A.C Resistance | Inductance   | Reactance    | Impedance   |
|---------------------|----------------------------------------------------|----------------|----------------|--------------|--------------|-------------|
|                     |                                                    |                | R<br>(Ω/km)    | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 60227 IEC 01 THW    | 1.5                                                | Solid          | 14.4777        | 0.5259       | 0.1652       | 14.4786     |
|                     | 1.5                                                | Non-compacted  | 14.4777        | 0.5276       | 0.1658       | 14.4786     |
|                     | 2.5                                                | Solid          | 8.8661         | 0.5121       | 0.1609       | 8.8676      |
|                     | 2.5                                                | Non-compacted  | 8.8661         | 0.5202       | 0.1634       | 8.8676      |
|                     | 4                                                  | Solid          | 5.5159         | 0.4917       | 0.1545       | 5.5181      |
|                     | 4                                                  | Non-compacted  | 5.5159         | 0.4870       | 0.1530       | 5.5180      |
| YK 60227 IEC 01 THW | 6                                                  | Non-compacted  | 3.6852         | 0.5606       | 0.1761       | 3.6894      |
|                     | 10                                                 | Non-compacted  | 2.1896         | 0.5219       | 0.1640       | 2.1957      |
|                     | 16                                                 | Compacted      | 1.3776         | 0.4642       | 0.1458       | 1.3853      |
|                     | 25                                                 | Compacted      | 0.8700         | 0.4594       | 0.1443       | 0.8819      |
|                     | 35                                                 | Compacted      | 0.6271         | 0.4496       | 0.1412       | 0.6428      |
|                     | 50                                                 | Compacted      | 0.4633         | 0.4477       | 0.1406       | 0.4842      |
|                     | 70                                                 | Compacted      | 0.3210         | 0.4354       | 0.1368       | 0.3489      |
|                     | 95                                                 | Compacted      | 0.2314         | 0.4347       | 0.1366       | 0.2687      |
|                     | 120                                                | Compacted      | 0.1836         | 0.4295       | 0.1349       | 0.2278      |
|                     | 150                                                | Compacted      | 0.1491         | 0.4292       | 0.1348       | 0.2010      |
|                     | 185                                                | Compacted      | 0.1194         | 0.4281       | 0.1345       | 0.1798      |
| 60227 IEC 01 THW    | 240                                                | Compacted      | 0.0914         | 0.4257       | 0.1337       | 0.1620      |
|                     | 300                                                | Non-compacted  | 0.0734         | 0.4177       | 0.1312       | 0.1504      |
|                     | 400                                                | Non-compacted  | 0.0581         | 0.4160       | 0.1307       | 0.1430      |

## 60227 IEC 02 THW (f)

### 450/750V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE



 TIS 11 Part 3-2553

#### CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire

**Insulation** : Polyvinyl chloride (PVC/C)

**Core identification** : Black  
(Other colors available upon request)

#### TECHNICAL DATA

**Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 450/750 Volts

**Rated voltage** : 450 Volts between Line to Earth  
: 750 Volts between Line to Line

**AC Testing voltage** : 2,500 volts

**Reference standard** : TIS 11 Part 3-2553 Table 3

#### APPLICATION

Building wiring for installation on insulator or in raceway dry location.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Overall diameter average |                 | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Continuous current rating in free air maximum (40°C)<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------------------------------------------|----------------|--------------------------------------|--------------------------|-----------------|------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------|---------------------------------|------------------------|
|                                                    |                |                                      | minimum<br>(mm)          | maximum<br>(mm) |                                                |                                                  |                                                             |                                 |                        |
| 1.5                                                | Flexible       | 0.7                                  | 2.8                      | 3.4             | 13.3                                           | 0.010                                            | 16                                                          | 20                              | 100/C                  |
| 2.5                                                | Flexible       | 0.8                                  | 3.4                      | 4.1             | 7.98                                           | 0.009                                            | 25                                                          | 32                              | 100/C                  |
| 4                                                  | Flexible       | 0.8                                  | 3.9                      | 4.8             | 4.95                                           | 0.0070                                           | 30                                                          | 49                              | 100/C                  |
| 6                                                  | Flexible       | 0.8                                  | 4.4                      | 5.3             | 3.30                                           | 0.0060                                           | 39                                                          | 74                              | 100/C                  |
| 10                                                 | Flexible       | 1.0                                  | 5.7                      | 6.8             | 1.91                                           | 0.0056                                           | 51                                                          | 130                             | 100/C                  |
| 16                                                 | Flexible       | 1.0                                  | 6.7                      | 8.1             | 1.21                                           | 0.0046                                           | 73                                                          | 186                             | 100/C                  |
| 25                                                 | Flexible       | 1.2                                  | 8.4                      | 10.2            | 0.780                                          | 0.0044                                           | 97                                                          | 285                             | 100/C                  |
| 35                                                 | Flexible       | 1.2                                  | 9.7                      | 11.7            | 0.554                                          | 0.0038                                           | 140                                                         | 396                             | 100/C                  |
| 50                                                 | Flexible       | 1.4                                  | 11.5                     | 13.9            | 0.386                                          | 0.0037                                           | 175                                                         | 553                             | 300/D                  |
| 70                                                 | Flexible       | 1.4                                  | 13.2                     | 16.0            | 0.272                                          | 0.0032                                           | 216                                                         | 762                             | 300/D                  |
| 95                                                 | Flexible       | 1.6                                  | 15.1                     | 18.2            | 0.206                                          | 0.0032                                           | 258                                                         | 1007                            | 300/D                  |
| 120                                                | Flexible       | 1.6                                  | 16.7                     | 20.2            | 0.161                                          | 0.0029                                           | 302                                                         | 1301                            | 300/D                  |
| 150                                                | Flexible       | 1.8                                  | 18.6                     | 22.5            | 0.129                                          | 0.0029                                           | 347                                                         | 1609                            | 300/D                  |
| 185                                                | Flexible       | 2.0                                  | 20.6                     | 24.9            | 0.106                                          | 0.0029                                           | 394                                                         | 1891                            | 200/D                  |
| 240                                                | Flexible       | 2.2                                  | 23.5                     | 28.4            | 0.081                                          | 0.0028                                           | 471                                                         | 2506                            | 200/D                  |

C = Packing in Coil  
D = Packing in drum

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C Resistance |  | Inductance   |  | Reactance    |  | Impedance   |  |
|----------------------------------------------------|----------------|--|--------------|--|--------------|--|-------------|--|
|                                                    | R<br>(Ω/km)    |  | L<br>(mH/km) |  | XL<br>(Ω/km) |  | Z<br>(Ω/km) |  |
| 1.5                                                | 15.9135        |  | 0.5149       |  | 0.1618       |  | 15.9143     |  |
| 2.5                                                | 9.5481         |  | 0.5038       |  | 0.1583       |  | 9.5494      |  |
| 4                                                  | 5.9227         |  | 0.4846       |  | 0.1522       |  | 5.9246      |  |
| 6                                                  | 3.9485         |  | 0.4637       |  | 0.1457       |  | 3.9512      |  |
| 10                                                 | 2.2854         |  | 0.4631       |  | 0.1423       |  | 2.2898      |  |
| 16                                                 | 1.4478         |  | 0.4537       |  | 0.1394       |  | 1.4545      |  |
| 25                                                 | 0.9334         |  | 0.4409       |  | 0.1385       |  | 0.9436      |  |
| 35                                                 | 0.6630         |  | 0.4312       |  | 0.1355       |  | 0.6767      |  |
| 50                                                 | 0.4621         |  | 0.4294       |  | 0.1349       |  | 0.4814      |  |
| 70                                                 | 0.3258         |  | 0.4215       |  | 0.1324       |  | 0.3517      |  |
| 95                                                 | 0.2469         |  | 0.4230       |  | 0.1329       |  | 0.2804      |  |
| 120                                                | 0.1932         |  | 0.4174       |  | 0.1311       |  | 0.2335      |  |
| 150                                                | 0.1550         |  | 0.4172       |  | 0.1311       |  | 0.2030      |  |
| 185                                                | 0.1277         |  | 0.4187       |  | 0.1315       |  | 0.1833      |  |
| 240                                                | 0.0969         |  | 0.4164       |  | 0.1308       |  | 0.1628      |  |

## 60227 IEC 05 IV

### 300/500 V 70°C SOLID CONDUCTOR PVC INSULATED, SINGLE CORE



 TIS 11 Part 3-2553

#### CABLE STRUCTURE

**Conductor** : Solid annealed copper wire  
**Insulation** : Polyvinyl chloride (PVC/C)  
**Core identification** : Black  
 (Other colors available upon request)

#### TECHNICAL DATA

**Classification** : Maximum conductor temperature 70°C  
 : Circuit voltage not exceeding 300/500 Volts  
**Rated voltage** : 300 Volts between Line to Earth  
 : 500 Volts between Line to Line  
**AC Testing voltage** : 2,000 volts  
**Reference standard** : TIS 11 Part 3-2553 Table 5

#### APPLICATION

Building wiring for installation on insulator or in raceway dry location.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Overall diameter average |         | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air maximum (40°C)<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------------------------------------------|----------------|--------------------------------------|--------------------------|---------|------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------|---------------------------------|------------------------|
|                                                    |                |                                      | minimum                  | maximum |                                                |                                                  |                                                             |                                 |                        |
| 0.5                                                | Solid          | 0.6                                  | 1.9                      | 2.3     | 36.0                                           | 0.015                                            | 3                                                           | 9                               | 100/C                  |
| 0.75                                               | Solid          | 0.6                                  | 2.1                      | 2.5     | 24.5                                           | 0.012                                            | 6                                                           | 11                              | 100/C                  |
| 1                                                  | Solid          | 0.6                                  | 2.2                      | 2.7     | 18.1                                           | 0.011                                            | 10                                                          | 13                              | 100/C                  |

C = Packing in Coil

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C Resistance | Inductance   | Reactance    | Impedance   |
|----------------------------------------------------|----------------|--------------|--------------|-------------|
|                                                    | R<br>(Ω/km)    | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 0.5                                                | 43.0740        | 0.5798       | 0.1821       | 43.0744     |
| 0.75                                               | 29.3143        | 0.5486       | 0.1723       | 29.3148     |
| 1                                                  | 21.6567        | 0.5366       | 0.1686       | 21.6573     |

## 60227 IEC 06 IV (f)

### 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE



 TIS 11 Part 3-2553

#### CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire  
**Insulation** : Polyvinyl chloride (PVC/C)  
**Core identification** : Black  
 (Other colors available upon request)

#### TECHNICAL DATA

**Classification** : Maximum conductor temperature 70°C  
 : Circuit voltage not exceeding 300/500 Volts  
**Rated voltage** : 300 Volts between Line to Earth  
 : 500 Volts between Line to Line  
**AC Testing voltage** : 2,000 volts  
**Reference standard** : TIS 11 Part 3-2553 Table 7

#### APPLICATION

Building wiring for installation on insulator or in raceway dry location.

| Nominal cross sectional area | Conductor type | Insulation thickness nominal | Overall diameter average |         | Conductor resistance at 20°C maximum | Insulation resistance at 70°C minimum | Continuous current rating in free air maximum (40°C)                              | Cable weight approx. | Standard Length |
|------------------------------|----------------|------------------------------|--------------------------|---------|--------------------------------------|---------------------------------------|-----------------------------------------------------------------------------------|----------------------|-----------------|
|                              |                |                              | minimum                  | maximum |                                      |                                       |                                                                                   |                      |                 |
| (mm <sup>2</sup> )           |                | (mm)                         | (mm)                     | (mm)    | (Ω/km)                               | (MΩ·km)                               |  | (kg/km)              | (m)             |
| 0.5                          | Flexible       | 0.6                          | 2.1                      | 2.5     | 39.0                                 | 0.013                                 | 3                                                                                 | 9                    | 100/C           |
| 0.75                         | Flexible       | 0.6                          | 2.2                      | 2.7     | 26.0                                 | 0.011                                 | 6                                                                                 | 12                   | 100/C           |
| 1                            | Flexible       | 0.6                          | 2.4                      | 2.8     | 19.5                                 | 0.010                                 | 10                                                                                | 15                   | 100/C           |

C = Packing in Coil

| Nominal cross sectional area | A.C Resistance | Inductance | Reactance | Impedance |
|------------------------------|----------------|------------|-----------|-----------|
|                              | R (Ω/km)       | L (mH/km)  | XL (Ω/km) | Z (Ω/km)  |
| (mm <sup>2</sup> )           |                |            |           |           |
| 0.5                          | 46.6635        | 0.5642     | 0.1773    | 46.6638   |
| 0.75                         | 31.1090        | 0.5394     | 0.1695    | 31.1095   |
| 1                            | 23.3318        | 0.5225     | 0.1641    | 23.3323   |

## 60227 IEC 07 HIV

### 300/500 V 90°C SOLID CONDUCTOR PVC INSULATED, SINGLE CORE



TIS 11 Part 3-2553

#### CABLE STRUCTURE

**Conductor** : Solid annealed copper wire  
**Insulation** : Polyvinyl chloride (PVC/E)  
**Core identification** : Black  
 (Other colors available upon request)

#### TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C  
 : Circuit voltage not exceeding 300/500 Volts  
**Rated voltage** : 300 Volts between Line to Earth  
 : 500 Volts between Line to Line  
**AC Testing voltage** : 2,000 volts  
**Reference standard** : TIS 11 Part 3-2553 Table 9

#### APPLICATION

Building wiring for installation on insulator or in raceway dry location.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Overall diameter average |                 | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 90°C minimum<br>(MΩ·km) | Continuous current rating in free air maximum (40°C)<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------------------------------------------|----------------|--------------------------------------|--------------------------|-----------------|------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------|---------------------------------|------------------------|
|                                                    |                |                                      | minimum<br>(mm)          | maximum<br>(mm) |                                                |                                                  |                                                             |                                 |                        |
| 0.5                                                | Solid          | 0.6                                  | 1.9                      | 2.3             | 36.0                                           | 0.015                                            | 3                                                           | 9                               | 100/C                  |
| 0.75                                               | Solid          | 0.6                                  | 2.1                      | 2.5             | 24.5                                           | 0.013                                            | 6                                                           | 11                              | 100/C                  |
| 1                                                  | Solid          | 0.6                                  | 2.2                      | 2.7             | 18.1                                           | 0.012                                            | 10                                                          | 14                              | 100/C                  |
| 1.5                                                | Solid          | 0.7                                  | 2.6                      | 3.2             | 12.1                                           | 0.011                                            | 16                                                          | 20                              | 100/C                  |
| 2.5                                                | Solid          | 0.8                                  | 3.2                      | 3.9             | 7.41                                           | 0.009                                            | 25                                                          | 32                              | 100/C                  |

C = Packing in Coil

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C Resistance | Inductance   | Reactance    | Impedance   |
|----------------------------------------------------|----------------|--------------|--------------|-------------|
|                                                    | R<br>(Ω/km)    | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 0.5                                                | 43.0740        | 0.5758       | 0.1809       | 43.0744     |
| 0.75                                               | 29.3143        | 0.5526       | 0.1736       | 29.3148     |
| 1                                                  | 21.6567        | 0.5401       | 0.1697       | 21.6573     |
| 1.5                                                | 14.4777        | 0.5288       | 0.1661       | 14.4786     |
| 2.5                                                | 8.8661         | 0.5198       | 0.1633       | 8.8676      |

## 60227 IEC 08 HIV (f)

### 300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE



 TIS 11 Part 3-2553

#### CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire

**Insulation** : Polyvinyl chloride (PVC/E)

**Core identification** : Black  
(Other colors available upon request)

#### TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 300/500 Volts

**Rated voltage** : 300 Volts between Line to Earth  
: 500 Volts between Line to Line

**AC Testing voltage** : 2,000 volts

**Reference standard** : TIS 11 Part 3-2553 Table 11

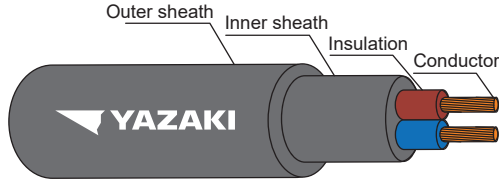
#### APPLICATION

Building wiring for installation on insulator or in raceway dry location.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Overall diameter average |                 | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 90°C minimum<br>(MΩ·km) | Continuous current rating in free air maximum (40°C)<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------------------------------------------|----------------|--------------------------------------|--------------------------|-----------------|------------------------------------------------|--------------------------------------------------|-------------------------------------------------------------|---------------------------------|------------------------|
|                                                    |                |                                      | minimum<br>(mm)          | maximum<br>(mm) |                                                |                                                  |                                                             |                                 |                        |
| 0.5                                                | Flexible       | 0.6                                  | 2.1                      | 2.5             | 39.0                                           | 0.013                                            | 3                                                           | 9                               | 100/C                  |
| 0.75                                               | Flexible       | 0.6                                  | 2.2                      | 2.7             | 26.0                                           | 0.012                                            | 6                                                           | 11.5                            | 100/C                  |
| 1                                                  | Flexible       | 0.6                                  | 2.4                      | 2.8             | 19.5                                           | 0.010                                            | 10                                                          | 14.5                            | 100/C                  |
| 1.5                                                | Flexible       | 0.7                                  | 2.8                      | 3.4             | 13.3                                           | 0.009                                            | 16                                                          | 20                              | 100/C                  |
| 2.5                                                | Flexible       | 0.8                                  | 3.4                      | 4.1             | 7.98                                           | 0.009                                            | 25                                                          | 31.5                            | 100/C                  |

C = Packing in Coil

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C Resistance | Inductance   | Reactance    | Impedance   |
|----------------------------------------------------|----------------|--------------|--------------|-------------|
|                                                    | R<br>(Ω/km)    | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 0.5                                                | 46.6635        | 0.5642       | 0.1773       | 46.6638     |
| 0.75                                               | 31.1090        | 0.5394       | 0.1695       | 31.1095     |
| 1                                                  | 23.3318        | 0.5225       | 0.1641       | 23.3323     |
| 1.5                                                | 15.9135        | 0.5149       | 0.1618       | 15.9143     |
| 2.5                                                | 9.581          | 0.5038       | 0.1583       | 9.5494      |

**300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED**

 TIS 11 Part 4-2553

**CABLE STRUCTURE**

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown                            |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)     |

**TECHNICAL DATA**

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

**APPLICATION**

For installation exposed, or in raceway, wet or dry location.

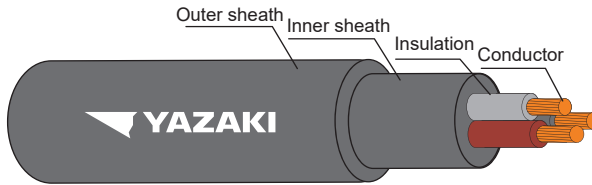
| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |         | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air maximum (40°C) (A)<br> | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|----------------------------------------|--------------------------|---------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        |                                        | minimum                  | maximum |                                                |                                                  |                                                                                                                                               |                                 |                        |
| 2               | 1.5                                                | Solid          | 0.7                                  | 0.4                                    | 1.2                                    | 7.6                      | 10.0    | 12.1                                           | 0.011                                            | 19                                                                                                                                            | 120                             | 100/C                  |
|                 | 1.5                                                | Non-compacted  | 0.7                                  | 0.4                                    | 1.2                                    | 7.8                      | 10.5    | 12.1                                           | 0.010                                            | 19                                                                                                                                            | 130                             | 100/C                  |
|                 | 2.5                                                | Solid          | 0.8                                  | 0.4                                    | 1.2                                    | 8.6                      | 11.5    | 7.41                                           | 0.010                                            | 26                                                                                                                                            | 160                             | 100/C                  |
|                 | 2.5                                                | Non-compacted  | 0.8                                  | 0.4                                    | 1.2                                    | 9.0                      | 12.0    | 7.41                                           | 0.009                                            | 26                                                                                                                                            | 180                             | 100/C                  |
|                 | 4                                                  | Solid          | 0.8                                  | 0.4                                    | 1.2                                    | 9.6                      | 12.5    | 4.61                                           | 0.0085                                           | 35                                                                                                                                            | 210                             | 100/C                  |
|                 | 4                                                  | Non-compacted  | 0.8                                  | 0.4                                    | 1.2                                    | 10.0                     | 13.0    | 4.61                                           | 0.0077                                           | 35                                                                                                                                            | 230                             | 100/C                  |
|                 | 6                                                  | Non-compacted  | 0.8                                  | 0.4                                    | 1.2                                    | 11.0                     | 14.0    | 3.08                                           | 0.0065                                           | 44                                                                                                                                            | 290                             | 100/C                  |
|                 | 10                                                 | Non-compacted  | 1.0                                  | 0.6                                    | 1.4                                    | 13.5                     | 17.5    | 1.83                                           | 0.0065                                           | 61                                                                                                                                            | 470                             | 100/C                  |
|                 | 16                                                 | Non-compacted  | 1.0                                  | 0.6                                    | 1.4                                    | 15.5                     | 20.0    | 1.15                                           | 0.0052                                           | 82                                                                                                                                            | 650                             | 500/D                  |
|                 | 25                                                 | Non-compacted  | 1.2                                  | 0.8                                    | 1.4                                    | 18.5                     | 24.0    | 0.727                                          | 0.0050                                           | 104                                                                                                                                           | 950                             | 500/D                  |
|                 | 35                                                 | Non-compacted  | 1.2                                  | 1.0                                    | 1.6                                    | 21.0                     | 27.5    | 0.524                                          | 0.0044                                           | 129                                                                                                                                           | 1300                            | 500/D                  |

 C = Packing in Coil  
 D = Packing in drum

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | A.C Resistance |  | Inductance   |  | Reactance    |  | Impedance   |  |
|-----------------|----------------------------------------------------|----------------|----------------|--|--------------|--|--------------|--|-------------|--|
|                 |                                                    |                | R<br>(Ω/km)    |  | L<br>(mH/km) |  | XL<br>(Ω/km) |  | Z<br>(Ω/km) |  |
| 2               | 1.5                                                | Solid          | 14.4777        |  | 0.3439       |  | 0.1081       |  | 14.4781     |  |
|                 | 1.5                                                | Stranded       | 14.4777        |  | 0.3427       |  | 0.1077       |  | 14.4781     |  |
|                 | 2.5                                                | Solid          | 8.8661         |  | 0.3350       |  | 0.1052       |  | 8.8667      |  |
|                 | 2.5                                                | Stranded       | 8.8661         |  | 0.3405       |  | 0.1070       |  | 8.8667      |  |
|                 | 4                                                  | Solid          | 5.5159         |  | 0.3135       |  | 0.0985       |  | 5.5168      |  |
|                 | 4                                                  | Stranded       | 5.5159         |  | 0.3164       |  | 0.0994       |  | 5.5168      |  |
|                 | 6                                                  | Stranded       | 3.6853         |  | 0.3011       |  | 0.0946       |  | 3.6865      |  |
|                 | 10                                                 | Stranded       | 2.1897         |  | 0.2943       |  | 0.0925       |  | 2.1917      |  |
|                 | 16                                                 | Stranded       | 1.3761         |  | 0.2773       |  | 0.0871       |  | 1.3789      |  |
|                 | 25                                                 | Stranded       | 0.8700         |  | 0.2748       |  | 0.0863       |  | 0.8743      |  |
|                 | 35                                                 | Stranded       | 0.6272         |  | 0.2554       |  | 0.0803       |  | 0.6323      |  |

## 60227 IEC 10

### 300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED



 TIS 11 Part 4-2553

#### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey                     |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)     |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location.

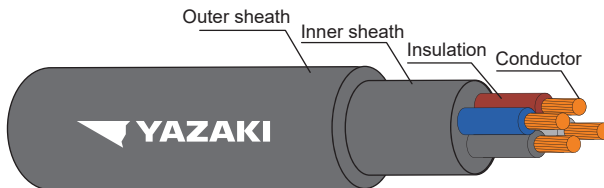
| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |                 | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air maximum (40°C) (A)<br><br>ladder or trays | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|----------------------------------------|--------------------------|-----------------|------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        |                                        | minimum<br>(mm)          | maximum<br>(mm) |                                                |                                                  |                                                                                                                                                                  |                                 |                        |
| 3               | 1.5                                                | Solid          | 0.7                                  | 0.4                                    | 1.2                                    | 8.0                      | 10.5            | 12.1                                           | 0.011                                            | 16                                                                                                                                                               | 140                             | 100/C                  |
|                 | 1.5                                                | Non-compacted  | 0.7                                  | 0.4                                    | 1.2                                    | 8.2                      | 11.0            | 12.1                                           | 0.010                                            | 16                                                                                                                                                               | 150                             | 100/C                  |
|                 | 2.5                                                | Solid          | 0.8                                  | 0.4                                    | 1.2                                    | 9.2                      | 12.0            | 7.41                                           | 0.010                                            | 22                                                                                                                                                               | 190                             | 100/C                  |
|                 | 2.5                                                | Non-compacted  | 0.8                                  | 0.4                                    | 1.2                                    | 9.4                      | 12.5            | 7.41                                           | 0.009                                            | 22                                                                                                                                                               | 210                             | 100/C                  |
|                 | 4                                                  | Solid          | 0.8                                  | 0.4                                    | 1.2                                    | 10.0                     | 13.0            | 4.61                                           | 0.0085                                           | 30                                                                                                                                                               | 250                             | 100/C                  |
|                 | 4                                                  | Non-compacted  | 0.8                                  | 0.4                                    | 1.2                                    | 10.5                     | 13.5            | 4.61                                           | 0.0077                                           | 30                                                                                                                                                               | 270                             | 100/C                  |
|                 | 6                                                  | Non-compacted  | 0.8                                  | 0.4                                    | 1.4                                    | 12.0                     | 15.5            | 3.08                                           | 0.0065                                           | 37                                                                                                                                                               | 370                             | 100/C                  |
|                 | 10                                                 | Non-compacted  | 1.0                                  | 0.6                                    | 1.4                                    | 14.5                     | 19.0            | 1.83                                           | 0.0065                                           | 52                                                                                                                                                               | 600                             | 500/D                  |
|                 | 16                                                 | Non-compacted  | 1.0                                  | 0.8                                    | 1.4                                    | 16.5                     | 21.5            | 1.15                                           | 0.0052                                           | 70                                                                                                                                                               | 800                             | 500/D                  |
|                 | 25                                                 | Non-compacted  | 1.2                                  | 0.8                                    | 1.6                                    | 20.5                     | 26.0            | 0.727                                          | 0.0050                                           | 88                                                                                                                                                               | 1200                            | 500/D                  |
|                 | 35                                                 | Non-compacted  | 1.2                                  | 1.0                                    | 1.6                                    | 22.0                     | 29.0            | 0.524                                          | 0.0044                                           | 110                                                                                                                                                              | 1600                            | 500/D                  |

C = Packing in Coil  
D = Packing in drum

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | A.C Resistance |  | Inductance   |  | Reactance    |  | Impedance |
|-----------------|----------------------------------------------------|----------------|----------------|--|--------------|--|--------------|--|-----------|
|                 |                                                    |                | R<br>(Ω/km)    |  | L<br>(mH/km) |  | XL<br>(Ω/km) |  |           |
| 3               | 1.5                                                | Solid          | 14.4777        |  | 0.3439       |  | 0.1081       |  | 14.4781   |
|                 | 1.5                                                | Stranded       | 14.4777        |  | 0.3427       |  | 0.1077       |  | 14.4781   |
|                 | 2.5                                                | Solid          | 8.8661         |  | 0.3350       |  | 0.1052       |  | 8.667     |
|                 | 2.5                                                | Stranded       | 8.8661         |  | 0.3405       |  | 0.1070       |  | 8.667     |
|                 | 4                                                  | Solid          | 5.5159         |  | 0.3135       |  | 0.985        |  | 5.5168    |
|                 | 4                                                  | Stranded       | 5.5159         |  | 3.3164       |  | 0.994        |  | 5.5168    |
|                 | 6                                                  | Stranded       | 3.6853         |  | 0.3011       |  | 0.946        |  | 3.6865    |
|                 | 10                                                 | Stranded       | 2.1879         |  | 0.2943       |  | 0.925        |  | 2.1916    |
|                 | 16                                                 | Stranded       | 1.3761         |  | 0.2773       |  | 0.871        |  | 1.3788    |
|                 | 25                                                 | Stranded       | 0.8701         |  | 0.2748       |  | 0.863        |  | 0.8743    |
|                 | 35                                                 | Stranded       | 0.6273         |  | 0.2554       |  | 0.803        |  | 0.6234    |

## 60227 IEC 10

300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED



TIS 11 Part 4-2553

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown, Black, Grey               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

### APPLICATION

For installation exposed, or in raceway, wet or dry location.

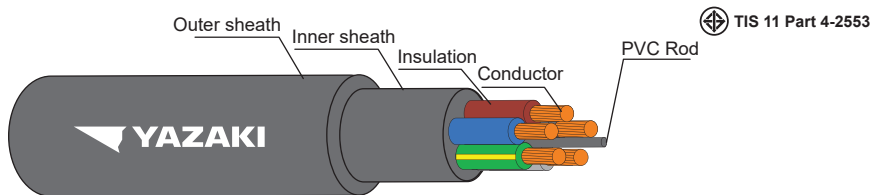
| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |                 | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air maximum (40°C) (A)<br>ladder or trays<br> | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|----------------------------------------|--------------------------|-----------------|------------------------------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        |                                        | minimum<br>(mm)          | maximum<br>(mm) |                                                |                                                  |                                                                                                                                                                  |                                 |                        |
| 4               | 1.5                                                | Solid          | 0.7                                  | 0.4                                    | 1.2                                    | 8.6                      | 11.5            | 12.1                                           | 0.011                                            | 16                                                                                                                                                               | 170                             | 100/C                  |
|                 | 1.5                                                | Non-compacted  | 0.7                                  | 0.4                                    | 1.2                                    | 9.0                      | 12.0            | 12.1                                           | 0.010                                            | 16                                                                                                                                                               | 180                             | 100/C                  |
|                 | 2.5                                                | Solid          | 0.8                                  | 0.4                                    | 1.2                                    | 10.0                     | 13.0            | 7.41                                           | 0.010                                            | 22                                                                                                                                                               | 230                             | 100/C                  |
|                 | 2.5                                                | Non-compacted  | 0.8                                  | 0.4                                    | 1.2                                    | 10.0                     | 13.5            | 7.41                                           | 0.009                                            | 22                                                                                                                                                               | 250                             | 100/C                  |
|                 | 4                                                  | Solid          | 0.8                                  | 0.4                                    | 1.4                                    | 11.5                     | 14.5            | 4.61                                           | 0.0085                                           | 30                                                                                                                                                               | 320                             | 100/C                  |
|                 | 4                                                  | Non-compacted  | 0.8                                  | 0.4                                    | 1.4                                    | 12.0                     | 15.0            | 4.61                                           | 0.0077                                           | 30                                                                                                                                                               | 340                             | 100/C                  |
|                 | 6                                                  | Non-compacted  | 0.8                                  | 0.6                                    | 1.4                                    | 13.0                     | 17.0            | 3.08                                           | 0.0065                                           | 37                                                                                                                                                               | 470                             | 100/C                  |
|                 | 10                                                 | Non-compacted  | 1.0                                  | 0.6                                    | 1.4                                    | 16.0                     | 20.5            | 1.83                                           | 0.0065                                           | 52                                                                                                                                                               | 700                             | 500/D                  |
|                 | 16                                                 | Non-compacted  | 1.0                                  | 0.8                                    | 1.4                                    | 18.0                     | 23.5            | 1.15                                           | 0.0052                                           | 70                                                                                                                                                               | 1000                            | 500/D                  |
|                 | 25                                                 | Non-compacted  | 1.2                                  | 1.0                                    | 1.6                                    | 22.5                     | 28.5            | 0.727                                          | 0.0050                                           | 88                                                                                                                                                               | 1600                            | 500/D                  |
|                 | 35                                                 | Non-compacted  | 1.2                                  | 1.0                                    | 1.6                                    | 24.5                     | 32.0            | 0.524                                          | 0.0044                                           | 110                                                                                                                                                              | 2100                            | 500/D                  |

C = Packing in Coil  
D = Packing in drum

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | A.C Resistance | Inductance   | Reactance    | Impedance   |
|-----------------|----------------------------------------------------|----------------|----------------|--------------|--------------|-------------|
|                 |                                                    |                | R<br>(Ω/km)    | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 4               | 1.5                                                | Solid          | 14.4777        | 0.3439       | 0.1081       | 14.4781     |
|                 | 1.5                                                | Stranded       | 14.4777        | 0.3427       | 0.1077       | 14.4781     |
|                 | 2.5                                                | Solid          | 8.8661         | 0.3350       | 0.1052       | 8.8667      |
|                 | 2.5                                                | Stranded       | 8.8661         | 0.3405       | 0.1070       | 8.8667      |
|                 | 4                                                  | Solid          | 5.5159         | 0.3135       | 0.0985       | 5.5168      |
|                 | 4                                                  | Stranded       | 5.5159         | 0.3164       | 0.0994       | 5.5168      |
|                 | 6                                                  | Stranded       | 3.6853         | 0.3011       | 0.0946       | 3.865       |
|                 | 10                                                 | Stranded       | 2.1897         | 0.2943       | 0.0925       | 2.1916      |
|                 | 16                                                 | Stranded       | 1.3761         | 0.2773       | 0.0871       | 1.3789      |
|                 | 25                                                 | Stranded       | 0.8701         | 0.2748       | 0.0863       | 0.8744      |
|                 | 35                                                 | Stranded       | 0.6273         | 0.2554       | 0.0803       | 0.6324      |

## 60227 IEC 10

300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED



TIS 11 Part 4-2553

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown, Black, Grey, Green/Yellow |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

### APPLICATION

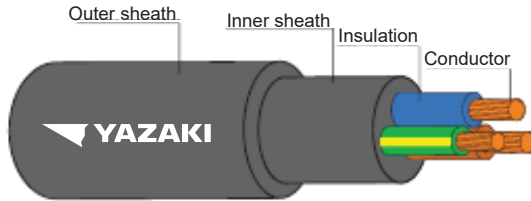
For installation exposed, or in raceway, wet or dry location.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |                 | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air maximum (40°C) (A)<br>ladder or trays | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|----------------------------------------|--------------------------|-----------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        |                                        | minimum<br>(mm)          | maximum<br>(mm) |                                                |                                                  |                                                                             |                                 |                        |
| 5               | 1.5                                                | Solid          | 0.7                                  | 0.4                                    | 1.2                                    | 9.4                      | 12.0            | 12.1                                           | 0.011                                            | 16                                                                          | 200                             | 100/C                  |
|                 | 1.5                                                | Non-compacted  | 0.7                                  | 0.4                                    | 1.2                                    | 9.8                      | 12.5            | 12.1                                           | 0.010                                            | 16                                                                          | 220                             | 100/C                  |
|                 | 2.5                                                | Solid          | 0.8                                  | 0.4                                    | 1.2                                    | 11.0                     | 14.0            | 7.41                                           | 0.010                                            | 22                                                                          | 280                             | 100/C                  |
|                 | 2.5                                                | Non-compacted  | 0.8                                  | 0.4                                    | 1.2                                    | 11.0                     | 14.5            | 7.41                                           | 0.009                                            | 22                                                                          | 310                             | 100/C                  |
|                 | 4                                                  | Solid          | 0.8                                  | 0.6                                    | 1.4                                    | 12.5                     | 16.0            | 4.61                                           | 0.0085                                           | 30                                                                          | 410                             | 100/C                  |
|                 | 4                                                  | Non-compacted  | 0.8                                  | 0.6                                    | 1.4                                    | 13.0                     | 17.0            | 4.61                                           | 0.0077                                           | 30                                                                          | 430                             | 100/C                  |
|                 | 6                                                  | Non-compacted  | 0.8                                  | 0.6                                    | 1.4                                    | 14.5                     | 18.5            | 3.08                                           | 0.0065                                           | 37                                                                          | 550                             | 500/D                  |
|                 | 10                                                 | Non-compacted  | 1.0                                  | 0.6                                    | 1.4                                    | 17.5                     | 22.0            | 1.83                                           | 0.0065                                           | 52                                                                          | 900                             | 500/D                  |
|                 | 16                                                 | Non-compacted  | 1.0                                  | 0.8                                    | 1.6                                    | 20.5                     | 26.0            | 1.15                                           | 0.0052                                           | 70                                                                          | 1300                            | 500/D                  |
|                 | 25                                                 | Non-compacted  | 1.2                                  | 1.0                                    | 1.6                                    | 24.5                     | 31.5            | 0.727                                          | 0.0050                                           | 88                                                                          | 1900                            | 500/D                  |
|                 | 35                                                 | Non-compacted  | 1.2                                  | 1.2                                    | 1.6                                    | 27.0                     | 35.0            | 0.524                                          | 0.0044                                           | 110                                                                         | 2600                            | 500/D                  |

C = Packing in Coil  
D = Packing in drum

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | A.C Resistance |  | Inductance   |  | Reactance    |  | Impedance   |  |
|-----------------|----------------------------------------------------|----------------|----------------|--|--------------|--|--------------|--|-------------|--|
|                 |                                                    |                | R<br>(Ω/km)    |  | L<br>(mH/km) |  | XL<br>(Ω/km) |  | Z<br>(Ω/km) |  |
| 5               | 1.5                                                | Solid          | 14.4777        |  | 0.3439       |  | 0.1081       |  | 14.4781     |  |
|                 | 1.5                                                | Stranded       | 14.4777        |  | 0.3427       |  | 0.1077       |  | 14.4781     |  |
|                 | 2.5                                                | Solid          | 8.8661         |  | 0.3350       |  | 0.1052       |  | 8.8667      |  |
|                 | 2.5                                                | Stranded       | 8.8661         |  | 0.3405       |  | 0.1070       |  | 8.8667      |  |
|                 | 4                                                  | Solid          | 5.5159         |  | 0.3135       |  | 0.0985       |  | 5.5168      |  |
|                 | 4                                                  | Stranded       | 5.5159         |  | 0.3164       |  | 0.0994       |  | 5.5168      |  |
|                 | 6                                                  | Stranded       | 3.6853         |  | 0.3011       |  | 0.0946       |  | 3.6865      |  |
|                 | 10                                                 | Stranded       | 2.1897         |  | 0.2943       |  | 0.0925       |  | 2.1916      |  |
|                 | 16                                                 | Stranded       | 1.3761         |  | 0.2773       |  | 0.0871       |  | 1.3789      |  |
|                 | 25                                                 | Stranded       | 0.8701         |  | 0.2748       |  | 0.0863       |  | 0.8744      |  |
|                 | 35                                                 | Stranded       | 0.6273         |  | 0.2554       |  | 0.0803       |  | 0.6324      |  |

## 300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND


 TIS 11 Part 4-2553

## CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown + Green/Yellow             |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)     |

## TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 Volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

## APPLICATION

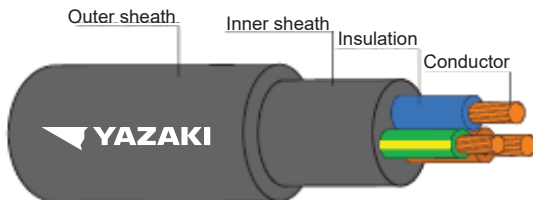
For installation exposed, or in raceway, wet or dry location.

| Number of<br>cores | Conductor                     |        |                   |        | Insulation<br>thickness<br>nominal | Inner<br>sheath<br>thickness<br>approx. | Outer<br>sheath<br>thickness<br>nominal | Overall diameter<br>average |         | Conductor<br>resistance<br>at 20°C<br>maximum |        | Insulation<br>resistance<br>at 70°C<br>minimum | Continuous<br>current rating<br>in free air<br>at (40°C) | Cable<br>weight<br>approx. | Standard<br>Length |
|--------------------|-------------------------------|--------|-------------------|--------|------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------|---------|-----------------------------------------------|--------|------------------------------------------------|----------------------------------------------------------|----------------------------|--------------------|
|                    | Nominal cross<br>section area |        | Type of Conductor |        |                                    |                                         |                                         |                             |         |                                               |        |                                                |                                                          |                            |                    |
|                    | Phase                         | Ground | Phase             | Ground |                                    |                                         |                                         | Minimum                     | Maximum | Phase                                         | Ground |                                                |                                                          |                            |                    |
|                    |                               |        |                   |        |                                    |                                         |                                         |                             |         |                                               |        |                                                |                                                          |                            |                    |
| 2+G                | 1.5                           | 1.5    | Solid             |        | 0.7                                | 0.4                                     | 1.2                                     | 8.0                         | 10.5    | 12.1                                          | 12.1   | 0.011                                          | 19                                                       | 150                        | 100/C              |
|                    | 1.5                           | 1.5    | Non-compacted     |        | 0.7                                | 0.4                                     | 1.2                                     | 8.2                         | 11.0    | 12.1                                          | 12.1   | 0.010                                          | 19                                                       | 160                        | 100/C              |
|                    | 2.5                           | 2.5    | Solid             |        | 0.8                                | 0.4                                     | 1.2                                     | 9.2                         | 12.0    | 7.41                                          | 7.41   | 0.010                                          | 26                                                       | 200                        | 100/C              |
|                    | 2.5                           | 2.5    | Non-compacted     |        | 0.8                                | 0.4                                     | 1.2                                     | 9.4                         | 12.5    | 7.41                                          | 7.41   | 0.009                                          | 26                                                       | 220                        | 100/C              |
|                    | 4                             | 4      | Solid             |        | 0.8                                | 0.4                                     | 1.2                                     | 10.0                        | 13.0    | 4.61                                          | 4.61   | 0.0085                                         | 35                                                       | 260                        | 100/C              |
|                    | 4                             | 4      | Non-compacted     |        | 0.8                                | 0.4                                     | 1.2                                     | 10.5                        | 13.5    | 4.61                                          | 4.61   | 0.0077                                         | 35                                                       | 280                        | 100/C              |
|                    | 6                             | 6      | Non-compacted     |        | 0.8                                | 0.4                                     | 1.4                                     | 12.0                        | 15.5    | 3.08                                          | 3.08   | 0.0065                                         | 44                                                       | 380                        | 100/C              |
|                    | 10                            | 10     | Non-compacted     |        | 1.0                                | 0.6                                     | 1.4                                     | 14.5                        | 19.0    | 1.83                                          | 1.83   | 0.0065                                         | 61                                                       | 590                        | 500/D              |
|                    | 16                            | 16     | Non-compacted     |        |                                    | 0.8                                     | 1.4                                     | 16.5                        | 21.5    | 1.15                                          | 1.15   | 0.0052                                         | 82                                                       | 830                        | 500/D              |

C = Packing in coil  
D = Packing in drum

## 60227 IEC 10

300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



 TIS 11 Part 4-2553

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or Stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown + Green/Yellow             |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)     |

### TECHNICAL DATA

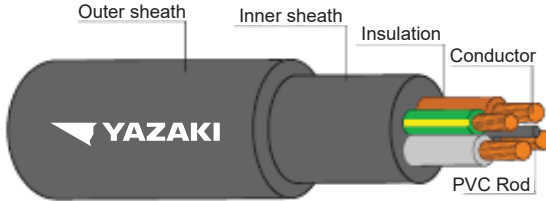
|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 Volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

### APPLICATION

For installation exposed, or in raceway, wet or dry location.

| Number of cores | Nominal cross sectional area |                              | A.C Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|-----------------|------------------------------|------------------------------|-------------------------------|----------------------------|---------------------------|--------------------------|
|                 | Phase<br>(mm <sup>2</sup> )  | Ground<br>(mm <sup>2</sup> ) |                               |                            |                           |                          |
| 2+G             | 1.5                          | 1.5                          | 14.4777                       | 0.3439                     | 0.1081                    | 14.4781                  |
|                 | 1.5                          | 1.5                          | 14.4777                       | 0.3427                     | 0.1077                    | 14.4781                  |
|                 | 2.5                          | 2.5                          | 8.8661                        | 0.3350                     | 0.1052                    | 8.8667                   |
|                 | 2.5                          | 2.5                          | 8.8661                        | 0.3405                     | 0.1070                    | 8.8667                   |
|                 | 4                            | 4                            | 5.5159                        | 0.3135                     | 0.0985                    | 5.5168                   |
|                 | 4                            | 4                            | 5.5159                        | 0.3164                     | 0.0994                    | 5.5168                   |
|                 | 6                            | 6                            | 3.6853                        | 0.3011                     | 0.0946                    | 3.6865                   |
|                 | 10                           | 10                           | 2.1897                        | 0.2943                     | 0.0925                    | 2.1917                   |
|                 | 16                           | 16                           | 1.3761                        | 0.2773                     | 0.0871                    | 1.3789                   |

B

**300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND**

 TIS 11 Part 4-2553

**CABLE STRUCTURE**

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey + Green/Yellow      |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)     |

**TECHNICAL DATA**

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 Volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

**APPLICATION**

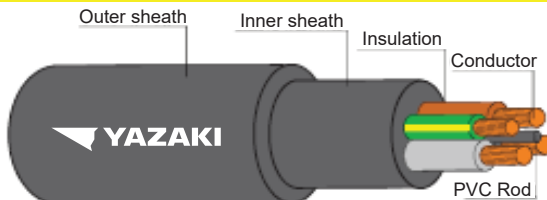
For installation exposed, or in raceway, wet or dry location.

| Number of<br>cores | Conductor                     |        |                      |        | Insulation<br>thickness<br>nominal | Inner<br>sheath<br>thickness<br>approx. | Outer<br>sheath<br>thickness<br>nominal | Overall diameter<br>average |         | Conductor<br>resistance<br>at 20°C<br>maximum |        | Insulation<br>resistance<br>at 70°C<br>minimum | Continuous<br>current rating<br>in free air<br>at (40°C) | Cable<br>weight<br>approx. | Standard<br>Length |
|--------------------|-------------------------------|--------|----------------------|--------|------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------|---------|-----------------------------------------------|--------|------------------------------------------------|----------------------------------------------------------|----------------------------|--------------------|
|                    | Nominal cross<br>section area |        | Type of<br>Conductor |        |                                    |                                         |                                         |                             |         |                                               |        |                                                |                                                          |                            |                    |
|                    | Phase                         | Ground | Phase                | Ground |                                    |                                         |                                         | Minimum                     | Maximum | Phase                                         | Ground |                                                |                                                          |                            |                    |
|                    | (mm²)                         | (mm²)  |                      |        |                                    |                                         |                                         | (mm)                        | (mm)    | (Ω/km)                                        | (Ω/km) |                                                |                                                          |                            |                    |
| 3+G                | 1.5                           | 1.5    | Solid                |        | 0.7                                | 0.4                                     | 1.2                                     | 8.6                         | 11.5    | 12.1                                          | 12.1   | 0.011                                          | 16                                                       | 170                        | 100/C              |
|                    | 1.5                           | 1.5    | Non-compacted        |        | 0.7                                | 0.4                                     | 1.2                                     | 9.0                         | 12.0    | 12.1                                          | 12.1   | 0.010                                          | 16                                                       | 190                        | 100/C              |
|                    | 2.5                           | 2.5    | Solid                |        | 0.8                                | 0.4                                     | 1.2                                     | 10.0                        | 13.0    | 7.41                                          | 7.41   | 0.010                                          | 22                                                       | 240                        | 100/C              |
|                    | 2.5                           | 2.5    | Non-compacted        |        | 0.8                                | 0.4                                     | 1.2                                     | 10.0                        | 13.5    | 7.41                                          | 7.41   | 0.009                                          | 22                                                       | 260                        | 100/C              |
|                    | 4                             | 4      | Solid                |        | 0.8                                | 0.4                                     | 1.4                                     | 11.5                        | 14.5    | 4.61                                          | 4.61   | 0.0085                                         | 30                                                       | 330                        | 100/C              |
|                    | 4                             | 4      | Non-compacted        |        | 0.8                                | 0.4                                     | 1.4                                     | 12.0                        | 15.0    | 4.61                                          | 4.61   | 0.0077                                         | 30                                                       | 350                        | 100/C              |
|                    | 6                             | 6      | Non-compacted        |        | 0.8                                | 0.6                                     | 1.4                                     | 13.0                        | 17.0    | 3.08                                          | 3.08   | 0.0065                                         | 37                                                       | 480                        | 500/D              |
|                    | 10                            | 10     | Non-compacted        |        | 1.0                                | 0.6                                     | 1.4                                     | 16.0                        | 20.5    | 1.83                                          | 1.83   | 0.0065                                         | 52                                                       | 730                        | 500/D              |
|                    | 16                            | 16     | Non-compacted        |        |                                    | 0.8                                     | 1.4                                     | 18.0                        | 23.5    | 1.15                                          | 1.15   | 0.0052                                         | 70                                                       | 1040                       | 500/D              |

C = Packing in coil  
D = Packing in drum

## 60227 IEC 10

300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



 TIS 11 Part 4-2553

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or Stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey + Green/Yellow      |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)     |

### TECHNICAL DATA

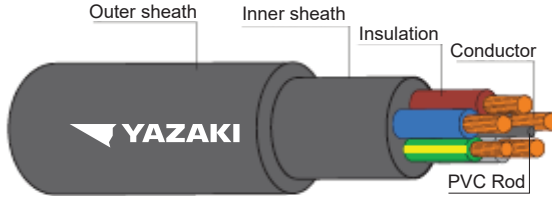
|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 Volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

### APPLICATION

For installation exposed, or in raceway, wet or dry location.

| Number of cores | Nominal cross sectional area |                              | A.C Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|-----------------|------------------------------|------------------------------|-------------------------------|----------------------------|---------------------------|--------------------------|
|                 | Phase<br>(mm <sup>2</sup> )  | Ground<br>(mm <sup>2</sup> ) |                               |                            |                           |                          |
| 3+G             | 1.5                          | 1.5                          | 14.4777                       | 0.3439                     | 0.1081                    | 14.4781                  |
|                 | 1.5                          | 1.5                          | 14.4777                       | 0.3427                     | 0.1077                    | 14.4781                  |
|                 | 2.5                          | 2.5                          | 8.8661                        | 0.3350                     | 0.1052                    | 8.8667                   |
|                 | 2.5                          | 2.5                          | 8.8661                        | 0.3405                     | 0.1070                    | 8.8667                   |
|                 | 4                            | 4                            | 5.5159                        | 0.3135                     | 0.0985                    | 5.5168                   |
|                 | 4                            | 4                            | 5.5159                        | 0.3164                     | 0.0994                    | 5.5168                   |
|                 | 6                            | 6                            | 3.6853                        | 0.3011                     | 0.0946                    | 3.6865                   |
|                 | 10                           | 10                           | 2.1897                        | 0.2943                     | 0.0925                    | 2.1917                   |
|                 | 16                           | 16                           | 1.3761                        | 0.2773                     | 0.0871                    | 1.3789                   |

B

**300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND**

 TIS 11 Part 4-2553

**CABLE STRUCTURE**

|                            |                                           |
|----------------------------|-------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire  |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)              |
| <b>Core identification</b> | : Blue, Brown, Black, Grey + Green/Yellow |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)          |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)      |

**TECHNICAL DATA**

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 Volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

**APPLICATION**

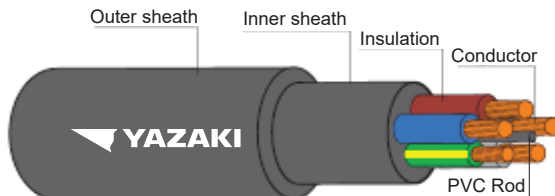
For installation exposed, or in raceway, wet or dry location.

| Number of<br>cores | Conductor                     |                 |                   |        | Insulation<br>thickness<br>nominal | Inner<br>sheath<br>thickness<br>approx. | Outer<br>sheath<br>thickness<br>nominal | Overall diameter<br>average |                 | Conductor<br>resistance<br>at 20°C<br>maximum |                  | Insulation<br>resistance<br>at 70°C<br>minimum | Continuous<br>current rating<br>in free air<br>at (40°C) | Cable<br>weight<br>approx. | Standard<br>Length |
|--------------------|-------------------------------|-----------------|-------------------|--------|------------------------------------|-----------------------------------------|-----------------------------------------|-----------------------------|-----------------|-----------------------------------------------|------------------|------------------------------------------------|----------------------------------------------------------|----------------------------|--------------------|
|                    | Nominal cross<br>section area |                 | Type of Conductor |        |                                    |                                         |                                         |                             |                 |                                               |                  |                                                |                                                          |                            |                    |
|                    | Phase<br>(mm²)                | Ground<br>(mm²) | Phase             | Ground |                                    |                                         |                                         | Minimum<br>(mm)             | Maximum<br>(mm) | Phase<br>(Ω/km)                               | Ground<br>(Ω/km) |                                                |                                                          |                            |                    |
|                    |                               |                 |                   |        |                                    |                                         |                                         |                             |                 |                                               |                  |                                                |                                                          |                            |                    |
| 4+G                | 1.5                           | 1.5             | Solid             |        | 0.7                                | 0.4                                     | 1.2                                     | 9.4                         | 12.0            | 12.1                                          | 12.1             | 0.011                                          | 16                                                       | 210                        | 100/C              |
|                    | 1.5                           | 1.5             | Non-compacted     |        | 0.7                                | 0.4                                     | 1.2                                     | 9.8                         | 12.5            | 12.1                                          | 12.1             | 0.010                                          | 16                                                       | 230                        | 100/C              |
|                    | 2.5                           | 2.5             | Solid             |        | 0.8                                | 0.4                                     | 1.2                                     | 11.0                        | 14.0            | 7.41                                          | 7.41             | 0.010                                          | 22                                                       | 290                        | 100/C              |
|                    | 2.5                           | 2.5             | Non-compacted     |        | 0.8                                | 0.4                                     | 1.2                                     | 11.0                        | 14.5            | 7.41                                          | 7.41             | 0.009                                          | 22                                                       | 310                        | 100/C              |
|                    | 4                             | 4               | Solid             |        | 0.8                                | 0.6                                     | 1.4                                     | 12.5                        | 16.0            | 4.61                                          | 4.61             | 0.0085                                         | 30                                                       | 410                        | 100/C              |
|                    | 4                             | 4               | Non-compacted     |        | 0.8                                | 0.6                                     | 1.4                                     | 13.0                        | 17.0            | 4.61                                          | 4.61             | 0.0077                                         | 30                                                       | 440                        | 100/C              |
|                    | 6                             | 6               | Non-compacted     |        | 0.8                                | 0.6                                     | 1.4                                     | 14.5                        | 18.5            | 3.08                                          | 3.08             | 0.0065                                         | 37                                                       | 580                        | 500/D              |
|                    | 10                            | 10              | Non-compacted     |        | 1.0                                | 0.6                                     | 1.4                                     | 17.5                        | 22.0            | 1.83                                          | 1.83             | 0.0065                                         | 52                                                       | 880                        | 500/D              |
|                    | 16                            | 16              | Non-compacted     |        |                                    | 0.8                                     | 1.6                                     | 20.5                        | 26.0            | 1.15                                          | 1.15             | 0.0052                                         | 70                                                       | 1300                       | 500/D              |
|                    |                               |                 |                   |        |                                    |                                         |                                         |                             |                 |                                               |                  |                                                |                                                          |                            |                    |

C = Packing in coil  
D = Packing in drum

## 60227 IEC 10

300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



⊕ TIS 11 Part 4-2553

### CABLE STRUCTURE

|                            |                                           |
|----------------------------|-------------------------------------------|
| <b>Conductor</b>           | : Solid or Stranded annealed copper wire  |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)              |
| <b>Core identification</b> | : Blue, Brown, Black, Grey + Green/Yellow |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)          |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)      |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 Volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 4-2553 Table 1                                                          |

### APPLICATION

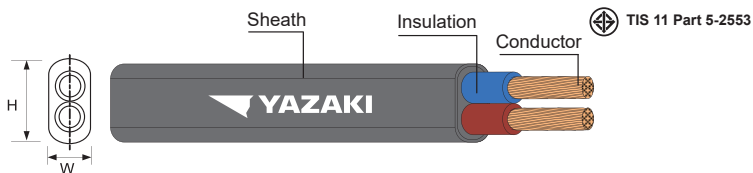
For installation exposed, or in raceway, wet or dry location.

| Number of cores | Nominal cross sectional area |                              | A.C Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|-----------------|------------------------------|------------------------------|-------------------------------|----------------------------|---------------------------|--------------------------|
|                 | Phase<br>(mm <sup>2</sup> )  | Ground<br>(mm <sup>2</sup> ) |                               |                            |                           |                          |
| 4+G             | 1.5                          | 1.5                          | 14.4777                       | 0.3439                     | 0.1081                    | 14.4781                  |
|                 | 1.5                          | 1.5                          | 14.4777                       | 0.3427                     | 0.1077                    | 14.4781                  |
|                 | 2.5                          | 2.5                          | 8.8661                        | 0.3350                     | 0.1052                    | 8.8667                   |
|                 | 2.5                          | 2.5                          | 8.8661                        | 0.3405                     | 0.1070                    | 8.8667                   |
|                 | 4                            | 4                            | 5.5159                        | 0.3135                     | 0.0985                    | 5.5168                   |
|                 | 4                            | 4                            | 5.5159                        | 0.3164                     | 0.0994                    | 5.5168                   |
|                 | 6                            | 6                            | 3.6853                        | 0.3011                     | 0.0946                    | 3.6865                   |
|                 | 10                           | 10                           | 2.1897                        | 0.2943                     | 0.0925                    | 2.1917                   |
|                 | 16                           | 16                           | 1.3761                        | 0.2773                     | 0.0871                    | 1.3789                   |

B

## 60227 IEC 52 VKF

### 300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE



#### CABLE STRUCTURE

|                            |                                      |
|----------------------------|--------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire      |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/D)         |
| <b>Core identification</b> | : Blue, Brown                        |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST5) |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/300 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 300 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 7                                                          |

#### APPLICATION

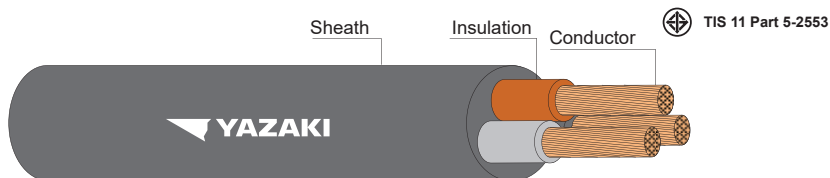
For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area (mm²) | Conductor Type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter average |                    | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous current rating in free air 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|-----------------|------------------------------------|----------------|-----------------------------------|-------------------------------------|--------------------------|--------------------|---------------------------------------------|-----------------------------------------------|--------------------------------------------------------|------------------------------|---------------------|
|                 |                                    |                |                                   |                                     | W x H minimum (mm)       | W x H maximum (mm) |                                             |                                               |                                                        |                              |                     |
| 2               | 0.5                                | Flexible       | 0.5                               | 0.6                                 | 3.0 x 4.9                | 3.7 x 5.9          | 39.0                                        | 0.012                                         | 3                                                      | 26                           | 100/C               |
|                 | 0.75                               | Flexible       | 0.5                               | 0.6                                 | 3.2 x 5.2                | 3.8 x 6.3          | 26.0                                        | 0.010                                         | 6                                                      | 33                           | 100/C               |

C = Packing in Coil

## 60227 IEC 52

### 300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



#### CABLE STRUCTURE

|                              |                                      |
|------------------------------|--------------------------------------|
| <b>Conductor</b>             | : Flexible annealed copper wire      |
| <b>Insulation</b>            | : Polyvinyl chloride (PVC/D)         |
| <b>Core identification</b> : |                                      |
| 2 Cores                      | Blue, Brown                          |
| 3 Cores                      | Brown, Black, Grey                   |
| <b>Sheath</b>                | : Black polyvinyl chloride (PVC/ST5) |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/300 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 300 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 7                                                          |

#### APPLICATION

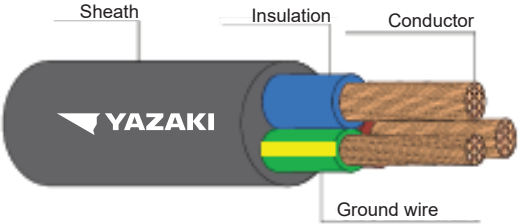
For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |              | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Continuous current rating in free air 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------|--------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        | minimum (mm)             | maximum (mm) |                                                |                                                  |                                                           |                                 |                        |
| 2               | 0.5                                                | Flexible       | 0.5                                  | 0.6                                    | 4.6                      | 5.9          | 39.0                                           | 0.012                                            | 3                                                         | 40                              | 100/C                  |
|                 | 0.75                                               | Flexible       | 0.5                                  | 0.6                                    | 4.9                      | 6.3          | 26.0                                           | 0.010                                            | 6                                                         | 48                              | 100/C                  |
| 3               | 0.5                                                | Flexible       | 0.5                                  | 0.6                                    | 4.9                      | 6.3          | 39.0                                           | 0.012                                            | 3                                                         | 47                              | 100/C                  |
|                 | 0.75                                               | Flexible       | 0.5                                  | 0.6                                    | 5.2                      | 6.7          | 26.0                                           | 0.010                                            | 6                                                         | 60                              | 100/C                  |

B

# 60227 IEC 52

## 300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATHED WITH GROUND, ROUND TYPE



 TIS 11 Part 5-2553

### CABLE STRUCTURE

- Conductor** : Flexible annealed copper wire
- Insulation** : Polyvinyl chloride (PVC/D)
- Core identification** : Blue, Brown + Green/Yellow
- Sheath** : Black polyvinyl chloride (PVC/ST5)

### TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 300/300 Volts
- Rated voltage** : 300 Volts between Line to Earth  
: 300 Volts between Line to Line
- AC Testing voltage** : 2,000 volts
- Reference standard** : TIS 11 Part 5-2553 Table 7

### APPLICATION

For household appliances, electrical equipment and electrical illumination.

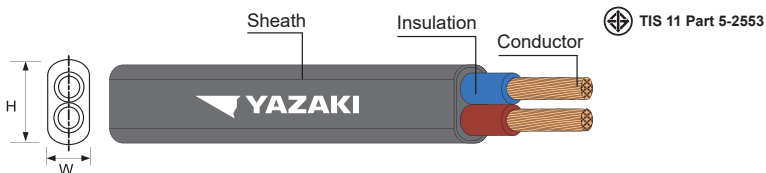
| Number of cores | Conductor                  |              |                   |        | Insulation thickness nominal | Sheath thickness nominal | Overall diameter average |      | Conductor resistance at 20°C maximum |              | Insulation resistance at 70°C minimum | Continuous current rating in free air at (40°C) maximum | Cable weight approx. | Standard Length |
|-----------------|----------------------------|--------------|-------------------|--------|------------------------------|--------------------------|--------------------------|------|--------------------------------------|--------------|---------------------------------------|---------------------------------------------------------|----------------------|-----------------|
|                 | Nominal cross section area |              | Type of Conductor |        |                              |                          |                          |      |                                      |              |                                       |                                                         |                      |                 |
|                 | Phase (mm²)                | Ground (mm²) | Phase             | Ground |                              |                          | (mm)                     | (mm) | Minimum (mm)                         | Maximum (mm) |                                       |                                                         |                      |                 |
| 2+G             | 0.5                        | 0.5          | Flexible          |        | 0.5                          | 0.6                      | 4.9                      | 6.3  | 39.0                                 | 39.0         | 0.012                                 | 3                                                       | 50                   | 100/C           |
|                 | 0.75                       | 0.75         | Flexible          |        | 0.5                          | 0.6                      | 5.2                      | 6.7  | 26.0                                 | 26.0         | 0.010                                 | 6                                                       | 60                   | 100/C           |

C = Packing in coil

B

## 60227 IEC 53 VKF

### 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE



#### CABLE STRUCTURE

|                            |                                      |
|----------------------------|--------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire      |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/D)         |
| <b>Core identification</b> | : Blue, Brown                        |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST5) |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 9                                                          |

#### APPLICATION

For household appliances, electrical equipment and electrical illumination.

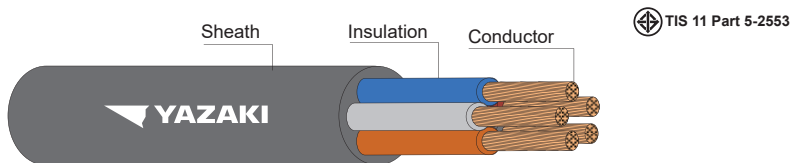
| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |                       | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------|-----------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        | W x H minimum<br>(mm)    | W x H maximum<br>(mm) |                                                |                                                  |                                                           |                                 |                        |
| 2               | 0.75                                               | Flexible       | 0.6                                  | 0.8                                    | 3.7 x 6.0                | 4.5 x 7.2             | 26.0                                           | 0.011                                            | 6                                                         | 43                              | 100/C                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 0.8                                    | 3.9 x 6.2                | 4.7 x 7.5             | 19.5                                           | 0.010                                            | 10                                                        | 50                              | 100/C                  |

C = Packing in Coil

B

## 60227 IEC 53

### 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



#### CABLE STRUCTURE

|                              |                                        |
|------------------------------|----------------------------------------|
| <b>Conductor</b>             | : Flexible annealed copper wire        |
| <b>Insulation</b>            | : Polyvinyl chloride (PVC/D)           |
| <b>Core identification :</b> |                                        |
| 2 Cores                      | Blue, Brown                            |
| 3 Cores                      | Brown, Black, Grey                     |
| 4 Cores                      | Blue, Brown, Black and Grey            |
| 5 Cores                      | Blue, Brown, Black, Grey, Green/Yellow |
| <b>Sheath</b>                | : Black polyvinyl chloride (PVC/ST5)   |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 9                                                          |

#### APPLICATION

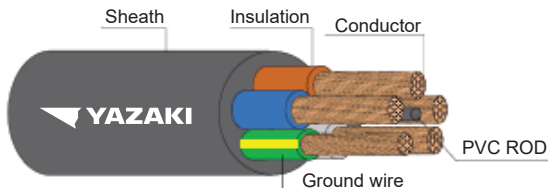
For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter average |              | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ·km) | Continuous current rating in free air 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|-----------------|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------|--------------------------|--------------|---------------------------------------------|-----------------------------------------------|--------------------------------------------------------|------------------------------|---------------------|
|                 |                                                 |                |                                   |                                     | minimum (mm)             | maximum (mm) |                                             |                                               |                                                        |                              |                     |
| 2               | 0.75                                            | Flexible       | 0.6                               | 0.8                                 | 5.7                      | 7.2          | 26.0                                        | 0.011                                         | 6                                                      | 60                           | 100/C               |
|                 | 1                                               | Flexible       | 0.6                               | 0.8                                 | 5.9                      | 7.5          | 19.5                                        | 0.010                                         | 10                                                     | 70                           | 100/C               |
|                 | 1.5                                             | Flexible       | 0.7                               | 0.8                                 | 6.8                      | 8.6          | 13.3                                        | 0.010                                         | 16                                                     | 90                           | 100/C               |
|                 | 2.5                                             | Flexible       | 0.8                               | 1.0                                 | 8.4                      | 10.6         | 7.98                                        | 0.009                                         | 25                                                     | 140                          | 100/C               |
| 3               | 0.75                                            | Flexible       | 0.6                               | 0.8                                 | 6.0                      | 7.6          | 26.0                                        | 0.011                                         | 6                                                      | 70                           | 100/C               |
|                 | 1                                               | Flexible       | 0.6                               | 0.8                                 | 6.3                      | 8.0          | 19.5                                        | 0.010                                         | 10                                                     | 80                           | 100/C               |
|                 | 1.5                                             | Flexible       | 0.7                               | 0.9                                 | 7.4                      | 9.4          | 13.3                                        | 0.010                                         | 16                                                     | 110                          | 100/C               |
|                 | 2.5                                             | Flexible       | 0.8                               | 1.1                                 | 9.2                      | 11.4         | 7.98                                        | 0.009                                         | 20                                                     | 180                          | 100/C               |
| 4               | 0.75                                            | Flexible       | 0.6                               | 0.8                                 | 6.6                      | 8.3          | 26.0                                        | 0.011                                         | 6                                                      | 85                           | 100/C               |
|                 | 1                                               | Flexible       | 0.6                               | 0.9                                 | 7.1                      | 9.0          | 19.5                                        | 0.010                                         | 10                                                     | 100                          | 100/C               |
|                 | 1.5                                             | Flexible       | 0.7                               | 1.0                                 | 8.4                      | 10.5         | 13.3                                        | 0.010                                         | 16                                                     | 140                          | 100/C               |
|                 | 2.5                                             | Flexible       | 0.8                               | 1.1                                 | 10.1                     | 12.5         | 7.98                                        | 0.009                                         | 20                                                     | 210                          | 100/C               |
| 5               | 0.75                                            | Flexible       | 0.6                               | 0.9                                 | 7.4                      | 9.3          | 26.0                                        | 0.011                                         | 6                                                      | 100                          | 100/C               |
|                 | 1                                               | Flexible       | 0.6                               | 0.9                                 | 7.8                      | 9.8          | 19.5                                        | 0.010                                         | 10                                                     | 120                          | 100/C               |
|                 | 1.5                                             | Flexible       | 0.7                               | 1.1                                 | 9.3                      | 11.6         | 13.3                                        | 0.010                                         | 16                                                     | 170                          | 100/C               |
|                 | 2.5                                             | Flexible       | 0.8                               | 1.2                                 | 11.2                     | 13.9         | 7.98                                        | 0.009                                         | 20                                                     | 260                          | 100/C               |

C = Packing in Coil

## 60227 IEC 53

### 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



TIS 11 Part 5-2553

#### CABLE STRUCTURE

|                            |                                                       |
|----------------------------|-------------------------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire                       |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/D)                          |
| <b>Core identification</b> |                                                       |
|                            | 2 Cores + G : Blue, Brown + Green/Yellow              |
|                            | 3 Cores + G : Brown, Black, Grey + Green/Yellow       |
|                            | 4 Cores + G : Blue, Brown, Black, Grey + Green/Yellow |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST5)                  |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 9                                                          |

#### APPLICATION

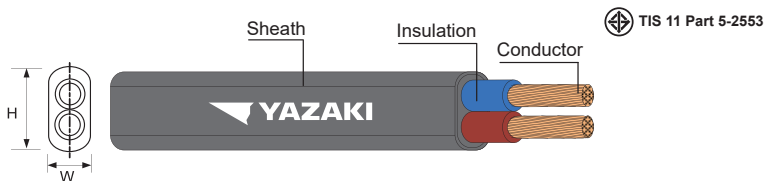
For household appliances, electrical equipment and electrical illumination.

| Number of cores | Conductor                  |              |                   |        | Insulation thickness nominal | Sheath thickness nominal | Overall diameter average |         | Conductor resistance at 20°C maximum |        | Insulation resistance at 70°C minimum | Continuous current rating in free air at (40°C) maximum | Cable weight approx. | Standard length |
|-----------------|----------------------------|--------------|-------------------|--------|------------------------------|--------------------------|--------------------------|---------|--------------------------------------|--------|---------------------------------------|---------------------------------------------------------|----------------------|-----------------|
|                 | Nominal cross section area |              | Type of Conductor |        |                              |                          | Minimum                  | Maximum | Phase                                | Ground |                                       |                                                         |                      |                 |
|                 | Phase (mm²)                | Ground (mm²) | Phase             | Ground |                              |                          |                          |         |                                      |        |                                       |                                                         |                      |                 |
| 2+G             | 0.75                       | 0.75         | Flexible          |        | 0.6                          | 0.8                      | 6.0                      | 7.6     | 26.0                                 | 26.0   | 0.011                                 | 6                                                       | 70                   | 100/C           |
|                 | 1                          | 1            | Flexible          |        | 0.6                          | 0.8                      | 6.3                      | 8.0     | 19.5                                 | 19.5   | 0.010                                 | 10                                                      | 80                   | 100/C           |
|                 | 1.5                        | 1.5          | Flexible          |        | 0.7                          | 0.9                      | 7.4                      | 9.4     | 13.3                                 | 13.3   | 0.010                                 | 16                                                      | 120                  | 100/C           |
|                 | 2.5                        | 2.5          | Flexible          |        | 0.8                          | 1.1                      | 9.2                      | 11.4    | 7.98                                 | 7.98   | 0.009                                 | 25                                                      | 180                  | 100/C           |
| 3+G             | 0.75                       | 0.75         | Flexible          |        | 0.6                          | 0.8                      | 6.6                      | 8.3     | 26.0                                 | 26.0   | 0.011                                 | 6                                                       | 85                   | 100/C           |
|                 | 1                          | 1            | Flexible          |        | 0.6                          | 0.9                      | 7.1                      | 9.0     | 19.5                                 | 19.5   | 0.010                                 | 10                                                      | 100                  | 100/C           |
|                 | 1.5                        | 1.5          | Flexible          |        | 0.7                          | 1.0                      | 8.4                      | 10.5    | 13.3                                 | 13.3   | 0.010                                 | 16                                                      | 140                  | 100/C           |
|                 | 2.5                        | 2.5          | Flexible          |        | 0.8                          | 1.1                      | 10.1                     | 12.5    | 7.98                                 | 7.98   | 0.009                                 | 20                                                      | 220                  | 100/C           |
| 4+G             | 0.75                       | 0.75         | Flexible          |        | 0.6                          | 0.9                      | 7.4                      | 9.3     | 26.0                                 | 26.0   | 0.011                                 | 6                                                       | 100                  | 100/C           |
|                 | 1                          | 1            | Flexible          |        | 0.6                          | 0.9                      | 7.8                      | 9.8     | 19.5                                 | 19.5   | 0.010                                 | 10                                                      | 120                  | 100/C           |
|                 | 1.5                        | 1.5          | Flexible          |        | 0.7                          | 1.1                      | 9.3                      | 11.6    | 13.3                                 | 13.3   | 0.010                                 | 16                                                      | 180                  | 100/C           |
|                 | 2.5                        | 2.5          | Flexible          |        | 0.8                          | 1.2                      | 11.2                     | 13.9    | 7.98                                 | 7.98   | 0.009                                 | 20                                                      | 260                  | 100/C           |

C = Packing in Coil

## 60227 IEC 56 HVKF

### 300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE



#### CABLE STRUCTURE

|                            |                                       |
|----------------------------|---------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire       |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/E)          |
| <b>Core identification</b> | : Blue, Brown                         |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST10) |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 300/300 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 300 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 11                                                         |

#### APPLICATION

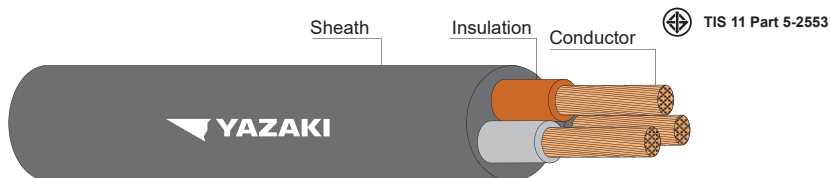
For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |                       | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 90°C minimum<br>(MΩ·km) | Continuous current rating in free air 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------|-----------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        | W x H minimum<br>(mm)    | W x H maximum<br>(mm) |                                                |                                                  |                                                           |                                 |                        |
| 2               | 0.50                                               | Flexible       | 0.5                                  | 0.6                                    | 3.0 x 4.9                | 3.7 x 5.9             | 39.0                                           | 0.012                                            | 3                                                         | 28                              | 100/C                  |
|                 | 0.75                                               | Flexible       | 0.5                                  | 0.6                                    | 3.2 x 5.2                | 3.8 x 6.3             | 26.0                                           | 0.010                                            | 6                                                         | 35                              | 100/C                  |

C = Packing in Coil

## 60227 IEC 56

### 300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



#### CABLE STRUCTURE

|                              |                                       |
|------------------------------|---------------------------------------|
| <b>Conductor</b>             | : Flexible annealed copper wire       |
| <b>Insulation</b>            | : Polyvinyl chloride (PVC/E)          |
| <b>Core identification :</b> |                                       |
| 2 Cores                      | Blue, Brown                           |
| 3 Cores                      | Brown, Black, Grey                    |
| <b>Sheath</b>                | : Black polyvinyl chloride (PVC/ST10) |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 300/300 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 300 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 11                                                         |

#### APPLICATION

For household appliances, electrical equipment and electrical illumination.

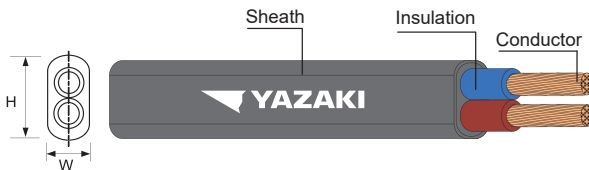
| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |                 | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 90°C minimum<br>(MΩ·km) | Continuous current rating in free air 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------|-----------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        | minimum<br>(mm)          | maximum<br>(mm) |                                                |                                                  |                                                           |                                 |                        |
| 2               | 0.5                                                | Flexible       | 0.5                                  | 0.6                                    | 4.6                      | 5.9             | 39.0                                           | 0.012                                            | 3                                                         | 38                              | 100/C                  |
|                 | 0.75                                               | Flexible       | 0.5                                  | 0.6                                    | 4.9                      | 6.3             | 26.0                                           | 0.010                                            | 6                                                         | 46                              | 100/C                  |
| 3               | 0.5                                                | Flexible       | 0.5                                  | 0.6                                    | 4.9                      | 6.3             | 39.0                                           | 0.012                                            | 3                                                         | 44                              | 100/C                  |
|                 | 0.75                                               | Flexible       | 0.5                                  | 0.6                                    | 5.2                      | 6.7             | 26.0                                           | 0.010                                            | 6                                                         | 55                              | 100/C                  |

C = Packing in Coil

## 60227 IEC 57 HVKF

300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE

TIS 11 Part 5-2553



### CABLE STRUCTURE

|                            |                                       |
|----------------------------|---------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire       |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/E)          |
| <b>Core identification</b> | : Blue, Brown                         |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST10) |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 13                                                         |

### APPLICATION

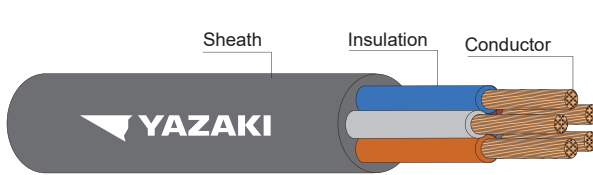
For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter average |                    | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 90°C minimum (MΩ-km) | Continuous current rating in free air 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|-----------------|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------|--------------------------|--------------------|---------------------------------------------|-----------------------------------------------|--------------------------------------------------------|------------------------------|---------------------|
|                 |                                                 |                |                                   |                                     | W x H minimum (mm)       | W x H maximum (mm) |                                             |                                               |                                                        |                              |                     |
| 2               | 0.75                                            | Flexible       | 0.6                               | 0.8                                 | 3.7 x 6.0                | 4.5 x 7.2          | 26.0                                        | 0.011                                         | 6                                                      | 42                           | 100/C               |
|                 | 1                                               | Flexible       | 0.6                               | 0.8                                 | 3.9 x 6.2                | 4.7 x 7.5          | 19.5                                        | 0.010                                         | 10                                                     | 50                           | 100/C               |

C = Packing in Coil

## 60227 IEC 57

### 300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE



 TIS 11 Part 5-2553

#### CABLE STRUCTURE

|                              |                                        |
|------------------------------|----------------------------------------|
| <b>Conductor</b>             | : Flexible annealed copper wire        |
| <b>Insulation</b>            | : Polyvinyl chloride (PVC/E)           |
| <b>Core identification</b> : |                                        |
| 2 Cores                      | Blue, Brown                            |
| 3 Cores                      | Brown, Black, Grey                     |
| 4 Cores                      | Blue, Brown, Black, Grey               |
| 5 Cores                      | Blue, Brown, Black, Grey, Green/Yellow |
| <b>Sheath</b>                | : Black polyvinyl chloride (PVC/ST10)  |

#### TECHNICAL DATA

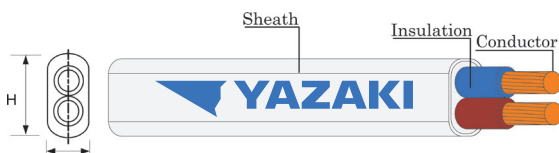
|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 5-2553 Table 13                                                         |

#### APPLICATION

For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |                 | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 90°C minimum<br>(MΩ-km) | Continuous current rating in free air 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------|-----------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        | minimum<br>(mm)          | maximum<br>(mm) |                                                |                                                  |                                                           |                                 |                        |
| 2               | 0.75                                               | Flexible       | 0.6                                  | 0.8                                    | 5.7                      | 7.2             | 26.0                                           | 0.011                                            | 6                                                         | 54                              | 100/C                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 0.8                                    | 5.9                      | 7.5             | 19.5                                           | 0.010                                            | 10                                                        | 64                              | 100/C                  |
|                 | 1.5                                                | Flexible       | 0.7                                  | 0.8                                    | 6.8                      | 8.6             | 13.3                                           | 0.010                                            | 16                                                        | 82                              | 100/C                  |
| 3               | 2.5                                                | Flexible       | 0.8                                  | 1.0                                    | 8.4                      | 10.6            | 7.98                                           | 0.009                                            | 25                                                        | 128                             | 100/C                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 0.8                                    | 6.0                      | 7.6             | 26.0                                           | 0.011                                            | 6                                                         | 64                              | 100/C                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 0.8                                    | 6.3                      | 8.0             | 19.5                                           | 0.010                                            | 10                                                        | 76                              | 100/C                  |
| 4               | 1.5                                                | Flexible       | 0.7                                  | 0.9                                    | 7.4                      | 9.4             | 13.3                                           | 0.010                                            | 16                                                        | 102                             | 100/C                  |
|                 | 2.5                                                | Flexible       | 0.8                                  | 1.0                                    | 9.2                      | 11.4            | 7.98                                           | 0.009                                            | 20                                                        | 159                             | 100/C                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 0.8                                    | 6.6                      | 8.3             | 26.0                                           | 0.011                                            | 16                                                        | 78                              | 100/C                  |
| 5               | 1                                                  | Flexible       | 0.6                                  | 0.9                                    | 7.1                      | 9.0             | 19.5                                           | 0.010                                            | 10                                                        | 96                              | 100/C                  |
|                 | 1.5                                                | Flexible       | 0.7                                  | 1.0                                    | 8.4                      | 10.5            | 13.3                                           | 0.010                                            | 16                                                        | 128                             | 100/C                  |
|                 | 2.5                                                | Flexible       | 0.8                                  | 1.1                                    | 10.1                     | 12.5            | 7.98                                           | 0.009                                            | 20                                                        | 195                             | 100/C                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 0.9                                    | 7.4                      | 9.3             | 26.0                                           | 0.011                                            | 6                                                         | 96                              | 100/C                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 0.9                                    | 7.8                      | 9.8             | 19.5                                           | 0.010                                            | 10                                                        | 114                             | 100/C                  |
|                 | 1.5                                                | Flexible       | 0.7                                  | 1.1                                    | 9.3                      | 11.6            | 13.3                                           | 0.010                                            | 16                                                        | 158                             | 100/C                  |
|                 | 2.5                                                | Flexible       | 0.8                                  | 1.2                                    | 11.2                     | 13.9            | 7.98                                           | 0.009                                            | 20                                                        | 238                             | 100/C                  |

C = Packing in Coil

**300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE**

 TIS 11 Part 101-2559

**CABLE STRUCTURE**

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown                            |
| <b>Sheath</b>              | : White polyvinyl chloride (PVC/ST4)     |

**TECHNICAL DATA**

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 300/500 Volts |
| <b>Rated voltage</b>      | : 300 Volts between Line to Earth<br>: 500 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,000 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 1                                                        |

**APPLICATION**

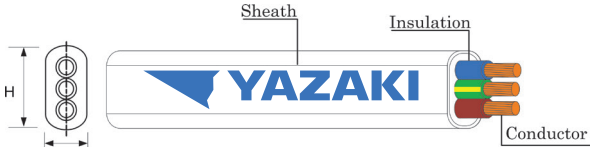
For surface or above ceiling wiring or direct embedded in plaster.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter average |                       | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------|-----------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|---------------------------------|------------------------|
|                 |                                                    |                |                                      |                                        | W x H minimum<br>(mm)    | W x H maximum<br>(mm) |                                                |                                                  |                                                           |                                 |                        |
| 2               | 1                                                  | Solid          | 0.6                                  | 0.9                                    | 4.0 x 6.2                | 4.7 x 7.4             | 18.1                                           | 0.0110                                           | 14                                                        | 55                              | 100/C                  |
|                 | 1.5                                                | Solid          | 0.7                                  | 0.9                                    | 4.4 x 7.0                | 5.4 x 8.4             | 12.1                                           | 0.0110                                           | 17                                                        | 70                              | 100/C                  |
|                 | 2.5                                                | Solid          | 0.8                                  | 1.0                                    | 5.2 x 8.4                | 6.2 x 9.8             | 7.41                                           | 0.0100                                           | 23                                                        | 100                             | 100/C                  |
|                 | 4                                                  | Non-compacted  | 0.8                                  | 1.1                                    | 5.6 x 9.6                | 7.2 x 11.5            | 4.61                                           | 0.0077                                           | 32                                                        | 150                             | 100/C                  |
|                 | 6                                                  | Non-compacted  | 0.8                                  | 1.1                                    | 6.4 x 10.5               | 8.0 x 13.0            | 3.08                                           | 0.0065                                           | 41                                                        | 200                             | 100/C                  |
|                 | 10                                                 | Non-compacted  | 1.0                                  | 1.2                                    | 7.8 x 13.0               | 9.6 x 16.0            | 1.83                                           | 0.0065                                           | 56                                                        | 320                             | 100/C                  |
|                 | 16                                                 | Non-compacted  | 1.0                                  | 1.3                                    | 9.0 x 15.5               | 11.0 x 18.5           | 1.15                                           | 0.0052                                           | 74                                                        | 460                             | 100/C                  |

C = Packing in Coil

**300/500 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, FLAT TYPE**

 TIS 11 Part 101-2559



**CABLE STRUCTURE**

**Conductor** : Solid or stranded annealed copper wire  
**Insulation** : Polyvinyl chloride (PVC/C)  
**Core identification** : Blue, Brown + Green/Yellow  
**Sheath** : White polyvinyl chloride (PVC/ST4)

**TECHNICAL DATA**

**Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 300/500 Volts  
**Rated voltage** : 300 Volts between Line to Earth  
: 500 Volts between Line to Line  
**AC Testing voltage** : 2,000 volts  
**Reference standard** : TIS 11 Part 101-2559 Table 1

**APPLICATION**

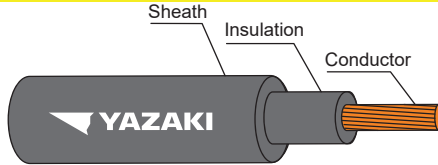
For surface or above ceiling wiring or direct embedded in plaster.

| Number of cores | Nominal cross sectional area |              | Conductor Type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter average |                    | Conductor resistance at 20°C maximum |               | Insulation resistance at 70°C minimum (MΩ·km) | Continuous current rating in free air 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|-----------------|------------------------------|--------------|----------------|-----------------------------------|-------------------------------------|--------------------------|--------------------|--------------------------------------|---------------|-----------------------------------------------|--------------------------------------------------------|------------------------------|---------------------|
|                 | Phase (mm²)                  | Ground (mm²) |                |                                   |                                     | W x H minimum (mm)       | W x H maximum (mm) | Phase (Ω/km)                         | Ground (Ω/km) |                                               |                                                        |                              |                     |
| 2+G             | 1                            | 1            | Solid          | 0.6                               | 0.9                                 | 4.0 x 8.4                | 4.7 x 9.8          | 18.1                                 | 18.1          | 0.0110                                        | 14                                                     | 70                           | 100/C               |
|                 | 1.5                          | 1.5          | Solid          | 0.7                               | 0.9                                 | 4.4 x 9.8                | 5.4 x 11.5         | 12.1                                 | 12.1          | 0.0110                                        | 17                                                     | 93                           | 100/C               |
|                 | 2.5                          | 2.5          | Solid          | 0.8                               | 1.0                                 | 5.2 x 11.5               | 6.2 x 13.5         | 7.41                                 | 7.41          | 0.0100                                        | 23                                                     | 141                          | 100/C               |
|                 | 4                            | 4            | Non-compacted  | 0.8                               | 1.1                                 | 5.8 x 13.4               | 7.4 x 16.5         | 4.61                                 | 4.61          | 0.0077                                        | 32                                                     | 213                          | 100/C               |
|                 | 6                            | 6            | Non-compacted  | 0.8                               | 1.1                                 | 6.4 x 15.0               | 8.0 x 18.0         | 3.08                                 | 3.08          | 0.0065                                        | 41                                                     | 286                          | 100/C               |
|                 | 10                           | 10           | Non-compacted  | 1.0                               | 1.2                                 | 7.8 x 19.0               | 9.6 x 22.5         | 1.83                                 | 1.83          | 0.0065                                        | 56                                                     | 457                          | 100/C               |
|                 | 16                           | 16           | Non-compacted  | 1.0                               | 1.3                                 | 9.0 x 22.0               | 11.0 x 26.5        | 1.15                                 | 1.15          | 0.0052                                        | 74                                                     | 656                          | 500/D               |

C = Packing in Coil  
D = Packing in drum

## NYY or YK NYY

450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND SHEATHED, SINGLE CORE



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Black                                  |
| <b>Sheath</b>              | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 3                                                        |

### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

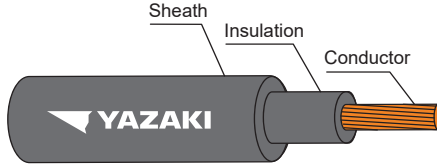
| Cable name | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor Type<br>(mm) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter maximum<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MQ-km) | Continuous current rating in free air at 40°C maximum (A) |          |         | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|------------|--------------------------------------------------------|------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|----------|---------|------------------------------------------------------------|---------------------------------|------------------------|
|            |                                                        |                        |                                      |                                  |                                  |                                                |                                                  | Spaced                                                    | Touching | Trefoil |                                                            |                                 |                        |
| NY Y       | 1×1                                                    | Solid                  | 1.5                                  | 1.8                              | 8.6                              | 18.1                                           | 0.0207                                           | 19                                                        | 16       | 15      | 21                                                         | 86                              | 100/C                  |
|            | 1×1                                                    | Non-compacted          | 1.5                                  | 1.8                              | 8.8                              | 18.1                                           | 0.0200                                           | 19                                                        | 16       | 15      | 21                                                         | 88                              | 100/C                  |
|            | 1×1.5                                                  | Solid                  | 1.5                                  | 1.8                              | 9.0                              | 12.1                                           | 0.0184                                           | 24                                                        | 19       | 19      | 26                                                         | 93                              | 100/C                  |
|            | 1×1.5                                                  | Non-compacted          | 1.5                                  | 1.8                              | 9.2                              | 12.1                                           | 0.0175                                           | 24                                                        | 19       | 19      | 26                                                         | 98                              | 100/C                  |
|            | 1×2.5                                                  | Solid                  | 1.5                                  | 1.8                              | 9.4                              | 7.41                                           | 0.0157                                           | 32                                                        | 24       | 26      | 35                                                         | 109                             | 100/C                  |
|            | 1×2.5                                                  | Non-compacted          | 1.5                                  | 1.8                              | 9.8                              | 7.41                                           | 0.0146                                           | 32                                                        | 24       | 26      | 35                                                         | 115                             | 100/C                  |
|            | 1×4                                                    | Solid                  | 1.5                                  | 1.8                              | 10.0                             | 4.61                                           | 0.0135                                           | 42                                                        | 33       | 34      | 45                                                         | 130                             | 100/C                  |
| YK NYY     | 1×4                                                    | Non-compacted          | 1.5                                  | 1.8                              | 10.5                             | 4.61                                           | 0.0124                                           | 42                                                        | 33       | 34      | 45                                                         | 137                             | 100/C                  |
|            | 1×6                                                    | Non-compacted          | 1.5                                  | 1.8                              | 11.0                             | 3.08                                           | 0.0107                                           | 54                                                        | 42       | 43      | 57                                                         | 159                             | 1000/D                 |
|            | 1×10                                                   | Non-compacted          | 1.5                                  | 1.8                              | 12.0                             | 1.83                                           | 0.0088                                           | 73                                                        | 57       | 59      | 76                                                         | 210                             | 1000/D                 |
|            | 1×16                                                   | Compacted              | 1.5                                  | 1.8                              | 13.0                             | 1.15                                           | 0.0074                                           | 96                                                        | 76       | 78      | 99                                                         | 273                             | 1000/D                 |
|            | 1×25                                                   | Compacted              | 1.5                                  | 1.8                              | 14.5                             | 0.727                                          | 0.0061                                           | 127                                                       | 99       | 96      | 128                                                        | 372                             | 1000/D                 |
|            | 1×35                                                   | Compacted              | 1.5                                  | 1.8                              | 16.0                             | 0.524                                          | 0.0053                                           | 157                                                       | 124      | 119     | 154                                                        | 472                             | 1000/D                 |
|            | 1×50                                                   | Compacted              | 1.5                                  | 1.8                              | 17.0                             | 0.387                                          | 0.0046                                           | 191                                                       | 151      | 145     | 181                                                        | 600                             | 1000/D                 |
|            | 1×70                                                   | Compacted              | 1.5                                  | 1.8                              | 19.0                             | 0.268                                          | 0.0039                                           | 244                                                       | 196      | 188     | 223                                                        | 800                             | 1000/D                 |
|            | 1×95                                                   | Compacted              | 1.7                                  | 1.8                              | 21.5                             | 0.193                                          | 0.0038                                           | 297                                                       | 239      | 230     | 267                                                        | 1074                            | 1000/D                 |
|            | 1×120                                                  | Compacted              | 1.7                                  | 1.8                              | 23.0                             | 0.153                                          | 0.0034                                           | 345                                                       | 279      | 268     | 304                                                        | 1314                            | 1000/D                 |
|            | 1×150                                                  | Compacted              | 1.9                                  | 2.0                              | 26.0                             | 0.124                                          | 0.0034                                           | 397                                                       | 324      | 310     | 342                                                        | 1609                            | 1000/D                 |
| NY Y       | 1×185                                                  | Compacted              | 2.1                                  | 2.0                              | 28.0                             | 0.0991                                         | 0.0034                                           | 453                                                       | 371      | 356     | 386                                                        | 1991                            | 1000/D                 |
|            | 1×240                                                  | Compacted              | 2.3                                  | 2.2                              | 31.5                             | 0.0754                                         | 0.0033                                           | 535                                                       | 441      | 422     | 448                                                        | 2576                            | 1000/D                 |
|            | 1×300                                                  | Non-compacted          | 2.5                                  | 2.2                              | 35.0                             | 0.0601                                         | 0.0032                                           | 617                                                       | 511      | 488     | 507                                                        | 3420                            | 500/D                  |
|            | 1×400                                                  | Non-compacted          | 2.7                                  | 2.2                              | 38.5                             | 0.0470                                         | 0.0030                                           | 741                                                       | 599      | 571     | 577                                                        | 4301                            | 500/D                  |
|            | 1×500                                                  | Non-compacted          | 3.1                                  | 2.4                              | 43.0                             | 0.0366                                         | 0.0031                                           | 854                                                       | 686      | 652     | 654                                                        | 5422                            | 500/D                  |

C = Packing in Coil  
D = Packing in drum

**Remark :** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

## NYN or YK NYN

450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND SHEATHED, SINGLE CORE



⊗ TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Black                                  |
| <b>Sheath</b>              | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 3                                                        |

### APPLICATION

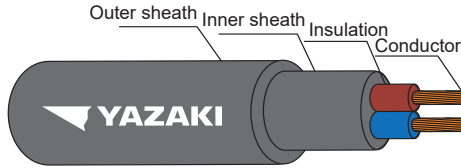
For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Cable name | Number<br>x Size of<br>conductor<br><br>(No. x mm <sup>2</sup> ) | Conductor<br>Type | A.C. Resistance<br>R<br>(Ω/km) |          |         | Inductance<br>L<br>(mH/km) |          |         | Reactance<br>XL<br>(Ω/km) |          |         | Impedance<br>Z<br>(Ω/km) |          |         |
|------------|------------------------------------------------------------------|-------------------|--------------------------------|----------|---------|----------------------------|----------|---------|---------------------------|----------|---------|--------------------------|----------|---------|
|            |                                                                  |                   | Spaced                         | Touching | Trefoil | Spaced                     | Touching | Trefoil | Spaced                    | Touching | Trefoil | Spaced                   | Touching | Trefoil |
| NYN        | 1×1                                                              | Solid             | 21.6567                        | 21.6567  | 21.6567 | 0.7840                     | 0.6454   | 0.5991  | 0.2463                    | 0.2028   | 0.1882  | 21.6581                  | 21.6576  | 21.6575 |
|            | 1×1                                                              | Non-compact       | 21.6567                        | 21.6567  | 21.6567 | 0.7740                     | 0.6353   | 0.5891  | 0.2432                    | 0.1996   | 0.1851  | 21.6581                  | 21.6576  | 21.6575 |
|            | 1×1.5                                                            | Solid             | 14.4777                        | 14.4777  | 14.4777 | 0.7485                     | 0.6099   | 0.5637  | 0.2351                    | 0.1916   | 0.1771  | 14.4796                  | 14.4790  | 14.4788 |
|            | 1×1.5                                                            | Non-compact       | 14.4777                        | 14.4777  | 14.4777 | 0.7388                     | 0.6001   | 0.5539  | 0.2321                    | 0.1885   | 0.1740  | 14.4796                  | 14.4789  | 14.4787 |
|            | 1×2.5                                                            | Solid             | 8.8661                         | 8.8661   | 8.8661  | 0.7063                     | 0.5677   | 0.5214  | 0.2219                    | 0.1783   | 0.1638  | 8.8689                   | 8.8679   | 8.8676  |
|            | 1×2.5                                                            | Non-compact       | 8.8661                         | 8.8661   | 8.8661  | 0.7025                     | 0.5639   | 0.5176  | 0.2207                    | 0.1772   | 0.1626  | 8.8688                   | 8.8679   | 8.8676  |
|            | 1×4                                                              | Solid             | 5.5159                         | 5.5159   | 5.5159  | 0.6698                     | 0.5312   | 0.4850  | 0.2104                    | 0.1669   | 0.1524  | 5.5199                   | 5.5184   | 5.5180  |
|            | 1×4                                                              | Non-compact       | 5.5159                         | 5.5159   | 5.5159  | 0.6649                     | 0.5263   | 0.4801  | 0.2089                    | 0.1653   | 0.1508  | 5.5199                   | 5.5184   | 5.5180  |
| YK NYN     | 1×6                                                              | Non-compact       | 3.6852                         | 3.6852   | 3.6852  | 0.6360                     | 0.4974   | 0.4512  | 0.1998                    | 0.1563   | 0.1417  | 3.6906                   | 3.6885   | 3.6879  |
|            | 1×10                                                             | Non-compact       | 2.1896                         | 2.1896   | 2.1896  | 0.5999                     | 0.4612   | 0.4150  | 0.1885                    | 0.1449   | 0.1304  | 2.1977                   | 2.1944   | 2.1935  |
|            | 1×16                                                             | Compacted         | 1.3760                         | 1.3761   | 1.3761  | 0.5702                     | 0.4315   | 0.3853  | 0.1791                    | 0.1356   | 0.1210  | 1.3876                   | 1.3827   | 1.3814  |
|            | 1×25                                                             | Compacted         | 0.8700                         | 0.8700   | 0.8700  | 0.5450                     | 0.4064   | 0.3602  | 0.1712                    | 0.1277   | 0.1132  | 0.8866                   | 0.8793   | 0.8773  |
|            | 1×35                                                             | Compacted         | 0.6271                         | 0.6272   | 0.6272  | 0.5175                     | 0.3789   | 0.3327  | 0.1626                    | 0.1190   | 0.1045  | 0.6478                   | 0.6384   | 0.6358  |
|            | 1×50                                                             | Compacted         | 0.4632                         | 0.4633   | 0.4634  | 0.5023                     | 0.3637   | 0.3175  | 0.1578                    | 0.1143   | 0.0997  | 0.4894                   | 0.4772   | 0.4740  |
|            | 1×70                                                             | Compacted         | 0.3210                         | 0.3211   | 0.3212  | 0.4862                     | 0.3476   | 0.3014  | 0.1527                    | 0.1092   | 0.0947  | 0.3555                   | 0.3391   | 0.3348  |
|            | 1×95                                                             | Compacted         | 0.2313                         | 0.2315   | 0.2317  | 0.4772                     | 0.3386   | 0.2923  | 0.1499                    | 0.1064   | 0.0918  | 0.2757                   | 0.2548   | 0.2492  |
|            | 1×120                                                            | Compacted         | 0.1836                         | 0.1838   | 0.1840  | 0.4664                     | 0.3278   | 0.2816  | 0.1465                    | 0.1030   | 0.0885  | 0.2349                   | 0.2107   | 0.2020  |
|            | 1×150                                                            | Compacted         | 0.1490                         | 0.1493   | 0.1496  | 0.4663                     | 0.3276   | 0.2814  | 0.1465                    | 0.1029   | 0.0884  | 0.2090                   | 0.1814   | 0.1737  |
|            | 1×185                                                            | Compacted         | 0.1194                         | 0.1198   | 0.1201  | 0.4622                     | 0.3235   | 0.2773  | 0.1452                    | 0.1016   | 0.0871  | 0.1880                   | 0.1571   | 0.1484  |
|            | 1×240                                                            | Compacted         | 0.0913                         | 0.0918   | 0.0922  | 0.4568                     | 0.3182   | 0.2719  | 0.1435                    | 0.1000   | 0.0854  | 0.1701                   | 0.1357   | 0.1257  |
| NYN        | 1×300                                                            | Non-compact       | 0.0733                         | 0.0740   | 0.0745  | 0.4517                     | 0.3131   | 0.2668  | 0.1419                    | 0.0984   | 0.0838  | 0.1597                   | 0.1231   | 0.1121  |
|            | 1×400                                                            | Non-compact       | 0.0580                         | 0.0589   | 0.0596  | 0.4465                     | 0.3079   | 0.2617  | 0.1403                    | 0.0967   | 0.0822  | 0.1518                   | 0.1133   | 0.1015  |
|            | 1×500                                                            | Non-compact       | 0.0460                         | 0.0471   | 0.0480  | 0.4460                     | 0.3074   | 0.2612  | 0.1401                    | 0.0966   | 0.0821  | 0.1475                   | 0.1074   | 0.0951  |

B

## NYY or YK NYY

450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, TWO CORES



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown                            |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

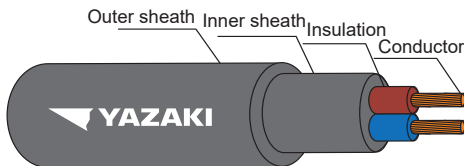
| Cable name | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Outer Sheath thickness nominal<br>(mm) | Overall diameter maximum<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|------------|--------------------------------------------------------|----------------|--------------------------------------|----------------------------------------|----------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------|
| NY Y       | 2×1                                                    | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 12.0                             | 18.1                                           | 0.0141                                           | 15                                                           | 21                                                         | 163                             | 100/C                  |
|            | 2×1                                                    | Non-compacted  | 0.8                                  | 0.8                                    | 1.8                                    | 12.5                             | 18.1                                           | 0.0135                                           | 15                                                           | 21                                                         | 172                             | 100/C                  |
|            | 2×1.5                                                  | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 12.5                             | 12.1                                           | 0.0123                                           | 19                                                           | 27                                                         | 184                             | 100/C                  |
|            | 2×1.5                                                  | Non-compacted  | 0.8                                  | 0.8                                    | 1.8                                    | 13.0                             | 12.1                                           | 0.0116                                           | 19                                                           | 27                                                         | 196                             | 100/C                  |
|            | 2×2.5                                                  | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 13.5                             | 7.41                                           | 0.0102                                           | 26                                                           | 35                                                         | 222                             | 100/C                  |
|            | 2×2.5                                                  | Non-compacted  | 0.8                                  | 0.8                                    | 1.8                                    | 14.0                             | 7.41                                           | 0.0093                                           | 26                                                           | 35                                                         | 239                             | 100/C                  |
|            | 2×4                                                    | Solid          | 0.9                                  | 0.8                                    | 1.8                                    | 15.0                             | 4.61                                           | 0.0094                                           | 35                                                           | 47                                                         | 287                             | 100/C                  |
|            | 2×4                                                    | Non-compacted  | 0.9                                  | 0.8                                    | 1.8                                    | 15.5                             | 4.61                                           | 0.0085                                           | 35                                                           | 47                                                         | 307                             | 100/C                  |
| YK NYY     | 2×6                                                    | Non-compacted  | 0.9                                  | 0.8                                    | 1.8                                    | 17.0                             | 3.08                                           | 0.0073                                           | 44                                                           | 60                                                         | 380                             | 100/C                  |
|            | 2×10                                                   | Non-compacted  | 1.1                                  | 0.8                                    | 1.8                                    | 19.5                             | 1.83                                           | 0.0069                                           | 61                                                           | 81                                                         | 546                             | 500/D                  |
|            | 2×16                                                   | Compacted      | 1.1                                  | 0.8                                    | 2.0                                    | 22.5                             | 1.15                                           | 0.0057                                           | 82                                                           | 105                                                        | 683                             | 1000/D                 |
|            | 2×25                                                   | Compacted      | 1.3                                  | 1.2                                    | 2.0                                    | 27.0                             | 0.727                                          | 0.0054                                           | 104                                                          | 136                                                        | 1022                            | 1000/D                 |
|            | 2×35                                                   | Compacted      | 1.3                                  | 1.2                                    | 2.0                                    | 29.5                             | 0.524                                          | 0.0047                                           | 129                                                          | 165                                                        | 1269                            | 1000/D                 |
|            | 2×50                                                   | Compacted      | 1.5                                  | 1.2                                    | 2.2                                    | 33.5                             | 0.387                                          | 0.0046                                           | 157                                                          | 195                                                        | 1718                            | 1000/D                 |
| NYY        | 2×70                                                   | Compacted      | 1.5                                  | 1.5                                    | 2.2                                    | 38.0                             | 0.268                                          | 0.0039                                           | 202                                                          | 239                                                        | 2296                            | 1000/D                 |
|            | 2×95                                                   | Non-compacted  | 1.7                                  | 1.5                                    | 2.2                                    | 42.5                             | 0.193                                          | 0.0038                                           | 245                                                          | 288                                                        | 3294                            | 500/D                  |
|            | 2×120                                                  | Non-compacted  | 1.7                                  | 1.5                                    | 2.4                                    | 46.5                             | 0.153                                          | 0.0034                                           | 285                                                          | 329                                                        | 4026                            | 500/D                  |
|            | 2×150                                                  | Non-compacted  | 1.9                                  | 1.8                                    | 2.6                                    | 52.0                             | 0.124                                          | 0.0034                                           | 330                                                          | 368                                                        | 4947                            | 500/D                  |
|            | 2×185                                                  | Non-compacted  | 2.1                                  | 1.8                                    | 2.8                                    | 57.0                             | 0.0991                                         | 0.0034                                           | 378                                                          | 417                                                        | 6100                            | 500/D                  |
|            | 2×240                                                  | Non-compacted  | 2.3                                  | 2.0                                    | 3.0                                    | 64.0                             | 0.0754                                         | 0.0033                                           | 447                                                          | 481                                                        | 7861                            | 500/D                  |
|            | 2×300                                                  | Non-compacted  | 2.5                                  | 2.0                                    | 3.2                                    | 70.5                             | 0.0601                                         | 0.0032                                           | 516                                                          | 541                                                        | 9661                            | 300/D                  |

C = Packing in Coil  
D = Packing in drum

**Remark :** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

## NYY or YK NYY

450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, TWO CORES



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown                            |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

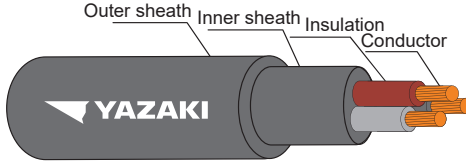
|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Cable name | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor Type | A.C. Resistance<br>R (Ω/km) | Inductance<br>L (mH/km) | Reactance<br>XL (Ω/km) | Impedance<br>Z (Ω/km) |
|------------|--------------------------------------------------------|----------------|-----------------------------|-------------------------|------------------------|-----------------------|
| NY Y       | 2x1                                                    | Solid          | 21.7000                     | 0.3771                  | 0.1185                 | 21.7000               |
|            | 2x1                                                    | Non-compacted  | 21.7000                     | 0.3651                  | 0.1147                 | 21.7000               |
|            | 2x1.5                                                  | Solid          | 14.5000                     | 0.3505                  | 0.1101                 | 14.5000               |
|            | 2x1.5                                                  | Non-compacted  | 14.5000                     | 0.3402                  | 0.1069                 | 14.5000               |
|            | 2x2.5                                                  | Solid          | 8.8700                      | 0.3238                  | 0.1017                 | 8.8710                |
|            | 2x2.5                                                  | Non-compacted  | 8.8700                      | 0.3160                  | 0.0993                 | 8.8710                |
|            | 2x4                                                    | Solid          | 5.5200                      | 0.3135                  | 0.0985                 | 5.5210                |
|            | 2x4                                                    | Non-compacted  | 5.5200                      | 0.3022                  | 0.0950                 | 5.5210                |
|            | 2x6                                                    | Non-compacted  | 3.6900                      | 0.2869                  | 0.0901                 | 3.6910                |
| YK NYY     | 2x10                                                   | Non-compacted  | 2.1900                      | 0.2801                  | 0.0880                 | 2.1920                |
|            | 2x16                                                   | Compacted      | 1.3800                      | 0.2631                  | 0.0827                 | 1.3820                |
|            | 2x25                                                   | Compacted      | 0.8700                      | 0.2607                  | 0.0819                 | 0.8738                |
|            | 2x35                                                   | Compacted      | 0.6272                      | 0.2593                  | 0.0814                 | 0.6325                |
|            | 2x50                                                   | Compacted      | 0.4634                      | 0.2604                  | 0.0818                 | 0.4706                |
| NY Y       | 2x70                                                   | Compacted      | 0.3212                      | 0.2506                  | 0.0787                 | 0.3307                |
|            | 2x95                                                   | Non-compacted  | 0.2317                      | 0.2480                  | 0.0779                 | 0.2444                |
|            | 2x120                                                  | Non-compacted  | 0.1840                      | 0.2409                  | 0.0757                 | 0.1990                |
|            | 2x150                                                  | Non-compacted  | 0.1495                      | 0.2402                  | 0.0755                 | 0.1675                |
|            | 2x185                                                  | Non-compacted  | 0.1201                      | 0.2401                  | 0.0754                 | 0.1418                |
|            | 2x240                                                  | Non-compacted  | 0.0922                      | 0.2361                  | 0.0742                 | 0.1183                |
|            | 2x300                                                  | Non-compacted  | 0.0744                      | 0.2343                  | 0.0736                 | 0.1047                |

## 450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, THREE CORES



 TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey                     |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

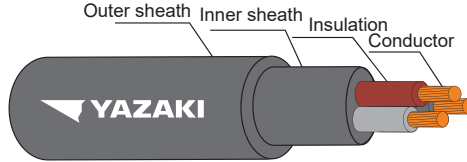
|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Cable name | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Outer Sheath thickness nominal<br>(mm) | Overall diameter maximum<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|------------|--------------------------------------------------------|----------------|--------------------------------------|----------------------------------------|----------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------|
| NYY        | 3×1                                                    | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 12.5                             | 18.1                                           | 0.0141                                           | 13                                                           | 18                                                         | 184                             | 100/C                  |
|            | 3×1                                                    | Non-compactd   | 0.8                                  | 0.8                                    | 1.8                                    | 13.0                             | 18.1                                           | 0.0135                                           | 13                                                           | 18                                                         | 190                             | 100/C                  |
|            | 3×1.5                                                  | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 13.0                             | 12.1                                           | 0.0123                                           | 16                                                           | 22                                                         | 206                             | 100/C                  |
|            | 3×1.5                                                  | Non-compactd   | 0.8                                  | 0.8                                    | 1.8                                    | 13.5                             | 12.1                                           | 0.0116                                           | 16                                                           | 22                                                         | 221                             | 100/C                  |
|            | 3×2.5                                                  | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 14.0                             | 7.41                                           | 0.0102                                           | 22                                                           | 30                                                         | 255                             | 100/C                  |
|            | 3×2.5                                                  | Non-compactd   | 0.8                                  | 0.8                                    | 1.8                                    | 15.0                             | 7.41                                           | 0.0093                                           | 22                                                           | 30                                                         | 274                             | 100/C                  |
|            | 3×4                                                    | Solid          | 0.9                                  | 0.8                                    | 1.8                                    | 15.5                             | 4.61                                           | 0.0094                                           | 30                                                           | 39                                                         | 336                             | 100/C                  |
|            | 3×4                                                    | Non-compactd   | 0.9                                  | 0.8                                    | 1.8                                    | 16.5                             | 4.61                                           | 0.0085                                           | 30                                                           | 39                                                         | 358                             | 100/C                  |
| YK NYY     | 3×6                                                    | Non-compactd   | 0.9                                  | 0.8                                    | 1.8                                    | 18.0                             | 3.08                                           | 0.0073                                           | 37                                                           | 50                                                         | 450                             | 100/C                  |
|            | 3×10                                                   | Non-compactd   | 1.1                                  | 0.8                                    | 1.8                                    | 20.5                             | 1.83                                           | 0.0069                                           | 52                                                           | 68                                                         | 656                             | 500/D                  |
|            | 3×16                                                   | Compacted      | 1.1                                  | 1.2                                    | 2.0                                    | 24.5                             | 1.15                                           | 0.0057                                           | 70                                                           | 87                                                         | 891                             | 1000/D                 |
|            | 3×25                                                   | Compacted      | 1.3                                  | 1.2                                    | 2.0                                    | 28.5                             | 0.727                                          | 0.0054                                           | 88                                                           | 128                                                        | 1281                            | 1000/D                 |
|            | 3×35                                                   | Compacted      | 1.3                                  | 1.2                                    | 2.0                                    | 31.5                             | 0.524                                          | 0.0047                                           | 110                                                          | 154                                                        | 1614                            | 1000/D                 |
| NYY        | 3×50                                                   | Compacted      | 1.5                                  | 1.5                                    | 2.2                                    | 36.0                             | 0.387                                          | 0.0046                                           | 133                                                          | 181                                                        | 2211                            | 1000/D                 |
|            | 3×70                                                   | Compacted      | 1.5                                  | 1.5                                    | 2.2                                    | 40.5                             | 0.268                                          | 0.0039                                           | 171                                                          | 223                                                        | 2916                            | 1000/D                 |
|            | 3×95                                                   | Non-compactd   | 1.7                                  | 1.5                                    | 2.4                                    | 46.0                             | 0.193                                          | 0.0038                                           | 207                                                          | 267                                                        | 4231                            | 500/D                  |
|            | 3×120                                                  | Non-compactd   | 1.7                                  | 1.8                                    | 2.6                                    | 50.5                             | 0.153                                          | 0.0034                                           | 240                                                          | 304                                                        | 5254                            | 500/D                  |
|            | 3×150                                                  | Non-compactd   | 1.9                                  | 1.8                                    | 2.8                                    | 56.0                             | 0.124                                          | 0.0034                                           | 278                                                          | 342                                                        | 6371                            | 500/D                  |
|            | 3×185                                                  | Non-compactd   | 2.1                                  | 2.0                                    | 3.0                                    | 61.5                             | 0.0991                                         | 0.0034                                           | 317                                                          | 386                                                        | 7937                            | 500/D                  |
|            | 3×240                                                  | Non-compactd   | 2.3                                  | 2.0                                    | 3.2                                    | 69.0                             | 0.0754                                         | 0.0033                                           | 374                                                          | 448                                                        | 10160                           | 300/D                  |
|            | 3×300                                                  | Non-compactd   | 2.5                                  | 2.2                                    | 3.4                                    | 76.0                             | 0.0601                                         | 0.0032                                           | 432                                                          | 507                                                        | 12587                           | 300/D                  |

## 450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, THREE CORES



 TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey                     |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

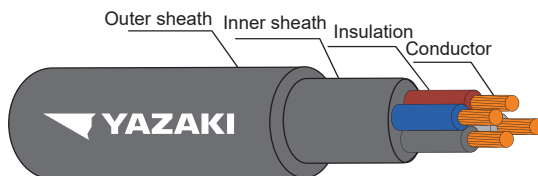
### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Cable name | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor Type | A.C. Resistance | Inductance   | Reactance    | Impedance   |
|------------|--------------------------------------------------------|----------------|-----------------|--------------|--------------|-------------|
|            |                                                        |                | R<br>(Ω/km)     | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| NYY        | 3×1                                                    | Solid          | 21.7000         | 0.3771       | 0.1185       | 21.7000     |
|            | 3×1                                                    | Non-compacted  | 21.7000         | 0.3651       | 0.1147       | 21.7000     |
|            | 3×1.5                                                  | Solid          | 14.5000         | 0.3505       | 0.1101       | 14.5000     |
|            | 3×1.5                                                  | Non-compacted  | 14.5000         | 0.3402       | 0.1069       | 14.5000     |
|            | 3×2.5                                                  | Solid          | 8.8700          | 0.3238       | 0.1017       | 8.8710      |
|            | 3×2.5                                                  | Non-compacted  | 8.8700          | 0.3160       | 0.0993       | 8.8710      |
|            | 3×4                                                    | Solid          | 5.5200          | 0.3135       | 0.0985       | 5.5210      |
|            | 3×4                                                    | Non-compacted  | 5.5200          | 0.3022       | 0.0950       | 5.5210      |
|            | 3×6                                                    | Non-compacted  | 3.6900          | 0.2869       | 0.0901       | 3.6910      |
| YK NYY     | 3×10                                                   | Non-compacted  | 2.1900          | 0.2801       | 0.0880       | 2.1920      |
|            | 3×16                                                   | Compacted      | 1.3800          | 0.2631       | 0.0827       | 1.3820      |
|            | 3×25                                                   | Compacted      | 0.8700          | 0.2607       | 0.0819       | 0.8738      |
|            | 3×35                                                   | Compacted      | 0.6273          | 0.2593       | 0.0814       | 0.6326      |
|            | 3×50                                                   | Compacted      | 0.4635          | 0.2604       | 0.0818       | 0.4707      |
|            | 3×70                                                   | Compacted      | 0.3213          | 0.2506       | 0.0787       | 0.3308      |
| NYY        | 3×95                                                   | Non-compacted  | 0.2319          | 0.2480       | 0.0779       | 0.2446      |
|            | 3×120                                                  | Non-compacted  | 0.1843          | 0.2409       | 0.0757       | 0.1992      |
|            | 3×150                                                  | Non-compacted  | 0.1499          | 0.2402       | 0.0755       | 0.1678      |
|            | 3×185                                                  | Non-compacted  | 0.1205          | 0.2401       | 0.0754       | 0.1422      |
|            | 3×240                                                  | Non-compacted  | 0.0928          | 0.2361       | 0.0742       | 0.1188      |
|            | 3×300                                                  | Non-compacted  | 0.0751          | 0.2343       | 0.0736       | 0.1052      |

B

## 450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, FOUR CORES



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown, Black, Grey               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

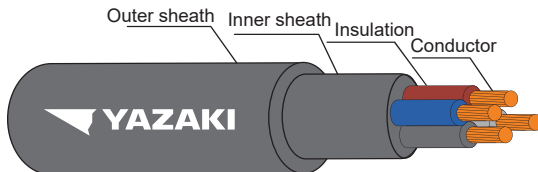
| Cable name | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Outer Sheath thickness nominal<br>(mm) | Overall diameter maximum<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|------------|--------------------------------------------------------|----------------|--------------------------------------|----------------------------------------|----------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------|
| NYY        | 4×1                                                    | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 13.5                             | 18.1                                           | 0.0141                                           | 13                                                           | 18                                                         | 210                             | 100/C                  |
|            | 4×1                                                    | Non-compacted  | 0.8                                  | 0.8                                    | 1.8                                    | 14.0                             | 18.1                                           | 0.0135                                           | 13                                                           | 18                                                         | 218                             | 100/C                  |
|            | 4×1.5                                                  | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 14.0                             | 12.1                                           | 0.0123                                           | 16                                                           | 22                                                         | 239                             | 100/C                  |
|            | 4×1.5                                                  | Non-compacted  | 0.8                                  | 0.8                                    | 1.8                                    | 14.5                             | 12.1                                           | 0.0116                                           | 16                                                           | 22                                                         | 255                             | 100/C                  |
|            | 4×2.5                                                  | Solid          | 0.8                                  | 0.8                                    | 1.8                                    | 15.0                             | 7.41                                           | 0.0102                                           | 22                                                           | 30                                                         | 299                             | 100/C                  |
|            | 4×2.5                                                  | Non-compacted  | 0.8                                  | 0.8                                    | 1.8                                    | 16.0                             | 7.41                                           | 0.0093                                           | 22                                                           | 30                                                         | 321                             | 100/C                  |
|            | 4×4                                                    | Solid          | 0.9                                  | 0.8                                    | 1.8                                    | 17.0                             | 4.61                                           | 0.0094                                           | 30                                                           | 39                                                         | 400                             | 100/C                  |
|            | 4×4                                                    | Non-compacted  | 0.9                                  | 0.8                                    | 1.8                                    | 17.5                             | 4.61                                           | 0.0085                                           | 30                                                           | 39                                                         | 426                             | 100/C                  |
| YK NYY     | 4×6                                                    | Non-compacted  | 0.9                                  | 0.8                                    | 1.8                                    | 19.0                             | 3.08                                           | 0.0073                                           | 37                                                           | 50                                                         | 550                             | 500/D                  |
|            | 4×10                                                   | Non-compacted  | 1.1                                  | 0.8                                    | 2.0                                    | 23.0                             | 1.83                                           | 0.0069                                           | 52                                                           | 68                                                         | 831                             | 500/D                  |
|            | 4×16                                                   | Compacted      | 1.1                                  | 1.2                                    | 2.0                                    | 26.5                             | 1.15                                           | 0.0057                                           | 70                                                           | 87                                                         | 1103                            | 1000/D                 |
|            | 4×25                                                   | Compacted      | 1.3                                  | 1.2                                    | 2.0                                    | 31.0                             | 0.727                                          | 0.0054                                           | 88                                                           | 128                                                        | 1597                            | 1000/D                 |
|            | 4×35                                                   | Compacted      | 1.3                                  | 1.5                                    | 2.2                                    | 35.0                             | 0.524                                          | 0.0047                                           | 110                                                          | 154                                                        | 2105                            | 1000/D                 |
| NYY        | 4×50                                                   | Compacted      | 1.5                                  | 1.5                                    | 2.2                                    | 39.5                             | 0.387                                          | 0.0046                                           | 133                                                          | 181                                                        | 2778                            | 1000/D                 |
|            | 4×70                                                   | Compacted      | 1.5                                  | 1.5                                    | 2.4                                    | 44.5                             | 0.268                                          | 0.0039                                           | 171                                                          | 223                                                        | 3728                            | 800/D                  |
|            | 4×95                                                   | Non-compacted  | 1.7                                  | 1.8                                    | 2.6                                    | 51.5                             | 0.193                                          | 0.0038                                           | 207                                                          | 267                                                        | 5454                            | 500/D                  |
|            | 4×120                                                  | Non-compacted  | 1.7                                  | 1.8                                    | 2.8                                    | 56.0                             | 0.153                                          | 0.0034                                           | 240                                                          | 304                                                        | 6713                            | 500/D                  |
|            | 4×150                                                  | Non-compacted  | 1.9                                  | 2.0                                    | 3.0                                    | 62.0                             | 0.124                                          | 0.0034                                           | 278                                                          | 342                                                        | 8193                            | 500/D                  |
|            | 4×185                                                  | Non-compacted  | 2.1                                  | 2.0                                    | 3.2                                    | 68.0                             | 0.0991                                         | 0.0034                                           | 317                                                          | 386                                                        | 10146                           | 300/D                  |
|            | 4×240                                                  | Non-compacted  | 2.3                                  | 2.2                                    | 3.4                                    | 76.5                             | 0.0754                                         | 0.0033                                           | 374                                                          | 448                                                        | 13047                           | 300/D                  |
|            | 4×300                                                  | Non-compacted  | 2.5                                  | 2.2                                    | 3.8                                    | 85.0                             | 0.0601                                         | 0.0032                                           | 432                                                          | 507                                                        | 16199                           | 200/D                  |

C = Packing in Coil  
 D = Packing in drum

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
 Deep of laying (For cable laid direct in ground) 0.8 m

## NYN or YK NYN

450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, FOUR CORES



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown, Black, Grey               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

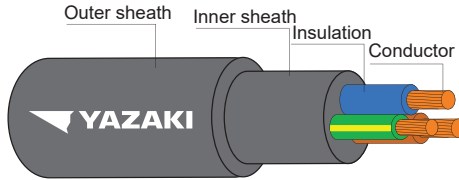
|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Cable name | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor Type | A.C. Resistance | Inductance   | Reactance    | Impedance   |
|------------|--------------------------------------------------------|----------------|-----------------|--------------|--------------|-------------|
|            |                                                        |                | R<br>(Ω/km)     | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| NYN        | 4×1                                                    | Solid          | 21.7000         | 0.3771       | 0.1185       | 21.7000     |
|            | 4×1                                                    | Non-compacted  | 21.7000         | 0.3651       | 0.1147       | 21.7000     |
|            | 4×1.5                                                  | Solid          | 14.5000         | 0.3505       | 0.1101       | 14.5000     |
|            | 4×1.5                                                  | Non-compacted  | 14.5000         | 0.3402       | 0.1069       | 14.5000     |
|            | 4×2.5                                                  | Solid          | 8.8700          | 0.3238       | 0.1017       | 8.8710      |
|            | 4×2.5                                                  | Non-compacted  | 8.8700          | 0.3160       | 0.0993       | 8.8710      |
|            | 4×4                                                    | Solid          | 5.5200          | 0.3135       | 0.0985       | 5.5210      |
|            | 4×4                                                    | Non-compacted  | 5.5200          | 0.3022       | 0.0950       | 5.5210      |
|            | 4×6                                                    | Non-compacted  | 3.6900          | 0.2869       | 0.0901       | 3.6910      |
| YK NYN     | 4×10                                                   | Non-compacted  | 2.1900          | 0.2801       | 0.0880       | 2.1920      |
|            | 4×16                                                   | Compacted      | 1.3800          | 0.2631       | 0.0827       | 1.3820      |
|            | 4×25                                                   | Compacted      | 0.8700          | 0.2607       | 0.0819       | 0.8738      |
|            | 4×35                                                   | Compacted      | 0.6273          | 0.2593       | 0.0814       | 0.6326      |
|            | 4×50                                                   | Compacted      | 0.4635          | 0.2604       | 0.0818       | 0.4707      |
| NYN        | 4×70                                                   | Compacted      | 0.3213          | 0.2506       | 0.0787       | 0.3308      |
|            | 4×95                                                   | Non-compacted  | 0.2319          | 0.2480       | 0.0779       | 0.2446      |
|            | 4×120                                                  | Non-compacted  | 0.1843          | 0.2409       | 0.0757       | 0.1992      |
|            | 4×150                                                  | Non-compacted  | 0.1499          | 0.2402       | 0.0755       | 0.1678      |
|            | 4×185                                                  | Non-compacted  | 0.1205          | 0.2401       | 0.0754       | 0.1422      |
|            | 4×240                                                  | Non-compacted  | 0.0928          | 0.2361       | 0.0742       | 0.1188      |
|            | 4×300                                                  | Non-compacted  | 0.0751          | 0.2343       | 0.0736       | 0.1052      |

## 450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown + Green/Yellow             |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 5                                                        |

### APPLICATION

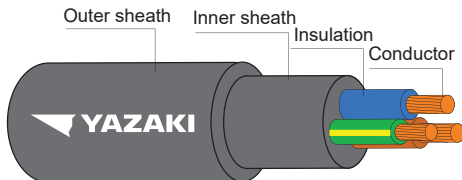
For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of<br>coress | Conductor                     |        |                   |        | Insulation<br>thickness<br>nominal | Inner<br>sheath<br>thickness<br>approx. | Outer<br>Sheath<br>thick-<br>ness<br>nominal | Overall<br>diameter<br>maximum | Conductor resistance at<br>20°C<br>maximum |                                       | Insulation<br>resistance<br>at 70°C<br>minimum | Continuous current<br>rating maxium |     | Cable<br>weight<br>approx. | Stand-<br>ard<br>Length<br>per<br>drum |
|---------------------|-------------------------------|--------|-------------------|--------|------------------------------------|-----------------------------------------|----------------------------------------------|--------------------------------|--------------------------------------------|---------------------------------------|------------------------------------------------|-------------------------------------|-----|----------------------------|----------------------------------------|
|                     | Nominal cross<br>section area |        | Type of Conductor |        |                                    |                                         |                                              |                                | on cable<br>Ladder<br>at 40°C              | direct burial<br>in ground at<br>30°C |                                                |                                     |     |                            |                                        |
|                     | Phase                         | Ground | Phase             | Ground |                                    |                                         |                                              |                                |                                            |                                       |                                                |                                     |     |                            |                                        |
|                     | (mm²)                         | (mm²)  |                   |        | (mm)                               | (mm)                                    | (mm)                                         | (mm)                           | (Ω/km)                                     | (Ω/km)                                | (MΩ·km)                                        | (A)                                 | (A) | (kg/km)                    | (m)                                    |
| 2+G                 | 1                             | 1      | Solid             |        | 0.8                                | 0.8                                     | 1.8                                          | 13.0                           | 18.1                                       | 18.1                                  | 0.0141                                         | 15                                  | 21  | 184                        | 500                                    |
|                     | 1                             | 1      | Non-compacted     |        | 0.8                                | 0.8                                     | 1.8                                          | 13.5                           | 18.1                                       | 18.1                                  | 0.0135                                         | 15                                  | 21  | 190                        | 500                                    |
|                     | 1.5                           | 1.5    | Solid             |        | 0.8                                | 0.8                                     | 1.8                                          | 13.5                           | 12.1                                       | 12.1                                  | 0.0123                                         | 19                                  | 27  | 206                        | 500                                    |
|                     | 1.5                           | 1.5    | Non-compacted     |        | 0.8                                | 0.8                                     | 1.8                                          | 14.0                           | 12.1                                       | 12.1                                  | 0.0116                                         | 19                                  | 27  | 221                        | 500                                    |
|                     | 2.5                           | 2.5    | Solid             |        | 0.8                                | 0.8                                     | 1.8                                          | 14.5                           | 7.41                                       | 7.41                                  | 0.0102                                         | 26                                  | 35  | 255                        | 500                                    |
|                     | 2.5                           | 2.5    | Non-compacted     |        | 0.8                                | 0.8                                     | 1.8                                          | 15.0                           | 7.41                                       | 7.41                                  | 0.0093                                         | 26                                  | 35  | 273                        | 500                                    |
|                     | 4                             | 4      | Solid             |        | 0.9                                | 0.8                                     | 1.8                                          | 16.0                           | 4.61                                       | 4.61                                  | 0.0094                                         | 35                                  | 47  | 336                        | 500                                    |
|                     | 4                             | 4      | Non-compacted     |        | 0.9                                | 0.8                                     | 1.8                                          | 16.5                           | 4.61                                       | 4.61                                  | 0.0085                                         | 35                                  | 47  | 358                        | 500                                    |
|                     | 6                             | 6      | Non-compacted     |        | 0.9                                | 0.8                                     | 1.8                                          | 18.0                           | 3.08                                       | 3.08                                  | 0.0073                                         | 44                                  | 60  | 450                        | 500                                    |
|                     | 10                            | 10     | Non-compacted     |        | 1.1                                | 0.8                                     | 1.8                                          | 21.0                           | 1.83                                       | 1.83                                  | 0.0069                                         | 61                                  | 81  | 655                        | 500                                    |
|                     | 16                            | 16     | Non-compacted     |        | 1.1                                | 0.8                                     | 2.0                                          | 23.5                           | 1.15                                       | 1.15                                  | 0.0057                                         | 82                                  | 105 | 912                        | 500                                    |
|                     | 25                            | 16     | Non-compacted     |        | 1.3                                | 1.2                                     | 2.0                                          | 28.0                           | 0.727                                      | 1.15                                  | 0.0054                                         | 104                                 | 136 | 1212                       | 500                                    |
|                     | 35                            | 16     | Non-compacted     |        | 1.3                                | 1.2                                     | 2.0                                          | 30.0                           | 0.524                                      | 1.15                                  | 0.0047                                         | 129                                 | 165 | 1506                       | 500                                    |
|                     | 50                            | 25     | Non-compacted     |        | 1.5                                | 1.2                                     | 2.2                                          | 34.0                           | 0.387                                      | 0.727                                 | 0.0046                                         | 157                                 | 195 | 1978                       | 500                                    |
|                     | 70                            | 35     | Non-compacted     |        | 1.5                                | 1.5                                     | 2.2                                          | 38.5                           | 0.268                                      | 0.524                                 | 0.0039                                         | 202                                 | 239 | 2736                       | 500                                    |
|                     | 95                            | 50     | Non-compacted     |        | 1.7                                | 1.5                                     | 2.2                                          | 43.5                           | 0.193                                      | 0.387                                 | 0.0038                                         | 245                                 | 288 | 3602                       | 500                                    |
|                     | 120                           | 70     | Non-compacted     |        | 1.7                                | 1.5                                     | 2.4                                          | 47.5                           | 0.153                                      | 0.268                                 | 0.0034                                         | 285                                 | 329 | 4525                       | 500                                    |
|                     | 150                           | 95     | Non-compacted     |        | 1.9                                | 1.8                                     | 2.6                                          | 53.0                           | 0.124                                      | 0.193                                 | 0.0034                                         | 330                                 | 368 | 5695                       | 500                                    |
|                     | 185                           | 95     | Non-compacted     |        | 2.1                                | 1.8                                     | 2.8                                          | 57.5                           | 0.0991                                     | 0.193                                 | 0.0034                                         | 378                                 | 417 | 6737                       | 500                                    |
|                     | 240                           | 120    | Non-compacted     |        | 2.3                                | 2.0                                     | 3.0                                          | 64.5                           | 0.0754                                     | 0.153                                 | 0.0033                                         | 447                                 | 481 | 8638                       | 500                                    |
|                     | 300                           | 150    | Non-compacted     |        | 2.5                                | 2.0                                     | 3.2                                          | 71.0                           | 0.0601                                     | 0.124                                 | 0.0032                                         | 516                                 | 541 | 10601                      | 300                                    |

**Remark :** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

## NYG

450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                      |
|----------------------------|--------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper  |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)         |
| <b>Core identification</b> | : Blue, Brown + Green/Yellow         |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)     |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4) |

### TECHNICAL DATA

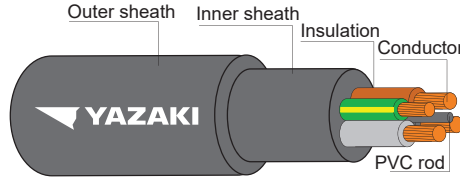
|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 5                                                        |

### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of coress | Nominal cross section area |                           | A.C. Resistance | Inductance | Reactance | Impedance |
|------------------|----------------------------|---------------------------|-----------------|------------|-----------|-----------|
|                  | Phase (mm <sup>2</sup> )   | Ground (mm <sup>2</sup> ) | R (Ω/km)        | L (mH/km)  | XL (Ω/km) | Z (Ω/km)  |
| 2+G              | 1                          | 1                         | 21.7000         | 0.3771     | 0.1185    | 21.7000   |
|                  | 1                          | 1                         | 21.7000         | 0.3651     | 0.1147    | 21.7000   |
|                  | 1.5                        | 1.5                       | 14.5000         | 0.3505     | 0.1101    | 14.5000   |
|                  | 1.5                        | 1.5                       | 14.5000         | 0.3402     | 0.1069    | 14.5000   |
|                  | 2.5                        | 2.5                       | 8.8700          | 0.3238     | 0.1017    | 8.8710    |
|                  | 2.5                        | 2.5                       | 8.8700          | 0.3160     | 0.0993    | 8.8710    |
|                  | 4                          | 4                         | 5.5200          | 0.3135     | 0.0985    | 5.5210    |
|                  | 4                          | 4                         | 5.5200          | 0.3022     | 0.0950    | 5.5210    |
|                  | 6                          | 6                         | 3.6900          | 0.2869     | 0.0901    | 3.6910    |
|                  | 10                         | 10                        | 2.1900          | 0.2801     | 0.0880    | 2.1920    |
|                  | 16                         | 16                        | 1.3800          | 0.2791     | 0.0877    | 1.3828    |
|                  | 25                         | 16                        | 0.8700          | 0.2631     | 0.0827    | 0.8739    |
|                  | 35                         | 16                        | 0.6272          | 0.2593     | 0.0814    | 0.6325    |
|                  | 50                         | 25                        | 0.4634          | 0.2604     | 0.0818    | 0.4706    |
|                  | 70                         | 35                        | 0.3212          | 0.2506     | 0.0787    | 0.3307    |
|                  | 95                         | 50                        | 0.2317          | 0.2480     | 0.0779    | 0.2444    |
|                  | 120                        | 70                        | 0.1840          | 0.2409     | 0.0757    | 0.1990    |
|                  | 150                        | 95                        | 0.1495          | 0.2402     | 0.0755    | 0.1675    |
|                  | 185                        | 95                        | 0.1201          | 0.2401     | 0.0754    | 0.1418    |
|                  | 240                        | 120                       | 0.0922          | 0.2361     | 0.0742    | 0.1183    |
|                  | 300                        | 150                       | 0.0744          | 0.2343     | 0.0736    | 0.1047    |

## 450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey + Green/Yellow      |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 5                                                        |

### APPLICATION

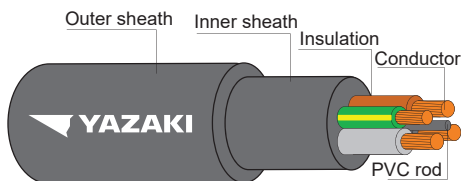
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of coress | Conductor                  |                 |                   |        | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Outer Sheath thickness nominal<br>(mm) | Overall diameter maximum<br>(mm) | Conductor resistance at 20°C maximum |                              | Insulation resistance at 70°C minimum<br>(MΩ-km) | Continuous current rating maximum |     | Cable weight approx.<br>(kg/km) | Standard Length per drum<br>(m) |
|------------------|----------------------------|-----------------|-------------------|--------|--------------------------------------|----------------------------------------|----------------------------------------|----------------------------------|--------------------------------------|------------------------------|--------------------------------------------------|-----------------------------------|-----|---------------------------------|---------------------------------|
|                  | Nominal cross section area |                 | Type of Conductor |        |                                      |                                        |                                        |                                  | on cable Ladder at 40°C<br>(A)       | direct burial at 30°C<br>(A) |                                                  |                                   |     |                                 |                                 |
|                  | Phase<br>(mm²)             | Ground<br>(mm²) | Phase             | Ground |                                      |                                        |                                        |                                  |                                      |                              | Phase<br>(Ω/km)                                  | Ground<br>(Ω/km)                  |     |                                 |                                 |
|                  |                            |                 |                   |        |                                      |                                        |                                        |                                  |                                      |                              |                                                  |                                   |     |                                 |                                 |
| 3+G              | 1                          | 1               | Solid             |        | 0.8                                  | 0.8                                    | 1.8                                    | 13.5                             | 18.1                                 | 18.1                         | 0.0141                                           | 13                                | 18  | 210                             | 500                             |
|                  | 1                          | 1               | Non-compacted     |        | 0.8                                  | 0.8                                    | 1.8                                    | 14.0                             | 18.1                                 | 18.1                         | 0.0135                                           | 13                                | 18  | 218                             | 500                             |
|                  | 1.5                        | 1.5             | Solid             |        | 0.8                                  | 0.8                                    | 1.8                                    | 14.0                             | 12.1                                 | 12.1                         | 0.0123                                           | 16                                | 22  | 239                             | 500                             |
|                  | 1.5                        | 1.5             | Non-compacted     |        | 0.8                                  | 0.8                                    | 1.8                                    | 15.0                             | 12.1                                 | 12.1                         | 0.0116                                           | 16                                | 22  | 255                             | 500                             |
|                  | 2.5                        | 2.5             | Solid             |        | 0.8                                  | 0.8                                    | 1.8                                    | 15.5                             | 7.41                                 | 7.41                         | 0.0102                                           | 22                                | 30  | 299                             | 500                             |
|                  | 2.5                        | 2.5             | Non-compacted     |        | 0.8                                  | 0.8                                    | 1.8                                    | 16.0                             | 7.41                                 | 7.41                         | 0.0093                                           | 22                                | 30  | 321                             | 500                             |
|                  | 4                          | 4               | Solid             |        | 0.9                                  | 0.8                                    | 1.8                                    | 17.0                             | 4.61                                 | 4.61                         | 0.0094                                           | 30                                | 39  | 400                             | 500                             |
|                  | 4                          | 4               | Non-compacted     |        | 0.9                                  | 0.8                                    | 1.8                                    | 18.0                             | 4.61                                 | 4.61                         | 0.0085                                           | 30                                | 39  | 426                             | 500                             |
|                  | 6                          | 6               | Non-compacted     |        | 0.9                                  | 0.8                                    | 1.8                                    | 19.0                             | 3.08                                 | 3.08                         | 0.0073                                           | 37                                | 50  | 550                             | 500                             |
|                  | 10                         | 10              | Non-compacted     |        | 1.1                                  | 0.8                                    | 1.8                                    | 22.5                             | 1.83                                 | 1.83                         | 0.0069                                           | 52                                | 68  | 810                             | 500                             |
|                  | 16                         | 16              | Non-compacted     |        | 1.1                                  | 1.2                                    | 2.0                                    | 26.5                             | 1.15                                 | 1.15                         | 0.0057                                           | 70                                | 87  | 1176                            | 500                             |
|                  | 25                         | 16              | Non-compacted     |        | 1.3                                  | 1.2                                    | 2.0                                    | 30.5                             | 0.727                                | 1.15                         | 0.0054                                           | 88                                | 128 | 1537                            | 500                             |
|                  | 35                         | 16              | Non-compacted     |        | 1.3                                  | 1.2                                    | 2.0                                    | 33.0                             | 0.524                                | 1.15                         | 0.0047                                           | 110                               | 154 | 1937                            | 500                             |
|                  | 50                         | 25              | Non-compacted     |        | 1.5                                  | 1.5                                    | 2.2                                    | 38.5                             | 0.387                                | 0.727                        | 0.0046                                           | 133                               | 181 | 2603                            | 500                             |
|                  | 70                         | 35              | Non-compacted     |        | 1.5                                  | 1.5                                    | 2.2                                    | 42.5                             | 0.268                                | 0.524                        | 0.0039                                           | 171                               | 223 | 3557                            | 500                             |
|                  | 95                         | 50              | Non-compacted     |        | 1.7                                  | 1.5                                    | 2.4                                    | 48.5                             | 0.193                                | 0.387                        | 0.0038                                           | 207                               | 267 | 4745                            | 500                             |
|                  | 120                        | 70              | Non-compacted     |        | 1.7                                  | 1.8                                    | 2.6                                    | 53.5                             | 0.153                                | 0.268                        | 0.0034                                           | 240                               | 304 | 6008                            | 500                             |
|                  | 150                        | 95              | Non-compacted     |        | 1.9                                  | 1.8                                    | 2.8                                    | 59.0                             | 0.124                                | 0.193                        | 0.0034                                           | 278                               | 342 | 7437                            | 500                             |
|                  | 185                        | 95              | Non-compacted     |        | 2.1                                  | 2.0                                    | 3.0                                    | 64.5                             | 0.0991                               | 0.193                        | 0.0034                                           | 317                               | 386 | 8944                            | 500                             |
|                  | 240                        | 120             | Non-compacted     |        | 2.3                                  | 2.0                                    | 3.2                                    | 72.0                             | 0.0754                               | 0.153                        | 0.0033                                           | 374                               | 448 | 11417                           | 300                             |
|                  | 300                        | 150             | Non-compacted     |        | 2.5                                  | 2.2                                    | 3.4                                    | 79.5                             | 0.0601                               | 0.124                        | 0.0032                                           | 432                               | 507 | 14097                           | 300                             |

**Remark :** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

## NYY-G

450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED WITH GROUND



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey + Green/Yellow      |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Outer Sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

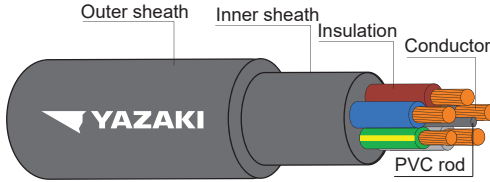
|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 5                                                        |

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross section area |                           | A.C. Resistance | Inductance | Reactance | Impedance |
|-----------------|----------------------------|---------------------------|-----------------|------------|-----------|-----------|
|                 | Phase (mm <sup>2</sup> )   | Ground (mm <sup>2</sup> ) | R (Ω/km)        | L (mH/km)  | XL (Ω/km) | Z (Ω/km)  |
| 3+G             | 1                          | 1                         | 21.7000         | 0.3771     | 0.1185    | 21.7000   |
|                 | 1                          | 1                         | 21.7000         | 0.3651     | 0.1147    | 21.7000   |
|                 | 1.5                        | 1.5                       | 14.5000         | 0.3505     | 0.1101    | 14.5000   |
|                 | 1.5                        | 1.5                       | 14.5000         | 0.3402     | 0.1069    | 14.5000   |
|                 | 2.5                        | 2.5                       | 8.8700          | 0.3238     | 0.1017    | 8.8710    |
|                 | 2.5                        | 2.5                       | 8.8700          | 0.3160     | 0.0993    | 8.8710    |
|                 | 4                          | 4                         | 5.5200          | 0.3135     | 0.0985    | 5.5210    |
|                 | 4                          | 4                         | 5.5200          | 0.3022     | 0.0950    | 5.5210    |
|                 | 6                          | 6                         | 3.6900          | 0.2869     | 0.0901    | 3.6910    |
|                 | 10                         | 10                        | 2.1900          | 0.2801     | 0.0880    | 2.1920    |
|                 | 16                         | 16                        | 1.3800          | 0.2791     | 0.0877    | 1.3828    |
|                 | 25                         | 16                        | 0.8700          | 0.2631     | 0.0827    | 0.8739    |
|                 | 35                         | 16                        | 0.6273          | 0.2593     | 0.0814    | 0.6326    |
|                 | 50                         | 25                        | 0.4635          | 0.2604     | 0.0818    | 0.4707    |
|                 | 70                         | 35                        | 0.3213          | 0.2506     | 0.0787    | 0.3308    |
|                 | 95                         | 50                        | 0.2319          | 0.2480     | 0.0779    | 0.2446    |
|                 | 120                        | 70                        | 0.1843          | 0.2409     | 0.0757    | 0.1992    |
|                 | 150                        | 95                        | 0.1499          | 0.2402     | 0.0755    | 0.1678    |
| 3+G             | 185                        | 95                        | 0.1205          | 0.2401     | 0.0754    | 0.1422    |
|                 | 240                        | 120                       | 0.0928          | 0.2361     | 0.0742    | 0.1188    |
|                 | 300                        | 150                       | 0.0751          | 0.2343     | 0.0736    | 0.1052    |

**450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND**



TIS 11 Part 101-2559

**CABLE STRUCTURE**

|                            |                                           |
|----------------------------|-------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire  |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)              |
| <b>Core identification</b> | : Blue, Brown, Black, Grey + Green/Yellow |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)          |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)      |

**TECHNICAL DATA**

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 5                                                        |

**APPLICATION**

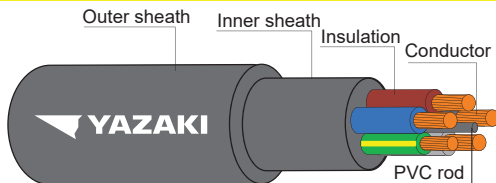
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of<br>cores | Conductor                     |                 |                   |        | Insulation<br>thickness<br>nominal | Inner<br>sheath<br>thickness<br>approx. | Outer<br>Sheath<br>thick-<br>ness<br>nominal | Overall<br>diameter<br>maximum | Conductor resistance<br>at 20°C<br>maximum |                             | Insulation<br>resistance<br>at 70°C<br>minimum | Continuous<br>current rating<br>maximum |         | Cable<br>weight<br>approx. | Standard<br>length<br>per<br>drum |
|--------------------|-------------------------------|-----------------|-------------------|--------|------------------------------------|-----------------------------------------|----------------------------------------------|--------------------------------|--------------------------------------------|-----------------------------|------------------------------------------------|-----------------------------------------|---------|----------------------------|-----------------------------------|
|                    | Nominal cross<br>section area |                 | Type of Conductor |        |                                    |                                         |                                              |                                | on cable<br>Ladder<br>at 40°C              | direct<br>burial at<br>30°C |                                                |                                         |         |                            |                                   |
|                    | Phase<br>(mm²)                | Ground<br>(mm²) | Phase             | Ground |                                    |                                         |                                              |                                |                                            |                             | Phase<br>(Ω/km)                                | Ground<br>(Ω/km)                        | (MΩ·km) |                            |                                   |
| 4+G                | 1                             | 1               | Solid             |        | 0.8                                | 0.8                                     | 1.8                                          | 14.5                           | 18.1                                       | 18.1                        | 0.0141                                         | 13                                      | 18      | 246                        | 500                               |
|                    | 1                             | 1               | Non-compacted     |        | 0.8                                | 0.8                                     | 1.8                                          | 15.0                           | 18.1                                       | 18.1                        | 0.0135                                         | 13                                      | 18      | 256                        | 500                               |
|                    | 1.5                           | 1.5             | Solid             |        | 0.8                                | 0.8                                     | 1.8                                          | 15.0                           | 12.1                                       | 12.1                        | 0.0123                                         | 16                                      | 22      | 283                        | 500                               |
|                    | 1.5                           | 1.5             | Non-compacted     |        | 0.8                                | 0.8                                     | 1.8                                          | 16.0                           | 12.1                                       | 12.1                        | 0.0116                                         | 16                                      | 22      | 301                        | 500                               |
|                    | 2.5                           | 2.5             | Solid             |        | 0.8                                | 0.8                                     | 1.8                                          | 16.5                           | 7.41                                       | 7.41                        | 0.0102                                         | 22                                      | 30      | 354                        | 500                               |
|                    | 2.5                           | 2.5             | Non-compacted     |        | 0.8                                | 0.8                                     | 1.8                                          | 17.0                           | 7.41                                       | 7.41                        | 0.0093                                         | 22                                      | 30      | 386                        | 500                               |
|                    | 4                             | 4               | Solid             |        | 0.9                                | 0.8                                     | 1.8                                          | 18.0                           | 4.61                                       | 4.61                        | 0.0094                                         | 30                                      | 39      | 481                        | 500                               |
|                    | 4                             | 4               | Non-compacted     |        | 0.9                                | 0.8                                     | 1.8                                          | 19.0                           | 4.61                                       | 4.61                        | 0.0085                                         | 30                                      | 39      | 512                        | 500                               |
|                    | 6                             | 6               | Non-compacted     |        | 0.9                                | 0.8                                     | 1.8                                          | 20.5                           | 3.08                                       | 3.08                        | 0.0073                                         | 37                                      | 50      | 660                        | 500                               |
|                    | 10                            | 10              | Non-compacted     |        | 1.1                                | 0.8                                     | 2.0                                          | 25.0                           | 1.83                                       | 1.83                        | 0.0069                                         | 52                                      | 68      | 1002                       | 500                               |
|                    | 16                            | 16              | Non-compacted     |        | 1.1                                | 1.2                                     | 2.0                                          | 28.5                           | 1.15                                       | 1.15                        | 0.0057                                         | 70                                      | 87      | 1419                       | 500                               |
|                    | 25                            | 16              | Non-compacted     |        | 1.3                                | 1.2                                     | 2.0                                          | 34.0                           | 0.727                                      | 1.15                        | 0.0054                                         | 88                                      | 128     | 1896                       | 500                               |
|                    | 35                            | 16              | Non-compacted     |        | 1.3                                | 1.5                                     | 2.2                                          | 39.0                           | 0.524                                      | 1.15                        | 0.0047                                         | 110                                     | 154     | 2510                       | 500                               |
|                    | 50                            | 25              | Non-compacted     |        | 1.5                                | 1.5                                     | 2.2                                          | 43.5                           | 0.387                                      | 0.727                       | 0.0046                                         | 133                                     | 181     | 3243                       | 500                               |
|                    | 70                            | 35              | Non-compacted     |        | 1.5                                | 1.5                                     | 2.4                                          | 49.0                           | 0.268                                      | 0.524                       | 0.0039                                         | 171                                     | 223     | 4504                       | 500                               |
|                    | 95                            | 50              | Non-compacted     |        | 1.7                                | 1.8                                     | 2.6                                          | 56.5                           | 0.193                                      | 0.387                       | 0.0038                                         | 207                                     | 267     | 6121                       | 500                               |
|                    | 120                           | 70              | Non-compacted     |        | 1.7                                | 1.8                                     | 2.8                                          | 61.5                           | 0.153                                      | 0.268                       | 0.0034                                         | 240                                     | 304     | 7605                       | 500                               |
|                    | 150                           | 95              | Non-compacted     |        | 1.9                                | 2.0                                     | 3.0                                          | 68.0                           | 0.124                                      | 0.193                       | 0.0034                                         | 278                                     | 342     | 9482                       | 300                               |
|                    | 185                           | 95              | Non-compacted     |        | 2.1                                | 2.0                                     | 3.2                                          | 75.0                           | 0.0991                                     | 0.193                       | 0.0034                                         | 317                                     | 386     | 11365                      | 300                               |
|                    | 240                           | 120             | Non-compacted     |        | 2.3                                | 2.2                                     | 3.4                                          | 84.5                           | 0.0754                                     | 0.153                       | 0.0033                                         | 374                                     | 448     | 14578                      | 300                               |
|                    | 300                           | 150             | Non-compacted     |        | 2.5                                | 2.2                                     | 3.8                                          | 93.5                           | 0.0601                                     | 0.124                       | 0.0032                                         | 432                                     | 507     | 18038                      | 200                               |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

## NY-Y-G

450/750 V 70°C SOLID OR STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND



TIS 11 Part 101-2559

### CABLE STRUCTURE

|                            |                                           |
|----------------------------|-------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire  |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)              |
| <b>Core identification</b> | : Blue, Brown, Black, Grey + Green/Yellow |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)          |
| <b>Outer sheath</b>        | : Black polyvinyl chloride (PVC/ST4)      |

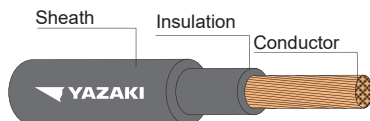
### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 5                                                        |

### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross section area<br>(No.x mm <sup>2</sup> ) | Conductor Type | A.C. Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|-----------------|-------------------------------------------------------|----------------|--------------------------------|----------------------------|---------------------------|--------------------------|
| 4+G             | 1                                                     | 1              | 21.7000                        | 0.3771                     | 0.1185                    | 21.7000                  |
|                 | 1                                                     | 1              | 21.7000                        | 0.3651                     | 0.1147                    | 21.7000                  |
|                 | 1.5                                                   | 1.5            | 14.5000                        | 0.3505                     | 0.1101                    | 14.5000                  |
|                 | 1.5                                                   | 1.5            | 14.5000                        | 0.3402                     | 0.1069                    | 14.5000                  |
|                 | 2.5                                                   | 2.5            | 8.8700                         | 0.3238                     | 0.1017                    | 8.8710                   |
|                 | 2.5                                                   | 2.5            | 8.8700                         | 0.3160                     | 0.0993                    | 8.8710                   |
|                 | 4                                                     | 4              | 5.5200                         | 0.3135                     | 0.0985                    | 5.5210                   |
|                 | 4                                                     | 4              | 5.5200                         | 0.3022                     | 0.0950                    | 5.5210                   |
|                 | 6                                                     | 6              | 3.6900                         | 0.2869                     | 0.0901                    | 3.6910                   |
|                 | 10                                                    | 10             | 2.1900                         | 0.2801                     | 0.0880                    | 2.1920                   |
|                 | 16                                                    | 16             | 1.3800                         | 0.2791                     | 0.0877                    | 1.3828                   |
|                 | 25                                                    | 16             | 0.8700                         | 0.2631                     | 0.0827                    | 0.8739                   |
|                 | 35                                                    | 16             | 0.6273                         | 0.2593                     | 0.0814                    | 0.6326                   |
|                 | 50                                                    | 25             | 0.4635                         | 0.2604                     | 0.0818                    | 0.4707                   |
|                 | 70                                                    | 35             | 0.3213                         | 0.2506                     | 0.0787                    | 0.3308                   |
|                 | 95                                                    | 50             | 0.2319                         | 0.2480                     | 0.0779                    | 0.2446                   |
|                 | 120                                                   | 70             | 0.1843                         | 0.2409                     | 0.0757                    | 0.1992                   |
|                 | 150                                                   | 95             | 0.1499                         | 0.2402                     | 0.0755                    | 0.1678                   |
|                 | 185                                                   | 95             | 0.1205                         | 0.2401                     | 0.0754                    | 0.1422                   |
|                 | 240                                                   | 120            | 0.0928                         | 0.2361                     | 0.0742                    | 0.1188                   |
|                 | 300                                                   | 150            | 0.0751                         | 0.2343                     | 0.0736                    | 0.1052                   |

**450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE**
 TIS 11 Part 101-2559

**CABLE STRUCTURE**

|                            |                                      |
|----------------------------|--------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire      |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/D)         |
| <b>Core identification</b> | : Black                              |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST5) |

**TECHNICAL DATA**

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750Volts between Line to Line                  |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 7                                                        |

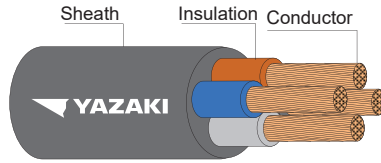
**APPLICATION**

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cable come in contact with oils.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter maximum<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating free air at 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|---------------------------------|------------------------|
| 1               | 1                                                  | Flexible       | 0.8                                  | 1.2                              | 6.2                              | 19.5                                           | 0.0127                                           | 14                                                        | 42                              | 100/C                  |
|                 | 1.5                                                | Flexible       | 0.8                                  | 1.2                              | 6.6                              | 13.3                                           | 0.0111                                           | 16                                                        | 49                              | 100/C                  |
|                 | 2.5                                                | Flexible       | 0.8                                  | 1.2                              | 7.4                              | 7.98                                           | 0.0092                                           | 25                                                        | 61                              | 100/C                  |
|                 | 4                                                  | Flexible       | 0.9                                  | 1.4                              | 8.6                              | 4.95                                           | 0.0084                                           | 30                                                        | 92                              | 100/C                  |
|                 | 6                                                  | Flexible       | 0.9                                  | 1.4                              | 9.4                              | 3.30                                           | 0.0071                                           | 39                                                        | 122                             | 100/C                  |
|                 | 10                                                 | Flexible       | 1.1                                  | 1.8                              | 12.0                             | 1.91                                           | 0.0068                                           | 51                                                        | 211                             | 100/C                  |
|                 | 16                                                 | Flexible       | 1.1                                  | 1.8                              | 13.5                             | 1.21                                           | 0.0050                                           | 73                                                        | 276                             | 100/C                  |
|                 | 25                                                 | Flexible       | 1.3                                  | 2.2                              | 16.0                             | 0.780                                          | 0.0048                                           | 97                                                        | 418                             | 100/C                  |
|                 | 35                                                 | Flexible       | 1.3                                  | 2.2                              | 17.5                             | 0.554                                          | 0.0041                                           | 140                                                       | 544                             | 500/D                  |

C = Packing in Coil  
D = Packing in drum

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance<br><br>R<br>(Ω/km) | Inductance<br><br>L<br>(mH/km) | Reactance<br><br>XL<br>(Ω/km) | Impedance<br><br>Z<br>(Ω/km) |
|-----------------|----------------------------------------------------|------------------------------------|--------------------------------|-------------------------------|------------------------------|
| 1               | 1                                                  | 23.3000                            | 0.6620                         | 0.2079                        | 23.3000                      |
|                 | 1.5                                                | 15.9000                            | 0.6310                         | 0.1983                        | 15.9000                      |
|                 | 2.5                                                | 9.5500                             | 0.5930                         | 0.1864                        | 9.5520                       |
|                 | 4                                                  | 5.9227                             | 0.5946                         | 0.1868                        | 5.9256                       |
|                 | 6                                                  | 3.9485                             | 0.5605                         | 0.1761                        | 3.9524                       |
|                 | 10                                                 | 2.2854                             | 0.5529                         | 0.1737                        | 2.2919                       |
|                 | 16                                                 | 1.4478                             | 0.5306                         | 0.1667                        | 1.4574                       |
|                 | 25                                                 | 0.9334                             | 0.5275                         | 0.1657                        | 0.9480                       |
|                 | 35                                                 | 0.6630                             | 0.5086                         | 0.1598                        | 0.6820                       |

**450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE**

 TIS 11 Part 101-2559

**CABLE STRUCTURE**

|                              |                                      |
|------------------------------|--------------------------------------|
| <b>Conductor</b>             | : Flexible annealed copper wire      |
| <b>Insulation</b>            | : Polyvinyl chloride (PVC/D)         |
| <b>Core identification</b> : |                                      |
| 2 Cores                      | Blue, Brown                          |
| 3 Cores                      | Brown, Black, Grey                   |
| 4 Cores                      | Blue, Brown, Black, Grey             |
| <b>Sheath</b>                | : Black polyvinyl chloride (PVC/ST5) |

**TECHNICAL DATA**

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 7                                                        |

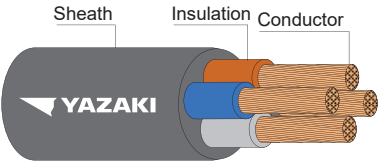
**APPLICATION**

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cable come in contact with oils.

| Number of cores | Nominal cross sectional area | Conductor Type | Insulation thickness nominal | Sheath thickness nominal | Overall diameter maximum | Conductor resistance at 20°C maximum | Insulation resistance at 70°C minimum | Continuous current rating free air at 40°C maximum | Cable weight approx. | Standard Length |
|-----------------|------------------------------|----------------|------------------------------|--------------------------|--------------------------|--------------------------------------|---------------------------------------|----------------------------------------------------|----------------------|-----------------|
|                 | (mm <sup>2</sup> )           |                | (mm)                         | (mm)                     | (mm)                     | (Ω/km)                               | (MΩ·km)                               | (A)                                                | (kg/km)              | (m)             |
| 2               | 1                            | Flexible       | 0.8                          | 1.2                      | 9.6                      | 19.5                                 | 0.0127                                | 14                                                 | 100                  | 100/C           |
|                 | 1.5                          | Flexible       | 0.8                          | 1.4                      | 11.0                     | 13.3                                 | 0.0111                                | 16                                                 | 127                  | 100/C           |
|                 | 2.5                          | Flexible       | 0.8                          | 1.4                      | 12.5                     | 7.98                                 | 0.0092                                | 25                                                 | 159                  | 100/C           |
|                 | 4                            | Flexible       | 0.9                          | 1.6                      | 14.5                     | 4.95                                 | 0.0084                                | 30                                                 | 238                  | 100/C           |
|                 | 6                            | Flexible       | 0.9                          | 1.6                      | 16.0                     | 3.30                                 | 0.0071                                | 39                                                 | 320                  | 100/C           |
|                 | 10                           | Flexible       | 1.1                          | 1.8                      | 20.0                     | 1.91                                 | 0.0068                                | 51                                                 | 524                  | 500/D           |
|                 | 16                           | Flexible       | 1.1                          | 2.2                      | 23.0                     | 1.21                                 | 0.0050                                | 73                                                 | 728                  | 500/D           |
|                 | 25                           | Flexible       | 1.3                          | 2.4                      | 27.5                     | 0.780                                | 0.0048                                | 97                                                 | 1060                 | 500/D           |
| 3               | 35                           | Flexible       | 1.3                          | 2.6                      | 31.0                     | 0.554                                | 0.0041                                | 140                                                | 1414                 | 500/D           |
|                 | 1                            | Flexible       | 0.8                          | 1.4                      | 10.5                     | 19.5                                 | 0.0127                                | 12                                                 | 124                  | 100/C           |
|                 | 1.5                          | Flexible       | 0.8                          | 1.4                      | 11.5                     | 13.3                                 | 0.0111                                | 15                                                 | 148                  | 100/C           |
|                 | 2.5                          | Flexible       | 0.8                          | 1.4                      | 13.0                     | 7.98                                 | 0.0092                                | 20                                                 | 188                  | 100/C           |
|                 | 4                            | Flexible       | 0.9                          | 1.6                      | 15.5                     | 4.95                                 | 0.0084                                | 26                                                 | 284                  | 100/C           |
|                 | 6                            | Flexible       | 0.9                          | 1.8                      | 17.5                     | 3.30                                 | 0.0071                                | 34                                                 | 403                  | 100/C           |
|                 | 10                           | Flexible       | 1.1                          | 2.0                      | 21.5                     | 1.91                                 | 0.0068                                | 47                                                 | 657                  | 500/D           |
|                 | 16                           | Flexible       | 1.1                          | 2.4                      | 25.0                     | 1.21                                 | 0.0050                                | 63                                                 | 917                  | 500/D           |
| 4               | 25                           | Flexible       | 1.3                          | 2.6                      | 30.0                     | 0.780                                | 0.0048                                | 83                                                 | 1342                 | 500/D           |
|                 | 35                           | Flexible       | 1.3                          | 2.8                      | 33.5                     | 0.554                                | 0.0041                                | 102                                                | 1795                 | 500/D           |
|                 | 1                            | Flexible       | 0.8                          | 1.6                      | 12.0                     | 19.5                                 | 0.0127                                | 12                                                 | 159                  | 100/C           |
|                 | 1.5                          | Flexible       | 0.8                          | 1.6                      | 12.5                     | 13.3                                 | 0.0111                                | 15                                                 | 188                  | 100/C           |
|                 | 2.5                          | Flexible       | 0.8                          | 1.6                      | 15.0                     | 7.98                                 | 0.0092                                | 20                                                 | 241                  | 100/C           |
|                 | 4                            | Flexible       | 0.9                          | 1.8                      | 17.0                     | 4.95                                 | 0.0084                                | 26                                                 | 358                  | 100/C           |
|                 | 6                            | Flexible       | 0.9                          | 2.0                      | 19.5                     | 3.30                                 | 0.0071                                | 34                                                 | 513                  | 500/D           |
|                 | 10                           | Flexible       | 1.1                          | 2.2                      | 24.0                     | 1.91                                 | 0.0068                                | 47                                                 | 838                  | 500/D           |
|                 | 16                           | Flexible       | 1.1                          | 2.6                      | 28.0                     | 1.21                                 | 0.0050                                | 63                                                 | 1170                 | 500/D           |
|                 | 25                           | Flexible       | 1.3                          | 2.8                      | 33.0                     | 0.780                                | 0.0048                                | 83                                                 | 1708                 | 500/D           |
|                 | 35                           | Flexible       | 1.3                          | 3.1                      | 37.0                     | 0.554                                | 0.0041                                | 102                                                | 2318                 | 500/D           |

C = Packing in Coil  
D = Packing in drum

**450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE**



 TIS 11 Part 101-2559

**CABLE STRUCTURE**

- Conductor** : Flexible annealed copper wire
- Insulation** : Polyvinyl chloride (PVC/D)
- Core identification** :
- 2 Cores : Blue, Brown
  - 3 Cores : Brown, Black, Grey
  - 4 Cores : Blue, Brown, Black, Grey
- Sheath** : Black polyvinyl chloride (PVC/ST5)

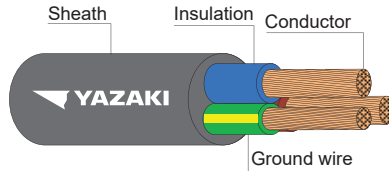
**TECHNICAL DATA**

- Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth  
: 750 Volts between Line to Line
- AC Testing voltage** : 2,500 volts
- Reference standard** : TIS 11 Part 101-2559 Table 7

**APPLICATION**

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cable come in contact with oils.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance |        | Inductance |         | Reactance |        | Impedance |        |
|-----------------|----------------------------------------------------|-----------------|--------|------------|---------|-----------|--------|-----------|--------|
|                 |                                                    | R               | (Ω/km) | L          | (mH/km) | XL        | (Ω/km) | Z         | (Ω/km) |
| 2               | 1                                                  | 23.3000         |        | 0.3560     |         | 0.1118    |        | 23.3000   |        |
|                 | 1.5                                                | 15.9000         |        | 0.3330     |         | 0.1048    |        | 15.9000   |        |
|                 | 2.5                                                | 9.5500          |        | 0.3070     |         | 0.0965    |        | 9.5500    |        |
|                 | 4                                                  | 5.9227          |        | 0.3084     |         | 0.0969    |        | 5.9235    |        |
|                 | 6                                                  | 3.9485          |        | 0.8662     |         | 0.0899    |        | 3.9495    |        |
|                 | 10                                                 | 2.2854          |        | 0.2768     |         | 0.0870    |        | 2.2870    |        |
|                 | 16                                                 | 1.4479          |        | 0.2638     |         | 0.0829    |        | 1.4502    |        |
|                 | 25                                                 | 0.9334          |        | 0.2602     |         | 0.0817    |        | 0.9370    |        |
| 3               | 35                                                 | 0.6631          |        | 0.2500     |         | 0.0785    |        | 0.6677    |        |
|                 | 1                                                  | 23.3000         |        | 0.3560     |         | 0.1118    |        | 23.3000   |        |
|                 | 1.5                                                | 15.9000         |        | 0.3330     |         | 0.1048    |        | 15.9000   |        |
|                 | 2.5                                                | 9.5500          |        | 0.3070     |         | 0.0965    |        | 9.5500    |        |
|                 | 4                                                  | 5.9227          |        | 0.3084     |         | 0.0969    |        | 5.9235    |        |
|                 | 6                                                  | 3.9485          |        | 0.2862     |         | 0.0899    |        | 3.9495    |        |
|                 | 10                                                 | 2.2854          |        | 0.2768     |         | 0.0870    |        | 2.2870    |        |
|                 | 16                                                 | 1.4479          |        | 0.2638     |         | 0.0829    |        | 1.4503    |        |
| 4               | 25                                                 | 0.9335          |        | 0.2602     |         | 0.0817    |        | 0.9371    |        |
|                 | 35                                                 | 0.6632          |        | 0.2500     |         | 0.0785    |        | 0.6678    |        |
|                 | 1                                                  | 23.3000         |        | 0.3560     |         | 0.1118    |        | 23.3000   |        |
|                 | 1.5                                                | 15.9000         |        | 0.3330     |         | 0.1048    |        | 15.9000   |        |
|                 | 2.5                                                | 9.5500          |        | 0.3070     |         | 0.0965    |        | 9.5520    |        |
|                 | 4                                                  | 5.9227          |        | 0.3084     |         | 0.0969    |        | 5.9235    |        |
|                 | 6                                                  | 3.9485          |        | 0.2862     |         | 0.0899    |        | 3.9495    |        |
|                 | 10                                                 | 2.2854          |        | 0.2768     |         | 0.0870    |        | 2.2870    |        |
|                 | 16                                                 | 1.4479          |        | 0.2638     |         | 0.0829    |        | 1.4503    |        |
|                 | 25                                                 | 0.9335          |        | 0.2602     |         | 0.0817    |        | 0.9371    |        |
|                 | 35                                                 | 0.6632          |        | 0.2500     |         | 0.0785    |        | 0.6678    |        |

**450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE**

 TIS 11 Part 101-2559

**CABLE STRUCTURE**

|                            |                                      |
|----------------------------|--------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire      |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/D)         |
| <b>Core identification</b> | : Blue, Brown + Green/Yellow         |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST5) |

**TECHNICAL DATA**

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 8                                                        |

**APPLICATION**

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cable come in contact with oils.

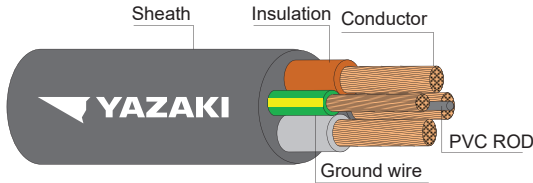
| Number of coress | Conductor                  |                    |                   |          | Insulation thickness nominal | Sheath thickness nominal | Overall diameter maximum | Conductor resistance at 20°C maximum |        | Insulation resistance at 70°C minimum | Continuous current rating in free air 40°C maximum | Cable weight approx. | Standard Length |
|------------------|----------------------------|--------------------|-------------------|----------|------------------------------|--------------------------|--------------------------|--------------------------------------|--------|---------------------------------------|----------------------------------------------------|----------------------|-----------------|
|                  | Nominal cross section area |                    | Type of Conductor |          |                              |                          |                          | Phase                                | Ground |                                       |                                                    |                      |                 |
|                  | Phase                      | Ground             | Phase             | Ground   |                              |                          |                          |                                      |        |                                       |                                                    |                      |                 |
|                  | (mm <sup>2</sup> )         | (mm <sup>2</sup> ) |                   |          | (mm)                         | (mm)                     | (mm)                     | (Ω/km)                               | (Ω/km) | (MΩ·km)                               | (A)                                                | (kg/km)              | (m)             |
| 2+G              | 1                          | 1                  |                   | Flexible | 0.8                          | 1.2                      | 10.0                     | 19.5                                 | 19.5   | 0.0127                                | 14                                                 | 115                  | 100/C           |
|                  | 1.5                        | 1.5                |                   | Flexible | 0.8                          | 1.4                      | 12.0                     | 13.3                                 | 13.3   | 0.0111                                | 16                                                 | 148                  | 100/C           |
|                  | 2.5                        | 2.5                |                   | Flexible | 0.8                          | 1.4                      | 13.0                     | 7.98                                 | 7.98   | 0.0092                                | 25                                                 | 188                  | 100/C           |
|                  | 4                          | 4                  |                   | Flexible | 0.9                          | 1.6                      | 15.5                     | 4.95                                 | 4.95   | 0.0084                                | 30                                                 | 284                  | 100/C           |
|                  | 6                          | 6                  |                   | Flexible | 0.9                          | 1.8                      | 17.5                     | 3.30                                 | 3.30   | 0.0071                                | 39                                                 | 403                  | 100/C           |
|                  | 10                         | 10                 |                   | Flexible | 1.1                          | 2.0                      | 21.5                     | 1.91                                 | 1.91   | 0.0068                                | 51                                                 | 657                  | 500/D           |
|                  | 16                         | 16                 |                   | Flexible | 1.1                          | 2.4                      | 25.0                     | 1.21                                 | 1.21   | 0.0050                                | 73                                                 | 917                  | 500/D           |
|                  | 25                         | 16                 |                   | Flexible | 1.3                          | 2.6                      | 28.5                     | 0.780                                | 1.21   | 0.0048                                | 97                                                 | 1217                 | 500/D           |
|                  | 35                         | 16                 |                   | Flexible | 1.3                          | 2.8                      | 31.5                     | 0.554                                | 1.21   | 0.0041                                | 140                                                | 1538                 | 500/D           |

C = Packing in Coil  
D = Packing in drum

| Number of<br>cores | Nominal cross sectional area |        | A.C. Resistance | Inductance | Reactance | Impedance |
|--------------------|------------------------------|--------|-----------------|------------|-----------|-----------|
|                    | Phase                        | Ground |                 |            |           |           |
|                    | (mm²)                        | (mm²)  |                 |            |           |           |
| 2+G                | 1                            | 1      | 23.3000         | 0.3560     | 0.1118    | 23.3000   |
|                    | 1.5                          | 1.5    | 15.9000         | 0.3330     | 0.1048    | 15.9000   |
|                    | 2.5                          | 2.5    | 9.5500          | 0.3070     | 0.0965    | 9.5520    |
|                    | 4                            | 4      | 5.9227          | 0.3084     | 0.0969    | 5.9235    |
|                    | 6                            | 6      | 3.9485          | 0.2862     | 0.0899    | 3.9495    |
|                    | 10                           | 10     | 2.2854          | 0.2768     | 0.0870    | 2.2870    |
|                    | 16                           | 16     | 1.4479          | 0.2638     | 0.0829    | 1.4502    |
|                    | 25                           | 16     | 0.9334          | 0.2602     | 0.0817    | 0.9370    |
|                    | 35                           | 16     | 0.6631          | 0.2500     | 0.0785    | 0.6677    |

## VCT-G

### 450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE



TIS 11 Part 101-2559

#### CABLE STRUCTURE

|                            |                                      |
|----------------------------|--------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire      |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/D)         |
| <b>Core identification</b> | : Brown, Black, Grey + Green/Yellow  |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST5) |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 8                                                        |

#### APPLICATION

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cable come in contact with oils.

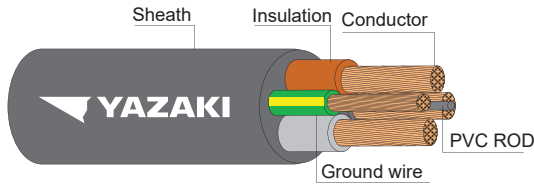
| Number of<br>cores | Conductor                     |        |                   |        | Insulation<br>thickness<br>nominal | Sheath<br>thickness<br>nominal | Overall<br>diameter<br>maximum | Conductor<br>resistance at 20°C<br>maximum |        | Insulation<br>resistance at<br>70°C<br>minimum | Continuous<br>current rating<br>in free air 40°C<br>maximum | Cable<br>weight<br>approx. | Standard<br>Length |
|--------------------|-------------------------------|--------|-------------------|--------|------------------------------------|--------------------------------|--------------------------------|--------------------------------------------|--------|------------------------------------------------|-------------------------------------------------------------|----------------------------|--------------------|
|                    | Nominal cross<br>section area |        | Type of Conductor |        |                                    |                                |                                | Phase                                      | Ground |                                                |                                                             |                            |                    |
|                    |                               |        |                   |        |                                    |                                |                                |                                            |        |                                                |                                                             |                            |                    |
|                    | Phase                         | Ground | Phase             | Ground |                                    |                                |                                |                                            |        |                                                |                                                             |                            |                    |
|                    | (mm²)                         | (mm²)  |                   |        | (mm)                               | (mm)                           | (mm)                           | (Ω/km)                                     | (Ω/km) | (MΩ·km)                                        | (A)                                                         | (kg/km)                    | (m)                |
| 3+G                | 1                             | 1      | Flexible          |        | 0.8                                | 1.4                            | 11.5                           | 19.5                                       | 19.5   | 0.0127                                         | 12                                                          | 147                        | 100/C              |
|                    | 1.5                           | 1.5    | Flexible          |        | 0.8                                | 1.4                            | 12.5                           | 13.3                                       | 13.3   | 0.0111                                         | 15                                                          | 175                        | 100/C              |
|                    | 2.5                           | 2.5    | Flexible          |        | 0.8                                | 1.4                            | 14.0                           | 7.98                                       | 7.98   | 0.0092                                         | 20                                                          | 227                        | 100/C              |
|                    | 4                             | 4      | Flexible          |        | 0.9                                | 1.8                            | 17.0                           | 4.95                                       | 4.95   | 0.0084                                         | 26                                                          | 358                        | 100/C              |
|                    | 6                             | 6      | Flexible          |        | 0.9                                | 2.0                            | 19.5                           | 3.30                                       | 3.30   | 0.0071                                         | 34                                                          | 513                        | 500/D              |
|                    | 10                            | 10     | Flexible          |        | 1.1                                | 2.2                            | 24.0                           | 1.91                                       | 1.91   | 0.0068                                         | 47                                                          | 838                        | 500/D              |
|                    | 16                            | 16     | Flexible          |        | 1.1                                | 2.6                            | 28.0                           | 1.21                                       | 1.21   | 0.0050                                         | 63                                                          | 1170                       | 500/D              |
|                    | 25                            | 16     | Flexible          |        | 1.3                                | 2.8                            | 33.0                           | 0.780                                      | 1.21   | 0.0048                                         | 83                                                          | 1587                       | 500/D              |
|                    | 35                            | 16     | Flexible          |        | 1.3                                | 3.1                            | 37.0                           | 0.554                                      | 1.21   | 0.0041                                         | 102                                                         | 2058                       | 500/D              |

C = Packing in Coil  
D = Packing in drum

| Number of cores | Nominal cross sectional area |                           | A.C. Resistance |  | Inductance |  | Reactance |  | Impedance |  |
|-----------------|------------------------------|---------------------------|-----------------|--|------------|--|-----------|--|-----------|--|
|                 | Phase (mm <sup>2</sup> )     | Ground (mm <sup>2</sup> ) | R (Ω/km)        |  | L (mH/km)  |  | XL (Ω/km) |  | Z (Ω/km)  |  |
| 3+G             | 1                            | 1                         | 23.3000         |  | 0.3560     |  | 0.1118    |  | 23.3000   |  |
|                 | 1.5                          | 1.5                       | 15.9000         |  | 0.3330     |  | 0.1048    |  | 15.9000   |  |
|                 | 2.5                          | 2.5                       | 9.5500          |  | 0.3070     |  | 0.0965    |  | 9.5500    |  |
|                 | 4                            | 4                         | 5.9227          |  | 0.3084     |  | 0.0969    |  | 5.9235    |  |
|                 | 6                            | 6                         | 3.9485          |  | 0.2862     |  | 0.0899    |  | 3.9495    |  |
|                 | 10                           | 10                        | 2.2854          |  | 0.2768     |  | 0.0870    |  | 2.2870    |  |
|                 | 16                           | 16                        | 1.4479          |  | 0.2638     |  | 0.0829    |  | 1.4503    |  |
|                 | 25                           | 16                        | 0.9335          |  | 0.2602     |  | 0.0817    |  | 0.9371    |  |
|                 | 35                           | 16                        | 0.6632          |  | 0.2500     |  | 0.0785    |  | 0.6678    |  |

## VCT-G

### 450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE



TIS 11 Part 101-2559

#### CABLE STRUCTURE

|                            |                                           |
|----------------------------|-------------------------------------------|
| <b>Conductor</b>           | : Flexible annealed copper wire           |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/D)              |
| <b>Core identification</b> | : Blue, Brown, Black, Grey + Green/Yellow |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST5)      |

#### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 8                                                        |

#### APPLICATION

For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cable come in contact with oils.

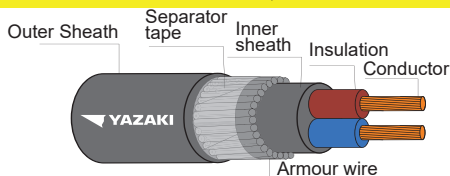
| Number of cores | Conductor                    |        |                   |        | Insulation thickness nominal | Sheath thickness nominal | Overall diameter maximum | Conductor resistance at 20°C maximum |        | Insulation resistance at 70°C minimum | Continuous current rating in free air 40°C maximum | Cable weight approx. | Standard Length |
|-----------------|------------------------------|--------|-------------------|--------|------------------------------|--------------------------|--------------------------|--------------------------------------|--------|---------------------------------------|----------------------------------------------------|----------------------|-----------------|
|                 | Nominal cross sectional area |        | Type of Conductor |        |                              |                          |                          |                                      |        |                                       |                                                    |                      |                 |
|                 | Phase                        | Ground | Phase             | Ground |                              |                          |                          | Phase                                | Ground |                                       |                                                    |                      |                 |
|                 | (mm²)                        | (mm²)  |                   |        | (mm)                         | (mm)                     | (mm)                     | (Ω/km)                               | (Ω/km) | (MΩ/km)                               | (A)                                                | (kg/km)              | (m)             |
| 4+G             | 1                            | 1      | Flexible          |        | 0.8                          | 1.6                      | 13.0                     | 19.5                                 | 19.5   | 0.0127                                | 12                                                 | 189                  | 100/C           |
|                 | 1.5                          | 1.5    | Flexible          |        | 0.8                          | 1.6                      | 14.0                     | 13.3                                 | 13.3   | 0.0111                                | 15                                                 | 225                  | 100/C           |
|                 | 2.5                          | 2.5    | Flexible          |        | 0.8                          | 1.6                      | 15.5                     | 7.98                                 | 7.98   | 0.0092                                | 20                                                 | 292                  | 100/C           |
|                 | 4                            | 4      | Flexible          |        | 0.9                          | 1.8                      | 18.5                     | 4.95                                 | 4.95   | 0.0084                                | 26                                                 | 437                  | 100/C           |
|                 | 6                            | 6      | Flexible          |        | 0.9                          | 2.0                      | 21.5                     | 3.30                                 | 3.30   | 0.0071                                | 34                                                 | 622                  | 500/D           |
|                 | 10                           | 10     | Flexible          |        | 1.1                          | 2.2                      | 26.5                     | 1.91                                 | 1.91   | 0.0068                                | 47                                                 | 1019                 | 500/D           |
|                 | 16                           | 16     | Flexible          |        | 1.1                          | 2.6                      | 30.5                     | 1.21                                 | 1.21   | 0.0050                                | 63                                                 | 1410                 | 500/D           |
|                 | 25                           | 16     | Flexible          |        | 1.3                          | 2.8                      | 36.5                     | 0.780                                | 1.21   | 0.0048                                | 83                                                 | 1962                 | 500/D           |
|                 | 35                           | 16     | Flexible          |        | 1.3                          | 3.1                      | 41.5                     | 0.554                                | 1.21   | 0.0041                                | 102                                                | 2595                 | 500/D           |

C = Packing in Coil  
D = Packing in drum

| Number of cores | Nominal cross sectional area |                           | A.C. Resistance |  | Inductance |  | Reactance |  | Impedance |  |
|-----------------|------------------------------|---------------------------|-----------------|--|------------|--|-----------|--|-----------|--|
|                 | Phase (mm <sup>2</sup> )     | Ground (mm <sup>2</sup> ) | R (Ω/km)        |  | L (mH/km)  |  | XL (Ω/km) |  | Z (Ω/km)  |  |
| 4+G             | 1                            | 1                         | 23.3000         |  | 0.3560     |  | 0.1118    |  | 23.3000   |  |
|                 | 1.5                          | 1.5                       | 15.9000         |  | 0.3330     |  | 0.1048    |  | 15.9000   |  |
|                 | 2.5                          | 2.5                       | 9.5500          |  | 0.3070     |  | 0.0965    |  | 9.5520    |  |
|                 | 4                            | 4                         | 5.9227          |  | 0.3084     |  | 0.0969    |  | 5.9235    |  |
|                 | 6                            | 6                         | 3.9485          |  | 0.2862     |  | 0.0899    |  | 3.9495    |  |
|                 | 10                           | 10                        | 2.2854          |  | 0.2768     |  | 0.0870    |  | 2.2870    |  |
|                 | 16                           | 16                        | 1.4479          |  | 0.2638     |  | 0.0829    |  | 1.4503    |  |
|                 | 25                           | 16                        | 0.9335          |  | 0.2602     |  | 0.0817    |  | 0.9371    |  |
|                 | 35                           | 16                        | 0.6632          |  | 0.2500     |  | 0.0785    |  | 0.6678    |  |

## NYY-SWA

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown                            |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Armor</b>               | : Galvanized Steel Wires                 |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

### APPLICATION

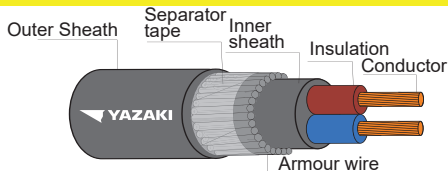
For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area | Conductor Type | Insulation Inner sheath thickness nominal | Inner sheath thickness approx. | Diameter of steel wire armor nominal | Outer Sheath thickness nominal | Overall diameter maximum approx. | Conductor resistance at 20°C maximum | Insulation resistance at 70°C minimum | Continuous current rating In ground at 30°C maximum | Cable weight approx. | Standard Length per drum |
|-----------------|------------------------------|----------------|-------------------------------------------|--------------------------------|--------------------------------------|--------------------------------|----------------------------------|--------------------------------------|---------------------------------------|-----------------------------------------------------|----------------------|--------------------------|
|                 | (mm <sup>2</sup> )           |                | (mm)                                      | (mm)                           | (mm)                                 | (mm)                           | (mm)                             | (Ω/km)                               | (MΩ·km)                               | (A)                                                 | (kg/km)              | (m)                      |
| 2               | 1.5                          | Solid          | 0.8                                       | 0.8                            | 0.8                                  | 1.8                            | 14.5                             | 12.1                                 | 0.0123                                | 27                                                  | 330                  | 500                      |
|                 | 2.5                          | Solid          | 0.8                                       | 0.8                            | 0.8                                  | 1.8                            | 15.5                             | 7.41                                 | 0.0102                                | 36                                                  | 380                  | 500                      |
|                 | 4                            | Solid          | 0.9                                       | 0.8                            | 0.8                                  | 1.8                            | 17.0                             | 4.61                                 | 0.0094                                | 47                                                  | 460                  | 500                      |
|                 | 6                            | Non-compacted  | 0.9                                       | 0.8                            | 1.25                                 | 1.8                            | 20.5                             | 3.08                                 | 0.0073                                | 61                                                  | 780                  | 500                      |
|                 | 10                           | Non-compacted  | 1.1                                       | 0.8                            | 1.60                                 | 1.8                            | 23.5                             | 1.83                                 | 0.0069                                | 82                                                  | 1140                 | 500                      |
|                 | 50                           | Non-compacted  | 1.5                                       | 1.2                            | 2.0                                  | 2.1                            | 37.0                             | 0.387                                | 0.0046                                | 199                                                 | 3000                 | 500                      |
|                 | 70                           | Non-compacted  | 1.5                                       | 1.5                            | 2.0                                  | 2.2                            | 41.5                             | 0.268                                | 0.0039                                | 243                                                 | 3900                 | 500                      |
|                 | 95                           | Non-compacted  | 1.7                                       | 1.5                            | 2.5                                  | 2.4                            | 48.0                             | 0.193                                | 0.0038                                | 294                                                 | 5500                 | 500                      |
|                 | 120                          | Non-compacted  | 1.7                                       | 1.5                            | 2.5                                  | 2.6                            | 51.5                             | 0.153                                | 0.0034                                | 336                                                 | 6000                 | 500                      |
|                 | 150                          | Non-compacted  | 1.9                                       | 1.8                            | 2.5                                  | 2.7                            | 56.5                             | 0.124                                | 0.0034                                | 375                                                 | 7500                 | 500                      |
|                 | 185                          | Non-compacted  | 2.1                                       | 1.8                            | 2.5                                  | 2.9                            | 61.5                             | 0.0991                               | 0.0034                                | 424                                                 | 8500                 | 500                      |
|                 | 240                          | Non-compacted  | 2.3                                       | 2.0                            | 2.5                                  | 3.1                            | 69.0                             | 0.0754                               | 0.0033                                | 489                                                 | 11000                | 300                      |
|                 | 300                          | Non-compacted  | 2.5                                       | 2.0                            | 3.15                                 | 3.4                            | 76.5                             | 0.0601                               | 0.0032                                | 553                                                 | 14000                | 300                      |

**Remark:** Thermal resistivity of soil 1.2 Km/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

## NYY-SWA

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Blue, Brown                            |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Armor</b>               | : Galvanized Steel Wires                 |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

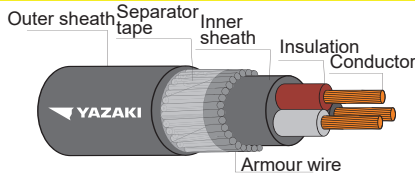
### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | A.C. Realstance | Inductance   | Reactance    | Impedence   |
|-----------------|----------------------------------------------------|----------------|-----------------|--------------|--------------|-------------|
|                 |                                                    |                | R<br>(Ω/km)     | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 1               | 1                                                  | Solid          | 21.7000         | 0.3771       | 0.1185       | 21.7000     |
|                 | 1                                                  | Non-compacted  | 21.7000         | 0.3651       | 0.1147       | 21.7000     |
|                 | 1.5                                                | Solid          | 14.5000         | 0.3505       | 0.1101       | 14.5000     |
|                 | 1.5                                                | Non-compacted  | 14.5000         | 0.3402       | 0.1069       | 14.5000     |
|                 | 2.5                                                | Solid          | 8.8700          | 0.3238       | 0.1017       | 8.8710      |
|                 | 2.5                                                | Non-compacted  | 8.8700          | 0.3160       | 0.0993       | 8.8710      |
|                 | 4                                                  | Solid          | 5.5200          | 0.3135       | 0.0085       | 5.5210      |
|                 | 4                                                  | Non-compacted  | 5.5200          | 0.3022       | 0.0950       | 5.5210      |
|                 | 6                                                  | Non-compacted  | 3.6900          | 0.2869       | 0.0901       | 3.6910      |
|                 | 10                                                 | Non-compacted  | 2.1900          | 0.2801       | 0.0880       | 2.1920      |
|                 | 16                                                 | Non-compacted  | 1.3800          | 0.2631       | 0.0827       | 1.3820      |
|                 | 25                                                 | Non-compacted  | 0.8700          | 0.2607       | 0.0819       | 0.8738      |
|                 | 35                                                 | Non-compacted  | 0.6272          | 0.2593       | 0.0814       | 0.6325      |
|                 | 50                                                 | Non-compacted  | 0.4634          | 0.2604       | 0.0818       | 0.4706      |
|                 | 70                                                 | Non-compacted  | 0.3212          | 0.2506       | 0.0787       | 0.3307      |
|                 | 95                                                 | Non-compacted  | 0.2317          | 0.2480       | 0.0779       | 0.2444      |
|                 | 120                                                | Non-compacted  | 0.1840          | 0.2409       | 0.0757       | 0.1990      |
|                 | 150                                                | Non-compacted  | 0.1495          | 0.2402       | 0.0755       | 0.1675      |
| 2               | 185                                                | Non-compacted  | 0.1201          | 0.2401       | 0.0754       | 0.1418      |
|                 | 240                                                | Non-compacted  | 0.0922          | 0.2361       | 0.0742       | 0.1183      |
|                 | 300                                                | Non-compacted  | 0.0744          | 0.2343       | 0.0736       | 0.1047      |

## NYY-SWA

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey                     |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Aarmor</b>              | : Galvanized Steel Wires                 |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

### APPLICATION

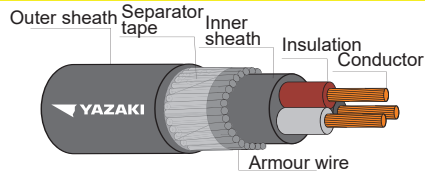
For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area | Conductor Type | Insulation Inner sheath thickness nominal | Inner sheath thickness approx. | Diameter of steel wire armor nominal | Outer Sheath thickness nominal | Overall diameter maximum approx. | Conductor resistance at 20°C maximum | Insulation resistance at 70°C minimum | Continuous current rating In ground at 30°C maximum | Cable weight approx. | Standard Length per drum |
|-----------------|------------------------------|----------------|-------------------------------------------|--------------------------------|--------------------------------------|--------------------------------|----------------------------------|--------------------------------------|---------------------------------------|-----------------------------------------------------|----------------------|--------------------------|
|                 | (mm <sup>2</sup> )           |                | (mm)                                      | (mm)                           | (mm)                                 | (mm)                           | (mm)                             | (Ω/km)                               | (MΩ·km)                               | (A)                                                 | (kg/km)              | (m)                      |
| 3               | 2.5                          | Solid          | 0.8                                       | 0.8                            | 0.8                                  | 1.8                            | 16.0                             | 7.41                                 | 0.0102                                | 30                                                  | 430                  | 500                      |
|                 | 4                            | Solid          | 0.9                                       | 0.8                            | 1.25                                 | 1.8                            | 18.5                             | 4.61                                 | 0.0094                                | 40                                                  | 650                  | 500                      |
|                 | 6                            | Non-compacted  | 0.9                                       | 0.8                            | 1.25                                 | 1.8                            | 20.5                             | 3.08                                 | 0.0073                                | 51                                                  | 800                  | 500                      |
|                 | 50                           | Non-compacted  | 1.5                                       | 1.5                            | 2.0                                  | 2.2                            | 39.5                             | 0.387                                | 0.0046                                | 168                                                 | 3600                 | 500                      |
|                 | 70                           | Non-compacted  | 1.5                                       | 1.5                            | 2.0                                  | 2.3                            | 44.0                             | 0.268                                | 0.0039                                | 209                                                 | 4600                 | 500                      |
|                 | 95                           | Non-compacted  | 1.7                                       | 1.5                            | 2.5                                  | 2.5                            | 50.5                             | 0.193                                | 0.0038                                | 248                                                 | 6500                 | 500                      |
|                 | 120                          | Non-compacted  | 1.7                                       | 1.8                            | 2.5                                  | 2.7                            | 55.0                             | 0.153                                | 0.0034                                | 283                                                 | 7500                 | 500                      |
|                 | 150                          | Non-compacted  | 1.9                                       | 1.8                            | 2.5                                  | 2.8                            | 59.5                             | 0.124                                | 0.0034                                | 310                                                 | 9000                 | 500                      |
|                 | 185                          | Non-compacted  | 2.1                                       | 2.0                            | 2.5                                  | 3.0                            | 65.5                             | 0.0991                               | 0.0034                                | 357                                                 | 10500                | 300                      |
|                 | 240                          | Non-compacted  | 2.3                                       | 2.0                            | 2.5                                  | 3.2                            | 72.5                             | 0.0754                               | 0.0033                                | 427                                                 | 13000                | 300                      |
|                 | 300                          | Non-compacted  | 2.5                                       | 2.2                            | 3.15                                 | 3.5                            | 81.0                             | 0.0601                               | 0.0032                                | 453                                                 | 17000                | 200                      |

**Remark:** Thermal relativity of soll 1.2 Km/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

## NYY-SWA

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



### CABLE STRUCTURE

|                            |                                          |
|----------------------------|------------------------------------------|
| <b>Conductor</b>           | : Solid or stranded annealed copper wire |
| <b>Insulation</b>          | : Polyvinyl chloride (PVC/C)             |
| <b>Core identification</b> | : Brown, Black, Grey                     |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)         |
| <b>Armor</b>               | : Galvanized Steel Wires                 |
| <b>Outer sheath</b>        | : Black polyvinyl Chloride (PVC/ST4)     |

### TECHNICAL DATA

|                           |                                                                                       |
|---------------------------|---------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 70°C<br>: Circuit voltage not exceeding 450/750 Volts |
| <b>Rated voltage</b>      | : 450 Volts between Line to Earth<br>: 750 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 2,500 volts                                                                         |
| <b>Reference standard</b> | : TIS 11 Part 101-2559 Table 4                                                        |

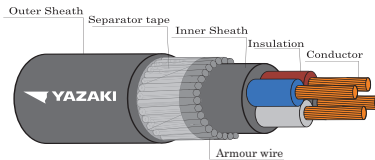
### APPLICATION

For Installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor Type | A.C. Realstance | Inductance   | Reactance    | Impedence   |
|-----------------|----------------------------------------------------|----------------|-----------------|--------------|--------------|-------------|
|                 |                                                    |                | R<br>(Ω/km)     | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 3               | 1                                                  | Solid          | 21.7000         | 0.3771       | 0.1185       | 21.7000     |
|                 | 1                                                  | Non-compacted  | 21.7000         | 0.3651       | 0.1147       | 21.7000     |
|                 | 1.5                                                | Solid          | 14.5000         | 0.3605       | 0.1101       | 14.5000     |
|                 | 1.5                                                | Non-compacted  | 14.5000         | 0.3402       | 0.1069       | 14.5000     |
|                 | 2.5                                                | Solid          | 8.8700          | 0.3238       | 0.1017       | 8.8710      |
|                 | 2.5                                                | Non-compacted  | 8.8700          | 0.3160       | 0.0993       | 8.8710      |
|                 | 4                                                  | Solid          | 5.5200          | 0.3135       | 0.0085       | 5.5210      |
|                 | 4                                                  | Non-compacted  | 5.5200          | 0.3022       | 0.0950       | 5.5210      |
|                 | 6                                                  | Non-compacted  | 3.6900          | 0.2869       | 0.0901       | 3.6910      |
|                 | 10                                                 | Non-compacted  | 2.1900          | 0.2801       | 0.0880       | 2.1920      |
|                 | 16                                                 | Non-compacted  | 1.3800          | 0.2831       | 0.0827       | 1.3820      |
|                 | 25                                                 | Non-compacted  | 0.8700          | 0.2607       | 0.0819       | 0.8738      |
|                 | 35                                                 | Non-compacted  | 0.6273          | 0.2593       | 0.0814       | 0.6326      |
|                 | 50                                                 | Non-compacted  | 0.4635          | 0.2604       | 0.0818       | 0.4707      |
|                 | 70                                                 | Non-compacted  | 0.3213          | 0.2506       | 0.0787       | 0.3308      |
|                 | 95                                                 | Non-compacted  | 0.2319          | 0.2480       | 0.0779       | 0.2446      |
|                 | 120                                                | Non-compacted  | 0.1843          | 0.2409       | 0.0757       | 0.1992      |
|                 | 150                                                | Non-compacted  | 0.1499          | 0.2402       | 0.0755       | 0.1678      |
|                 | 185                                                | Non-compacted  | 0.1205          | 0.2401       | 0.0754       | 0.1422      |
|                 | 240                                                | Non-compacted  | 0.0928          | 0.2361       | 0.0742       | 0.1188      |
|                 | 300                                                | Non-compacted  | 0.0751          | 0.2343       | 0.0736       | 0.1052      |

## NYY-SWA

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



### CABLE STRUCTURE

- Conductor** : Solid or Stranded annealed copper wire
- Insulation** : Polyvinyl chloride (PVC/C)
- Core identification** : Blue, Brown, Black, Grey
- Inner sheath** : Black polyvinyl chloride (PVC)
- Armor** : Galvanized Steel Wires
- Outer sheath** : Black polyvinyl chloride (PVC/ST4)

### TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth  
: 750 Volts between Line to Line
- AC Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2559 Table 4

### APPLICATION

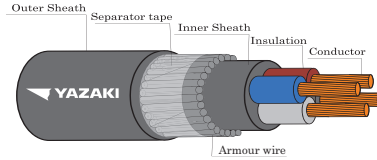
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Inner Sheath thickness approx.<br>(mm) | Diameter of steel wire armor nominal<br>(mm) | Outer Sheath thickness nominal<br>(mm) | Overall diameter maximum approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length per drum<br>(m) |
|-----------------|-----------------------------------------------|----------------|--------------------------------------|----------------------------------------|----------------------------------------------|----------------------------------------|------------------------------------------|------------------------------------------------|--------------------------------------------------|------------------------------------------------------------|---------------------------------|---------------------------------|
| 4               | 16                                            | Non-compacted  | 1.1                                  | 1.2                                    | 1.6                                          | 1.8                                    | 28.5                                     | 1.15                                           | 0.0057                                           | 88                                                         | 1880                            | 500                             |
|                 | 25                                            | Non-compacted  | 1.3                                  | 1.2                                    | 2.0                                          | 2.0                                    | 34.0                                     | 0.727                                          | 0.0054                                           | 115                                                        | 2730                            | 500                             |
|                 | 50                                            | Non-compacted  | 1.5                                  | 1.5                                    | 2.0                                          | 2.3                                    | 43.0                                     | 0.387                                          | 0.0046                                           | 168                                                        | 4300                            | 500                             |
|                 | 70                                            | Non-compacted  | 1.5                                  | 1.5                                    | 2.5                                          | 2.5                                    | 49.0                                     | 0.268                                          | 0.0039                                           | 209                                                        | 6000                            | 500                             |
|                 | 95                                            | Non-compacted  | 1.7                                  | 1.8                                    | 2.5                                          | 2.7                                    | 55.5                                     | 0.193                                          | 0.0038                                           | 248                                                        | 8000                            | 300                             |
|                 | 120                                           | Non-compacted  | 1.7                                  | 1.8                                    | 2.5                                          | 2.8                                    | 60.0                                     | 0.153                                          | 0.0034                                           | 283                                                        | 9000                            | 300                             |
|                 | 150                                           | Non-compacted  | 1.9                                  | 2.0                                    | 2.5                                          | 3.0                                    | 65.5                                     | 0.124                                          | 0.0034                                           | 310                                                        | 11000                           | 300                             |
|                 | 185                                           | Non-compacted  | 2.1                                  | 2.0                                    | 2.5                                          | 3.2                                    | 72.0                                     | 0.0991                                         | 0.0034                                           | 357                                                        | 13000                           | 300                             |
|                 | 240                                           | Non-compacted  | 2.3                                  | 2.2                                    | 3.15                                         | 3.5                                    | 81.5                                     | 0.0754                                         | 0.0033                                           | 427                                                        | 17500                           | 200                             |
|                 | 300                                           | Non-compacted  | 2.5                                  | 2.2                                    | 3.15                                         | 3.8                                    | 88.5                                     | 0.0601                                         | 0.0032                                           | 453                                                        | 21000                           | 200                             |

**Remark** : Thermal resistivity of soil 1.2 K.m./W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

## NYY-SWA

450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED POWER CABLE



### CABLE STRUCTURE

- Conductor** : Solid or Stranded annealed copper wire
- Insulation** : Polyvinyl chloride (PVC/C)
- Core identification** : Blue, Brown, Black, Grey
- Inner sheath** : Black polyvinyl chloride (PVC)
- Armor** : Galvanized Steel Wires
- Outer sheath** : Black polyvinyl chloride (PVC/ST4)

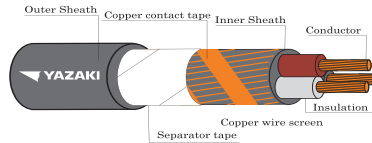
### TECHNICAL DATA

- Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth  
: 750 Volts between Line to Line
- AC Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2559 Table 4

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | A.C. Resistance | Inductance   | Reactance    | Impedance   |
|-----------------|----------------------------------------------------|----------------|-----------------|--------------|--------------|-------------|
|                 |                                                    |                | R<br>(Ω/km)     | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 4               | 1                                                  | Solid          | 21.7000         | 0.3771       | 0.1185       | 21.7000     |
|                 | 1                                                  | Non-compacted  | 21.7000         | 0.3651       | 0.1147       | 21.7000     |
|                 | 1.5                                                | Solid          | 14.5000         | 0.3505       | 0.1101       | 14.5000     |
|                 | 1.5                                                | Non-compacted  | 14.5000         | 0.3402       | 0.1069       | 14.5000     |
|                 | 2.5                                                | Solid          | 8.8700          | 0.3238       | 0.1017       | 8.8710      |
|                 | 2.5                                                | Non-compacted  | 8.8700          | 0.3160       | 0.0993       | 8.8710      |
|                 | 4                                                  | Solid          | 5.5200          | 0.3135       | 0.0985       | 5.5210      |
|                 | 4                                                  | Non-compacted  | 5.5200          | 0.3022       | 0.0950       | 5.5210      |
|                 | 6                                                  | Non-compacted  | 3.6900          | 0.2869       | 0.0901       | 3.6910      |
|                 | 10                                                 | Non-compacted  | 2.1900          | 0.2801       | 0.0880       | 2.1920      |
|                 | 16                                                 | Non-compacted  | 1.3800          | 0.2631       | 0.0827       | 1.3820      |
|                 | 25                                                 | Non-compacted  | 0.8700          | 0.2607       | 0.0819       | 0.8738      |
|                 | 35                                                 | Non-compacted  | 0.6273          | 0.2593       | 0.0814       | 0.6326      |
|                 | 50                                                 | Non-compacted  | 0.4635          | 0.2604       | 0.0818       | 0.4707      |
|                 | 70                                                 | Non-compacted  | 0.3213          | 0.2506       | 0.0787       | 0.3308      |
|                 | 95                                                 | Non-compacted  | 0.2319          | 0.2480       | 0.0779       | 0.2446      |
|                 | 120                                                | Non-compacted  | 0.1843          | 0.2409       | 0.0757       | 0.1992      |
|                 | 150                                                | Non-compacted  | 0.1499          | 0.2402       | 0.0755       | 0.1678      |
|                 | 185                                                | Non-compacted  | 0.1205          | 0.2401       | 0.0754       | 0.1422      |
|                 | 240                                                | Non-compacted  | 0.0928          | 0.2361       | 0.0742       | 0.1188      |
|                 | 300                                                | Non-compacted  | 0.0751          | 0.2343       | 0.0736       | 0.1052      |



### CABLE STRUCTURE

- Conductor** : Solid or Stranded annealed copper wire
- Insulation** : Polyvinyl chloride (PVC/C)
- Core identification** : Brown, Black, Grey
- Inner sheath** : Black polyvinyl chloride (PVC)
- Concentric shield** : Annealed copper wires with helix of copper tape fully covers
- Outer sheath** : Black polyvinyl chloride (PVC/ST4)

### TECHNICAL DATA

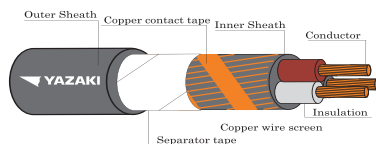
- Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth  
: 750 Volts between Line to Line
- AC Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2559 Table 4

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) |                   | Conductor type | Diameter of Concentric shield (mm) | Insulation thickness nominal (mm) | Inner Sheath thickness nominal (mm) | Outer Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C (Ω/km) | Insulation resistance at 70°C (MΩ·km) | Continuous current rating in free air at 40°C (A) | Continuous current rating in ground at 30°C (A) | Cable weight approx (kg/km) | Standard length per drum (m) |
|-----------------|-------------------------------------------------|-------------------|----------------|------------------------------------|-----------------------------------|-------------------------------------|-------------------------------------|-------------------------------|-------------------------------------|---------------------------------------|---------------------------------------------------|-------------------------------------------------|-----------------------------|------------------------------|
|                 | Phase                                           | Concentric Shield |                |                                    |                                   |                                     |                                     |                               |                                     |                                       |                                                   |                                                 |                             |                              |
| 3               | 1.5                                             | 1.5               | Solid          | 1.5                                | 0.8                               | 0.8                                 | 1.8                                 | 15.0                          | 12.1                                | 0.0123                                | 16                                                | 22                                              | 275                         | 500                          |
|                 | 2.5                                             | 2.5               | Solid          | 2.5                                | 0.8                               | 0.8                                 | 1.8                                 | 16.0                          | 7.41                                | 0.0102                                | 22                                                | 30                                              | 323                         | 500                          |
|                 | 4                                               | 4                 | Solid          | 4                                  | 0.9                               | 0.8                                 | 1.8                                 | 17.5                          | 4.61                                | 0.0094                                | 30                                                | 39                                              | 411                         | 500                          |
|                 | 6                                               | 6                 | Non-compacted  | 6                                  | 0.9                               | 0.8                                 | 1.8                                 | 20.0                          | 3.08                                | 0.0073                                | 37                                                | 50                                              | 551                         | 500                          |
|                 | 10                                              | 10                | Non-compacted  | 10                                 | 1.1                               | 0.8                                 | 1.8                                 | 23.0                          | 1.83                                | 0.0069                                | 52                                                | 68                                              | 797                         | 500                          |
|                 | 16                                              | 16                | Non-compacted  | 16                                 | 1.1                               | 1.2                                 | 2.0                                 | 26.5                          | 1.15                                | 0.0057                                | 66                                                | 87                                              | 1163                        | 500                          |
|                 | 25                                              | 16                | Non-compacted  | 16                                 | 1.3                               | 1.2                                 | 2.0                                 | 30.0                          | 0.727                               | 0.0054                                | 88                                                | 107                                             | 1538                        | 500                          |
|                 | 35                                              | 16                | Non-compacted  | 16                                 | 1.3                               | 1.2                                 | 2.0                                 | 33.0                          | 0.524                               | 0.0047                                | 107                                               | 122                                             | 1962                        | 500                          |
|                 | 50                                              | 25                | Non-compacted  | 25                                 | 1.5                               | 1.5                                 | 2.2                                 | 38.0                          | 0.387                               | 0.0046                                | 130                                               | 142                                             | 2613                        | 500                          |
|                 | 70                                              | 35                | Non-compacted  | 35                                 | 1.5                               | 1.5                                 | 2.2                                 | 42.5                          | 0.268                               | 0.0039                                | 162                                               | 178                                             | 3556                        | 500                          |
|                 | 95                                              | 50                | Non-compacted  | 50                                 | 1.7                               | 1.5                                 | 2.4                                 | 47.5                          | 0.193                               | 0.0038                                | 200                                               | 219                                             | 4788                        | 500                          |
|                 | 120                                             | 70                | Non-compacted  | 70                                 | 1.7                               | 1.8                                 | 2.6                                 | 52.5                          | 0.153                               | 0.0034                                | 233                                               | 254                                             | 6015                        | 500                          |
|                 | 150                                             | 95                | Non-compacted  | 95                                 | 1.9                               | 1.8                                 | 2.8                                 | 58.0                          | 0.124                               | 0.0034                                | 266                                               | 290                                             | 7398                        | 500                          |
|                 | 185                                             | 95                | Non-compacted  | 95                                 | 2.1                               | 2.0                                 | 3.0                                 | 64.0                          | 0.0991                              | 0.0034                                | 306                                               | 332                                             | 8974                        | 500                          |
|                 | 240                                             | 120               | Non-compacted  | 120                                | 2.3                               | 2.0                                 | 3.2                                 | 71.0                          | 0.0754                              | 0.0033                                | 364                                               | 389                                             | 11448                       | 300                          |
|                 | 300                                             | 150               | Non-compacted  | 150                                | 2.5                               | 2.2                                 | 3.4                                 | 79.0                          | 0.0601                              | 0.0032                                | 417                                               | 445                                             | 14200                       | 300                          |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

**450/750 V 70°C PVC INSULATED AND DOUBLE SHEATHED, WITH CONCENTRIC CONDUCTORS POWER CABLE**

**CABLE STRUCTURE**

- Conductor** : Solid or Stranded annealed copper wire
- Insulation** : Polyvinyl chloride (PVC/C)
- Core identification** : Brown, Black, Grey
- Inner sheath** : Black polyvinyl chloride (PVC)
- Concentric shield** : Annealed copper wires with helix of copper tape fully covers
- Outer sheath** : Black polyvinyl chloride (PVC/ST4)

**TECHNICAL DATA**

- Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 450/750 Volts
- Rated voltage** : 450 Volts between Line to Earth  
: 750 Volts between Line to Line
- AC Testing voltage** : 2,500 Volts
- Reference standard** : TIS 11 Part 101-2559 Table 4

**APPLICATION**

For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | A.C. Resistance | Inductance   | Reactance    | Impedance   |
|-----------------|----------------------------------------------------|----------------|-----------------|--------------|--------------|-------------|
|                 |                                                    |                | R<br>(Ω/km)     | L<br>(mH/km) | XL<br>(Ω/km) | Z<br>(Ω/km) |
| 3               | 1.5                                                | Solid          | 14.5000         | 0.3505       | 0.1101       | 14.5000     |
|                 | 1.5                                                | Stranded       | 14.5000         | 0.3402       | 0.1069       | 14.5000     |
|                 | 2.5                                                | Solid          | 8.8700          | 0.3238       | 0.1017       | 8.8710      |
|                 | 2.5                                                | Stranded       | 8.8700          | 0.3160       | 0.0993       | 8.8710      |
|                 | 4                                                  | Solid          | 5.5200          | 0.3135       | 0.0985       | 5.5210      |
|                 | 4                                                  | Stranded       | 5.5200          | 0.3022       | 0.0950       | 5.5210      |
|                 | 6                                                  | Stranded       | 3.6900          | 0.2869       | 0.0901       | 3.6910      |
|                 | 10                                                 | Stranded       | 2.1900          | 0.2801       | 0.0880       | 2.1920      |
|                 | 16                                                 | Stranded       | 1.3800          | 0.2631       | 0.0827       | 1.3820      |
|                 | 25                                                 | Stranded       | 0.8700          | 0.2607       | 0.0819       | 0.8738      |
|                 | 35                                                 | Stranded       | 0.6273          | 0.2593       | 0.0814       | 0.6326      |
|                 | 50                                                 | Stranded       | 0.4635          | 0.2604       | 0.0818       | 0.4707      |
|                 | 70                                                 | Stranded       | 0.3213          | 0.2506       | 0.0787       | 0.3308      |
|                 | 95                                                 | Stranded       | 0.2319          | 0.2480       | 0.0779       | 0.2446      |
|                 | 120                                                | Stranded       | 0.1843          | 0.2409       | 0.0757       | 0.1992      |
|                 | 150                                                | Stranded       | 0.1499          | 0.2402       | 0.0755       | 0.1678      |
|                 | 185                                                | Stranded       | 0.1205          | 0.2401       | 0.0754       | 0.1422      |
|                 | 240                                                | Stranded       | 0.0928          | 0.2361       | 0.0742       | 0.1188      |
|                 | 300                                                | Stranded       | 0.0751          | 0.2343       | 0.0736       | 0.1052      |

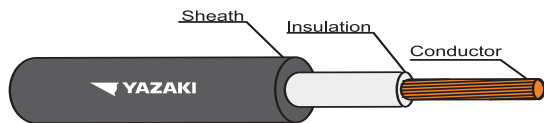
# FD-0.6/1KV-CV or YK FD-0.6/1KV-CV



0.6/1KV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE

IEC 60502-1

TIS 2143 PART 1-2567



## CABLE STRUCTURE

|                            |                                                             |
|----------------------------|-------------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper wire |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                          |
| <b>Core identification</b> | : Natural (Translucent)                                     |
| <b>Sheath</b>              | : Black flame retardant polyvinyl chloride (PVC/ST2)        |

## TECHNICAL DATA

|                           |                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts     |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                           |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24; Category C, TIS 2143 PART 1-2567 |

## APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Cable name       | Number x Size of conductor<br>(No.x mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ.km) | Continuous current rating in free air at 40°C maximum (A) |          |         | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx<br>(kg/km) | Standard length per drum<br>(m) |
|------------------|-------------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|----------|---------|------------------------------------------------------------|--------------------------------|---------------------------------|
|                  |                                                       |                |                                      |                                  |                                  |                                                |                                                  | Spaced                                                    | Touching | Trefoil |                                                            |                                |                                 |
| FD-0.6/1KV-CV    | 1x1.5                                                 | Non-compacted  | 0.7                                  | 1.4                              | 6.5                              | 12.1                                           | 2,500                                            | 31                                                        | 24       | 23      | 33                                                         | 51                             | 500                             |
| YK FD-0.6/1KV-CV | 1x2.5                                                 | Non-compacted  | 0.7                                  | 1.4                              | 7.0                              | 7.41                                           | 2,100                                            | 42                                                        | 32       | 31      | 43                                                         | 65                             | 1000                            |
|                  | 1x4                                                   | Non-compacted  | 0.7                                  | 1.4                              | 7.5                              | 4.61                                           | 1,700                                            | 54                                                        | 42       | 41      | 55                                                         | 85                             | 1000                            |
|                  | 1x6                                                   | Non-compacted  | 0.7                                  | 1.4                              | 8.5                              | 3.08                                           | 1,450                                            | 68                                                        | 53       | 52      | 70                                                         | 110                            | 1000                            |
|                  | 1x10                                                  | Non-compacted  | 0.7                                  | 1.4                              | 9.0                              | 1.83                                           | 1,250                                            | 90                                                        | 73       | 71      | 92                                                         | 150                            | 1000                            |
|                  | 1x16                                                  | Compacted      | 0.7                                  | 1.4                              | 10.0                             | 1.15                                           | 1,000                                            | 124                                                       | 95       | 93      | 119                                                        | 210                            | 1000                            |
|                  | 1x25                                                  | Compacted      | 0.9                                  | 1.4                              | 11.5                             | 0.727                                          | 1,050                                            | 166                                                       | 128      | 123     | 152                                                        | 310                            | 1000                            |
|                  | 1x35                                                  | Compacted      | 0.9                                  | 1.4                              | 12.5                             | 0.524                                          | 900                                              | 206                                                       | 160      | 154     | 184                                                        | 400                            | 1000                            |
|                  | 1x50                                                  | Compacted      | 1.0                                  | 1.7                              | 14.5                             | 0.387                                          | 850                                              | 250                                                       | 197      | 188     | 217                                                        | 550                            | 1000                            |
|                  | 1x70                                                  | Compacted      | 1.1                                  | 1.4                              | 16.0                             | 0.268                                          | 800                                              | 321                                                       | 254      | 244     | 266                                                        | 720                            | 1000                            |
|                  | 1x95                                                  | Compacted      | 1.1                                  | 1.5                              | 18.0                             | 0.193                                          | 650                                              | 391                                                       | 311      | 298     | 318                                                        | 1250                           | 1000                            |
|                  | 1x120                                                 | Compacted      | 1.2                                  | 1.8                              | 20.5                             | 0.153                                          | 650                                              | 455                                                       | 364      | 349     | 362                                                        | 1200                           | 1000                            |
|                  | 1x150                                                 | Compacted      | 1.4                                  | 1.6                              | 21.5                             | 0.124                                          | 700                                              | 525                                                       | 422      | 404     | 406                                                        | 1490                           | 1000                            |
|                  | 1x185                                                 | Compacted      | 1.6                                  | 1.6                              | 23.5                             | 0.0991                                         | 700                                              | 602                                                       | 485      | 464     | 459                                                        | 1850                           | 1000                            |
|                  | 1x240                                                 | Compacted      | 1.7                                  | 1.7                              | 26.5                             | 0.0754                                         | 650                                              | 711                                                       | 577      | 552     | 533                                                        | 2390                           | 1000                            |
| FD-0.6/1KV-CV    | 1x300                                                 | Compacted      | 1.8                                  | 2.5                              | 30.5                             | 0.0601                                         | 600                                              | 821                                                       | 670      | 640     | 601                                                        | 3149                           | 500                             |
|                  | 1x400                                                 | Compacted      | 2.0                                  | 2.7                              | 34.0                             | 0.0470                                         | 600                                              | 987                                                       | 790      | 749     | 684                                                        | 4026                           | 500                             |
|                  | 1x500                                                 | Compacted      | 2.2                                  | 3.0                              | 38.5                             | 0.0366                                         | 600                                              | 1140                                                      | 908      | 861     | 777                                                        | 5165                           | 500                             |
|                  | 1x630                                                 | Compacted      | 2.4                                  | 3.3                              | 43.0                             | 0.0283                                         | 550                                              | 1298                                                      | 1064     | 1014    | 1229                                                       | 6616                           | 500                             |
|                  | 1x800                                                 | Compacted      | 2.6                                  | 3.6                              | 48.0                             | 0.0221                                         | 550                                              | 1494                                                      | 1220     | 1156    | 1380                                                       | 8290                           | 500                             |

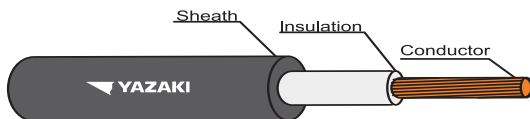
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

# FD-0.6/1KV-CV or YK FD-0.6/1KV-CV

0.6/1kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE

IEC 60502-1

TIS 2143 PART 1-2567



## CABLE STRUCTURE

|                            |                                                             |
|----------------------------|-------------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper wire |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                          |
| <b>Core identification</b> | : Natural (Translucent)                                     |
| <b>Sheath</b>              | : Black flame retardant polyvinyl chloride (PVC/ST2)        |

## TECHNICAL DATA

|                           |                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts     |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                           |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24; Category C, TIS 2143 PART 1-2567 |

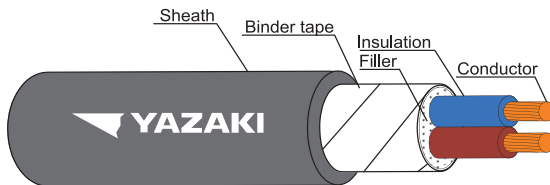
## APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Cable name       | Number<br>x Size<br>of<br>conductor<br>(No.x mm <sup>2</sup> ) | Conductor<br>type | A.C. Resistance<br>R<br>(Ω/km) |          |         | Inductance<br>L<br>(mH/km) |          |         | Reactance<br>XL<br>(Ω/km) |          |         | Impedance<br>Z<br>(Ω/km) |          |         |
|------------------|----------------------------------------------------------------|-------------------|--------------------------------|----------|---------|----------------------------|----------|---------|---------------------------|----------|---------|--------------------------|----------|---------|
|                  |                                                                |                   | Spaced                         | Touching | Trefoil | Spaced                     | Touching | Trefoil | Spaced                    | Touching | Trefoil | Spaced                   | Touching | Trefoil |
| FD-0.6/1KV-CV    | 1x1.5                                                          | Non-compacted     | 15.4287                        | 15.4287  | 15.4287 | 0.6630                     | 0.5244   | 0.4782  | 0.2083                    | 0.1647   | 0.1502  | 15.4301                  | 15.4296  | 15.4294 |
| YK FD-0.6/1KV-CV | 1x2.5                                                          | Non-compacted     | 9.4485                         | 9.4485   | 9.4485  | 0.6314                     | 0.4928   | 0.4466  | 0.1984                    | 0.1548   | 0.1403  | 9.4506                   | 9.4498   | 9.4495  |
|                  | 1x4                                                            | Non-compacted     | 5.8782                         | 5.8782   | 5.8782  | 0.5988                     | 0.4602   | 0.4140  | 0.1881                    | 0.1446   | 0.1301  | 5.8812                   | 5.8800   | 5.8796  |
|                  | 1x6                                                            | Non-compacted     | 3.9273                         | 3.9273   | 3.9273  | 0.5754                     | 0.4368   | 0.3906  | 0.1808                    | 0.1372   | 0.1227  | 3.9315                   | 3.9297   | 3.9292  |
|                  | 1x10                                                           | Non-compacted     | 2.3335                         | 2.3335   | 2.3335  | 0.5459                     | 0.4072   | 0.3610  | 0.1715                    | 0.1279   | 0.1134  | 2.3398                   | 2.3370   | 2.3363  |
|                  | 1x16                                                           | Compacted         | 1.4664                         | 1.4664   | 1.4665  | 0.5284                     | 0.3898   | 0.3436  | 0.1660                    | 0.1225   | 0.1079  | 1.4758                   | 1.4715   | 1.4705  |
|                  | 1x25                                                           | Compacted         | 0.9271                         | 0.9271   | 0.9272  | 0.5159                     | 0.3772   | 0.3310  | 0.1621                    | 0.1185   | 0.1040  | 0.9412                   | 0.9346   | 0.9330  |
|                  | 1x35                                                           | Compacted         | 0.6683                         | 0.6683   | 0.6684  | 0.5017                     | 0.3630   | 0.3168  | 0.1576                    | 0.1140   | 0.0995  | 0.6866                   | 0.6780   | 0.6758  |
|                  | 1x50                                                           | Compacted         | 0.4937                         | 0.4937   | 0.4938  | 0.4913                     | 0.3527   | 0.3065  | 0.1543                    | 0.1108   | 0.0963  | 0.5173                   | 0.5060   | 0.5031  |
|                  | 1x70                                                           | Compacted         | 0.3420                         | 0.3421   | 0.3422  | 0.4716                     | 0.3330   | 0.2867  | 0.1482                    | 0.1046   | 0.0901  | 0.3727                   | 0.3577   | 0.3539  |
|                  | 1x95                                                           | Compacted         | 0.2465                         | 0.2467   | 0.2468  | 0.4651                     | 0.3265   | 0.2803  | 0.1461                    | 0.1026   | 0.0881  | 0.2866                   | 0.2672   | 0.2620  |
|                  | 1x120                                                          | Compacted         | 0.1956                         | 0.1959   | 0.1961  | 0.4587                     | 0.3201   | 0.2738  | 0.1441                    | 0.1006   | 0.0860  | 0.2430                   | 0.2202   | 0.2141  |
|                  | 1x150                                                          | Compacted         | 0.1587                         | 0.1591   | 0.1593  | 0.4555                     | 0.3169   | 0.2706  | 0.1431                    | 0.0996   | 0.0850  | 0.2137                   | 0.1877   | 0.1806  |
| FD-0.6/1KV-CV    | 1x185                                                          | Compacted         | 0.1271                         | 0.1275   | 0.1279  | 0.4536                     | 0.3149   | 0.2687  | 0.1425                    | 0.0989   | 0.0844  | 0.1909                   | 0.1614   | 0.1532  |
|                  | 1x240                                                          | Compacted         | 0.0972                         | 0.0977   | 0.0982  | 0.4484                     | 0.3098   | 0.2635  | 0.1409                    | 0.0973   | 0.0828  | 0.1711                   | 0.1379   | 0.1284  |
|                  | 1x300                                                          | Compacted         | 0.0779                         | 0.0787   | 0.0792  | 0.4413                     | 0.3027   | 0.2565  | 0.1386                    | 0.0951   | 0.0806  | 0.1590                   | 0.1234   | 0.1130  |
|                  | 1x400                                                          | Compacted         | 0.0616                         | 0.0625   | 0.0632  | 0.4393                     | 0.3007   | 0.2545  | 0.1380                    | 0.0945   | 0.0800  | 0.1511                   | 0.1133   | 0.1019  |
|                  | 1x500                                                          | Compacted         | 0.0488                         | 0.0499   | 0.0509  | 0.4365                     | 0.2979   | 0.2517  | 0.1371                    | 0.0936   | 0.0791  | 0.1456                   | 0.1061   | 0.0940  |
|                  | 1x630                                                          | Compacted         | 0.0387                         | 0.0402   | 0.0414  | 0.4341                     | 0.2954   | 0.2492  | 0.1364                    | 0.0928   | 0.0783  | 0.1418                   | 0.1011   | 0.0886  |
|                  | 1x800                                                          | Compacted         | 0.0314                         | 0.0332   | 0.0346  | 0.4309                     | 0.2923   | 0.2461  | 0.1354                    | 0.0918   | 0.0773  | 0.1390                   | 0.0976   | 0.0847  |

# FD-0.6/1KV-CV or YK FD-0.6/1KV-CV

0.6/1KV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE



IEC 60502-1

TIS 2143 PART 1-2567



## CABLE STRUCTURE

|                            |                                                             |
|----------------------------|-------------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper wire |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                          |
| <b>Core identification</b> | : Blue, Brown                                               |
| <b>Filler</b>              | : Non-hygroscopic material                                  |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                      |
| <b>Sheath</b>              | : Black flame retardant polyvinyl chloride (PVC/ST2)        |

## TECHNICAL DATA

|                           |                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts     |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                           |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24; Category C, TIS 2143 PART 1-2567 |

## APPLICATION

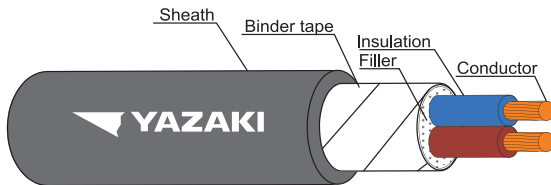
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Cable name       | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx<br>(kg/km) | Standard length per drum<br>(m) |
|------------------|--------------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|--------------------------------|---------------------------------|
| FD-0.6/1KV-CV    | 2x1.5                                                  | Non-compacted  | 0.7                                  | 1.8                              | 11.5                             | 12.1                                           | 2,500                                            | 27                                                           | 33                                                         | 128                            | 500                             |
|                  | 2x2.5                                                  | Non-compacted  | 0.7                                  | 1.8                              | 13.0                             | 7.41                                           | 2,100                                            | 36                                                           | 44                                                         | 180                            | 1000                            |
|                  | 2x4                                                    | Non-compacted  | 0.7                                  | 1.8                              | 14.0                             | 4.61                                           | 1,700                                            | 47                                                           | 58                                                         | 220                            | 1000                            |
|                  | 2x6                                                    | Non-compacted  | 0.7                                  | 1.8                              | 14.5                             | 3.08                                           | 1,450                                            | 60                                                           | 73                                                         | 260                            | 1000                            |
|                  | 2x10                                                   | Non-compacted  | 0.7                                  | 1.8                              | 16.5                             | 1.83                                           | 1,250                                            | 81                                                           | 97                                                         | 370                            | 1000                            |
| YK FD-0.6/1KV-CV | 2x16                                                   | Compacted      | 0.7                                  | 1.8                              | 18.5                             | 1.15                                           | 1,000                                            | 107                                                          | 125                                                        | 510                            | 1000                            |
|                  | 2x25                                                   | Compacted      | 0.9                                  | 1.8                              | 22.0                             | 0.727                                          | 1,050                                            | 143                                                          | 165                                                        | 740                            | 1000                            |
|                  | 2x35                                                   | Compacted      | 0.9                                  | 1.8                              | 24.0                             | 0.524                                          | 900                                              | 175                                                          | 195                                                        | 950                            | 1000                            |
|                  | 2x50                                                   | Compacted      | 1.0                                  | 2.0                              | 27.0                             | 0.387                                          | 850                                              | 214                                                          | 235                                                        | 1260                           | 1000                            |
|                  | 2x70                                                   | Compacted      | 1.1                                  | 2.0                              | 31.0                             | 0.268                                          | 800                                              | 270                                                          | 290                                                        | 1730                           | 1000                            |
|                  | 2x95                                                   | Compacted      | 1.1                                  | 4.0                              | 38.0                             | 0.193                                          | 650                                              | 329                                                          | 350                                                        | 2618                           | 500                             |
|                  | 2x120                                                  | Compacted      | 1.2                                  | 4.0                              | 41.5                             | 0.153                                          | 650                                              | 381                                                          | 400                                                        | 3226                           | 500                             |
| FD-0.6/1KV-CV    | 2x150                                                  | Compacted      | 1.4                                  | 4.0                              | 45.5                             | 0.124                                          | 700                                              | 436                                                          | 450                                                        | 3879                           | 500                             |
|                  | 2x185                                                  | Compacted      | 1.6                                  | 4.0                              | 49.5                             | 0.0991                                         | 700                                              | 503                                                          | 505                                                        | 4745                           | 500                             |
|                  | 2x240                                                  | Compacted      | 1.7                                  | 4.0                              | 55.0                             | 0.0754                                         | 650                                              | 593                                                          | 585                                                        | 6055                           | 500                             |
|                  | 2x300                                                  | Compacted      | 1.8                                  | 4.0                              | 60.0                             | 0.0601                                         | 600                                              | 676                                                          | 665                                                        | 7407                           | 500                             |
|                  | 2x400                                                  | Compacted      | 2.0                                  | 4.0                              | 66.5                             | 0.0470                                         | 600                                              | 777                                                          | 750                                                        | 9262                           | 300                             |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

# FD-0.6/1KV-CV or YK FD-0.6/1KV-CV

0.6/1KV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE



IEC 60502-1

TIS 2143 PART 1-2567



## CABLE STRUCTURE

|                            |                                                             |
|----------------------------|-------------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper wire |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                          |
| <b>Core identification</b> | : Blue, Brown                                               |
| <b>Filler</b>              | : Non-hygroscopic material                                  |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                      |
| <b>Sheath</b>              | : Black flame retardant polyvinyl chloride (PVC/ST2)        |

## TECHNICAL DATA

|                           |                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts     |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                           |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24; Category C, TIS 2143 PART 1-2567 |

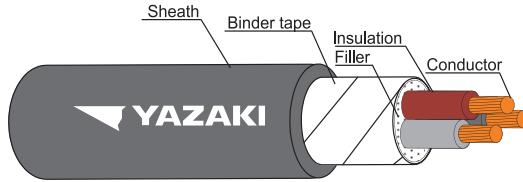
## APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Cable name       | Number x Size of conductor<br>(No.x mm <sup>2</sup> ) | Conductor type | A.C. Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|------------------|-------------------------------------------------------|----------------|--------------------------------|----------------------------|---------------------------|--------------------------|
| FD-0.6/1KV-CV    | 2x1.5                                                 | Non-compacted  | 15.4287                        | 0.3427                     | 0.1077                    | 15.4291                  |
| YK FD-0.6/1KV-CV | 2x2.5                                                 | Non-compacted  | 9.4485                         | 0.3210                     | 0.1009                    | 9.4490                   |
|                  | 2x4                                                   | Non-compacted  | 5.8782                         | 0.3010                     | 0.0946                    | 5.8790                   |
|                  | 2x6                                                   | Non-compacted  | 3.9273                         | 0.2871                     | 0.0902                    | 3.9284                   |
|                  | 2x10                                                  | Non-compacted  | 2.3335                         | 0.2710                     | 0.0851                    | 2.3351                   |
|                  | 2x16                                                  | Compacted      | 1.4665                         | 0.2624                     | 0.0824                    | 1.4688                   |
|                  | 2x25                                                  | Compacted      | 0.9272                         | 0.2645                     | 0.0831                    | 0.9309                   |
|                  | 2x35                                                  | Compacted      | 0.6684                         | 0.2569                     | 0.0807                    | 0.6733                   |
| FD-0.6/1KV-CV    | 2x50                                                  | Compacted      | 0.4938                         | 0.2536                     | 0.0797                    | 0.5002                   |
|                  | 2x70                                                  | Compacted      | 0.3422                         | 0.2421                     | 0.0761                    | 0.3506                   |
|                  | 2x95                                                  | Compacted      | 0.2468                         | 0.2331                     | 0.0732                    | 0.2575                   |
|                  | 2x120                                                 | Compacted      | 0.1960                         | 0.2315                     | 0.0727                    | 0.2091                   |
|                  | 2x150                                                 | Compacted      | 0.1593                         | 0.2302                     | 0.0723                    | 0.1749                   |
|                  | 2x185                                                 | Compacted      | 0.1278                         | 0.2338                     | 0.0734                    | 0.1474                   |
|                  | 2x240                                                 | Compacted      | 0.0981                         | 0.2295                     | 0.0721                    | 0.1217                   |
|                  | 2x300                                                 | Compacted      | 0.0791                         | 0.2260                     | 0.0710                    | 0.1063                   |
|                  | 2x400                                                 | Compacted      | 0.0630                         | 0.2259                     | 0.0710                    | 0.0949                   |

# FD-0.6/1KV-CV or YK FD-0.6/1KV-CV

0.6/1KV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE



IEC 60502-1

TIS 2143 PART 1-2567



## CABLE STRUCTURE

- Conductor** : Non-compacted and compacted stranded annealed copper wire
- Insulation** : Cross-Linked polyethylene (XLPE)
- Core identification** : Brown, Black, Grey
- Filler** : Non-hygroscopic material
- Binder tape** : Non-hygroscopic tape
- Sheath** : Black flame retardant polyvinyl chloride (PVC/ST2)

## TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 1,200 Volts
- Rated voltage** : 600 Volts between Line to Earth  
: 1,000 Volts between Line to Line
- AC Testing voltage** : 3,500 Volts
- Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24; Category C, TIS 2143 PART 1-2567

## APPLICATION

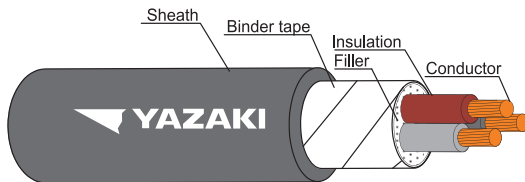
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Cable name       | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ-km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx<br>(kg/km) | Standard length per drum<br>(m) |
|------------------|--------------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|--------------------------------|---------------------------------|
| FD-0.6/1KV-CV    | 3x1.5                                                  | Non-compacted  | 0.7                                  | 1.8                              | 12.0                             | 12.1                                           | 2,500                                            | 22                                                           | 28                                                         | 150                            | 500                             |
| YK FD-0.6/1KV-CV | 3x2.5                                                  | Non-compacted  | 0.7                                  | 1.8                              | 13.0                             | 7.41                                           | 2,100                                            | 29                                                           | 43                                                         | 200                            | 1000                            |
|                  | 3x4                                                    | Non-compacted  | 0.7                                  | 1.8                              | 14.5                             | 4.61                                           | 1,700                                            | 38                                                           | 55                                                         | 270                            | 1000                            |
|                  | 3x6                                                    | Non-compacted  | 0.7                                  | 1.8                              | 16.0                             | 3.08                                           | 1,450                                            | 49                                                           | 70                                                         | 340                            | 1000                            |
|                  | 3x10                                                   | Non-compacted  | 0.7                                  | 1.8                              | 17.5                             | 1.83                                           | 1,250                                            | 68                                                           | 92                                                         | 480                            | 1000                            |
|                  | 3x16                                                   | Compacted      | 0.7                                  | 1.8                              | 19.5                             | 1.15                                           | 1,000                                            | 91                                                           | 119                                                        | 660                            | 1000                            |
|                  | 3x25                                                   | Compacted      | 0.9                                  | 1.8                              | 23.0                             | 0.727                                          | 1,050                                            | 116                                                          | 152                                                        | 970                            | 1000                            |
|                  | 3x35                                                   | Compacted      | 0.9                                  | 1.8                              | 25.5                             | 0.524                                          | 900                                              | 144                                                          | 184                                                        | 1270                           | 1000                            |
|                  | 3x50                                                   | Compacted      | 1.0                                  | 2.0                              | 29.0                             | 0.387                                          | 850                                              | 175                                                          | 217                                                        | 1690                           | 1000                            |
| FD-0.6/1KV-CV    | 3x70                                                   | Compacted      | 1.1                                  | 2.0                              | 33.0                             | 0.268                                          | 800                                              | 224                                                          | 266                                                        | 2340                           | 1000                            |
|                  | 3x95                                                   | Compacted      | 1.1                                  | 4.0                              | 40.5                             | 0.193                                          | 650                                              | 272                                                          | 295                                                        | 3490                           | 500                             |
|                  | 3x120                                                  | Compacted      | 1.2                                  | 4.0                              | 44.0                             | 0.153                                          | 650                                              | 320                                                          | 335                                                        | 4325                           | 500                             |
|                  | 3x150                                                  | Compacted      | 1.4                                  | 4.0                              | 48.0                             | 0.124                                          | 700                                              | 366                                                          | 380                                                        | 5247                           | 500                             |
|                  | 3x185                                                  | Compacted      | 1.6                                  | 4.0                              | 53.0                             | 0.0991                                         | 700                                              | 422                                                          | 425                                                        | 6438                           | 500                             |
|                  | 3x240                                                  | Compacted      | 1.7                                  | 4.0                              | 59.0                             | 0.0754                                         | 650                                              | 498                                                          | 495                                                        | 8280                           | 500                             |
|                  | 3x300                                                  | Compacted      | 1.8                                  | 4.0                              | 64.0                             | 0.0601                                         | 600                                              | 567                                                          | 560                                                        | 10183                          | 300                             |
|                  | 3x400                                                  | Compacted      | 2.0                                  | 4.0                              | 71.0                             | 0.0470                                         | 600                                              | 652                                                          | 630                                                        | 12776                          | 300                             |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

# FD-0.6/1KV-CV or YK FD-0.6/1KV-CV

0.6/1kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE



IEC 60502-1

TIS 2143 PART 1-2567



## CABLE STRUCTURE

|                            |                                                             |
|----------------------------|-------------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper wire |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                          |
| <b>Core identification</b> | : Brown, Black, Grey                                        |
| <b>Filler</b>              | : Non-hygroscopic material                                  |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                      |
| <b>Sheath</b>              | : Black flame retardant polyvinyl chloride (PVC/ST2)        |

## TECHNICAL DATA

|                           |                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts     |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                           |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24; Category C, TIS 2143 PART 1-2567 |

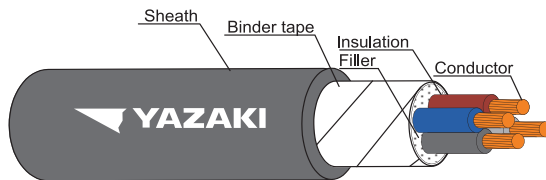
## APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Cable name       | Number x Size of conductor<br>(No.x mm <sup>2</sup> ) | Conductor type | A.C. Resistance<br>R (Ω/km) | Inductance<br>L (mH/km) | Reactance<br>XL (Ω/km) | Impedance<br>Z (Ω/km) |
|------------------|-------------------------------------------------------|----------------|-----------------------------|-------------------------|------------------------|-----------------------|
| FD-0.6/1KV-CV    | 3x1.5                                                 | Non-compacted  | 15.4287                     | 0.3427                  | 0.1077                 | 15.4291               |
|                  | 3x2.5                                                 | Non-compacted  | 9.4485                      | 0.3210                  | 0.1009                 | 9.4490                |
|                  | 3x4                                                   | Non-compacted  | 5.8782                      | 0.3010                  | 0.0946                 | 5.8790                |
|                  | 3x6                                                   | Non-compacted  | 3.9274                      | 0.2871                  | 0.0902                 | 3.9284                |
|                  | 3x10                                                  | Non-compacted  | 2.3335                      | 0.2710                  | 0.0851                 | 2.3351                |
| YK FD-0.6/1KV-CV | 3x16                                                  | Compacted      | 1.4665                      | 0.2624                  | 0.0824                 | 1.4688                |
|                  | 3x25                                                  | Compacted      | 0.9272                      | 0.2645                  | 0.0831                 | 0.9309                |
|                  | 3x35                                                  | Compacted      | 0.6685                      | 0.2569                  | 0.0807                 | 0.6733                |
|                  | 3x50                                                  | Compacted      | 0.4939                      | 0.2536                  | 0.0797                 | 0.5003                |
|                  | 3x70                                                  | Compacted      | 0.3424                      | 0.2421                  | 0.0761                 | 0.3507                |
| FD-0.6/1KV-CV    | 3x95                                                  | Compacted      | 0.2471                      | 0.2331                  | 0.0732                 | 0.2577                |
|                  | 3x120                                                 | Compacted      | 0.1964                      | 0.2315                  | 0.0727                 | 0.2094                |
|                  | 3x150                                                 | Compacted      | 0.1597                      | 0.2302                  | 0.0723                 | 0.1753                |
|                  | 3x185                                                 | Compacted      | 0.1282                      | 0.2338                  | 0.0734                 | 0.1478                |
|                  | 3x240                                                 | Compacted      | 0.0987                      | 0.2295                  | 0.0721                 | 0.1222                |
|                  | 3x300                                                 | Compacted      | 0.0798                      | 0.2260                  | 0.0710                 | 0.1068                |
|                  | 3x400                                                 | Compacted      | 0.0639                      | 0.2259                  | 0.0710                 | 0.0955                |

# FD-0.6/1KV-CV or YK FD-0.6/1KV-CV

0.6/1KV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE



IEC 60502-1

TIS 2143 PART 1-2567



## CABLE STRUCTURE

|                            |                                                             |
|----------------------------|-------------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper wire |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                          |
| <b>Core identification</b> | : Blue, Brown, Black, Grey                                  |
| <b>Filler</b>              | : Non-hygroscopic material                                  |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                      |
| <b>Sheath</b>              | : Black flame retardant polyvinyl chloride (PVC/ST2)        |

## TECHNICAL DATA

|                           |                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts     |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                           |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24; Category C, TIS 2143 PART 1-2567 |

## APPLICATION

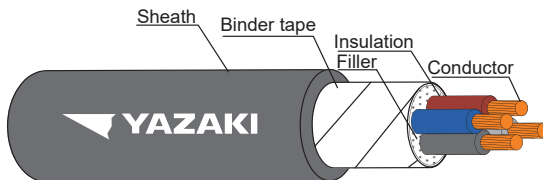
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Cable name       | Number x Size of conductor<br>(No.x mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ.km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx<br>(kg/km) | Standard length per drum<br>(m) |
|------------------|-------------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|--------------------------------|---------------------------------|
| FD-0.6/1KV-CV    | 4x1.5                                                 | Non-compacted  | 0.7                                  | 1.8                              | 12.5                             | 12.1                                           | 2,500                                            | 22                                                           | 28                                                         | 176                            | 500                             |
| YK FD-0.6/1KV-CV | 4x2.5                                                 | Non-compacted  | 0.7                                  | 1.8                              | 14.0                             | 7.41                                           | 2,100                                            | 29                                                           | 43                                                         | 230                            | 1000                            |
|                  | 4x4                                                   | Non-compacted  | 0.7                                  | 1.8                              | 16.0                             | 4.61                                           | 1,700                                            | 38                                                           | 55                                                         | 330                            | 1000                            |
|                  | 4x6                                                   | Non-compacted  | 0.7                                  | 1.8                              | 17.5                             | 3.08                                           | 1,450                                            | 49                                                           | 70                                                         | 420                            | 1000                            |
|                  | 4x10                                                  | Non-compacted  | 0.7                                  | 1.8                              | 19.0                             | 1.83                                           | 1,250                                            | 68                                                           | 92                                                         | 590                            | 1000                            |
|                  | 4x16                                                  | Compacted      | 0.7                                  | 1.8                              | 21.0                             | 1.15                                           | 1,000                                            | 91                                                           | 119                                                        | 830                            | 1000                            |
|                  | 4x25                                                  | Compacted      | 0.9                                  | 1.8                              | 25.0                             | 0.727                                          | 1,050                                            | 116                                                          | 152                                                        | 1240                           | 1000                            |
|                  | 4x35                                                  | Compacted      | 0.9                                  | 1.8                              | 27.5                             | 0.524                                          | 900                                              | 144                                                          | 184                                                        | 1610                           | 1000                            |
|                  | 4x50                                                  | Compacted      | 1.0                                  | 2.0                              | 31.5                             | 0.387                                          | 850                                              | 175                                                          | 217                                                        | 2170                           | 1000                            |
|                  | 4x70                                                  | Compacted      | 1.1                                  | 2.0                              | 36.0                             | 0.268                                          | 800                                              | 224                                                          | 266                                                        | 3000                           | 1000                            |
| FD-0.6/1KV-CV    | 4x95                                                  | Compacted      | 1.1                                  | 4.0                              | 44.0                             | 0.193                                          | 650                                              | 272                                                          | 295                                                        | 4449                           | 500                             |
|                  | 4x120                                                 | Compacted      | 1.2                                  | 4.0                              | 48.5                             | 0.153                                          | 650                                              | 320                                                          | 335                                                        | 5550                           | 500                             |
|                  | 4x150                                                 | Compacted      | 1.4                                  | 4.0                              | 52.5                             | 0.124                                          | 700                                              | 366                                                          | 380                                                        | 6749                           | 500                             |
|                  | 4x185                                                 | Compacted      | 1.6                                  | 4.0                              | 58.0                             | 0.0991                                         | 700                                              | 422                                                          | 425                                                        | 8305                           | 500                             |
|                  | 4x240                                                 | Compacted      | 1.7                                  | 4.0                              | 64.5                             | 0.0754                                         | 650                                              | 498                                                          | 495                                                        | 10707                          | 300                             |
|                  | 4x300                                                 | Compacted      | 1.8                                  | 4.0                              | 70.5                             | 0.0601                                         | 600                                              | 567                                                          | 560                                                        | 13211                          | 300                             |
|                  | 4x400                                                 | Compacted      | 2.0                                  | 4.0                              | 78.0                             | 0.0470                                         | 600                                              | 652                                                          | 630                                                        | 16623                          | 200                             |

**Remark** : Thermal resistivity of soil 1.2 K.m./W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

# FD-0.6/1KV-CV or YK FD-0.6/1KV-CV

0.6/1kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE



IEC 60502-1

TIS 2143 PART 1-2567



## CABLE STRUCTURE

|                            |                                                             |
|----------------------------|-------------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper wire |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                          |
| <b>Core identification</b> | : Blue, Brown, Black, Grey                                  |
| <b>Filler</b>              | : Non-hygroscopic material                                  |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                      |
| <b>Sheath</b>              | : Black flame retardant polyvinyl chloride (PVC/ST2)        |

## TECHNICAL DATA

|                           |                                                                                         |
|---------------------------|-----------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts     |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line                 |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                           |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24; Category C, TIS 2143 PART 1-2567 |

## APPLICATION

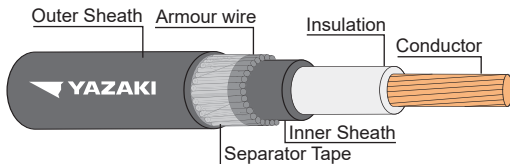
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Cable name       | Number x Size of conductor<br>(No. x mm <sup>2</sup> ) | Conductor type | A.C. Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|------------------|--------------------------------------------------------|----------------|--------------------------------|----------------------------|---------------------------|--------------------------|
| FD-0.6/1KV-CV    | 4x1.5                                                  | Non-compacted  | 15.4287                        | 0.3427                     | 0.1077                    | 15.4291                  |
|                  | 4x2.5                                                  | Non-compacted  | 9.4485                         | 0.3210                     | 0.1009                    | 9.4490                   |
| YK FD-0.6/1KV-CV | 4x4                                                    | Non-compacted  | 5.8782                         | 0.3010                     | 0.0946                    | 5.8790                   |
|                  | 4x6                                                    | Non-compacted  | 3.9274                         | 0.2871                     | 0.0902                    | 3.9284                   |
|                  | 4x10                                                   | Non-compacted  | 2.3335                         | 0.2710                     | 0.0851                    | 2.3351                   |
|                  | 4x16                                                   | Compacted      | 1.4665                         | 0.2624                     | 0.0824                    | 1.4688                   |
|                  | 4x25                                                   | Compacted      | 0.9272                         | 0.2645                     | 0.0831                    | 0.9309                   |
|                  | 4x35                                                   | Compacted      | 0.6685                         | 0.2569                     | 0.0807                    | 0.6733                   |
|                  | 4x50                                                   | Compacted      | 0.4939                         | 0.2536                     | 0.0797                    | 0.5002                   |
|                  | 4x70                                                   | Compacted      | 0.3424                         | 0.2421                     | 0.0761                    | 0.3506                   |
| FD-0.6/1KV-CV    | 4x95                                                   | Compacted      | 0.2471                         | 0.2331                     | 0.0732                    | 0.2577                   |
|                  | 4x120                                                  | Compacted      | 0.1964                         | 0.2315                     | 0.0727                    | 0.2094                   |
|                  | 4x150                                                  | Compacted      | 0.1597                         | 0.2302                     | 0.0723                    | 0.1753                   |
|                  | 4x185                                                  | Compacted      | 0.1282                         | 0.2338                     | 0.0734                    | 0.1478                   |
|                  | 4x240                                                  | Compacted      | 0.0987                         | 0.2295                     | 0.0721                    | 0.1222                   |
|                  | 4x300                                                  | Compacted      | 0.0798                         | 0.2260                     | 0.0710                    | 0.1068                   |
|                  | 4x400                                                  | Compacted      | 0.0639                         | 0.2259                     | 0.0710                    | 0.0955                   |

## FD-0.6/1KV-CV-AWA

**0.6/1 KV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH ALUMINIUM WIRE ARMORED FLAME RETARDANT POWER CABLE**

IEC 60502-1



### CABLE STRUCTURE

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                     |
| <b>Core identification</b> | : Natural (Translucent)                                |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                       |
| <b>Armor</b>               | : Aluminium wires                                      |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2)   |

### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24 (Cat. C)                      |

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Inner Sheath thickness approx.<br>(mm) | Dia. Of inner sheath approx.<br>(mm) | Diameter of steel wire armor nominal<br>(mm) | Outer Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Continuous current rating in free air at 40°C maximum (A) |          |         | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------------------|----------------------------------------------|----------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------------------|----------|---------|------------------------------------------------------------|---------------------------------|------------------------|
|                |                                                    |                |                                      |                                        |                                      |                                              |                                        |                                  |                                                |                                                  | Spaced                                                    | Touching | Trefoil |                                                            |                                 |                        |
| 1              | 1.5                                                | Non-compacted  | 0.7                                  | 1.2                                    | 6.0                                  | 1.25                                         | 1.4                                    | 12.0                             | 12.1                                           | 2,500                                            | 36                                                        | 30       | 29      | 32                                                         | 172                             | 500/D                  |
|                | 2.5                                                | Non-compacted  | 0.7                                  | 1.2                                    | 6.5                                  | 1.25                                         | 1.4                                    | 12.5                             | 7.41                                           | 2,100                                            | 48                                                        | 39       | 38      | 41                                                         | 190                             | 500/D                  |
|                | 4                                                  | Non-compacted  | 0.7                                  | 1.2                                    | 7.0                                  | 1.25                                         | 1.4                                    | 13.0                             | 4.61                                           | 1,700                                            | 62                                                        | 51       | 50      | 53                                                         | 215                             | 500/D                  |
|                | 6                                                  | Non-compacted  | 0.7                                  | 1.2                                    | 7.5                                  | 1.25                                         | 1.4                                    | 13.5                             | 3.08                                           | 1,450                                            | 78                                                        | 64       | 63      | 65                                                         | 246                             | 500/D                  |
|                | 10                                                 | Compacted      | 0.7                                  | 1.2                                    | 8.0                                  | 1.25                                         | 1.4                                    | 14.0                             | 1.83                                           | 1,250                                            | 104                                                       | 85       | 83      | 86                                                         | 295                             | 500/D                  |
|                | 16                                                 | Compacted      | 0.7                                  | 1.2                                    | 9.0                                  | 1.25                                         | 1.4                                    | 15.0                             | 1.15                                           | 1,000                                            | 136                                                       | 112      | 109     | 110                                                        | 369                             | 500/D                  |
|                | 25                                                 | Compacted      | 0.9                                  | 1.2                                    | 11.0                                 | 1.25                                         | 1.5                                    | 17.0                             | 0.727                                          | 1,050                                            | 179                                                       | 147      | 143     | 141                                                        | 503                             | 500/D                  |
|                | 35                                                 | Compacted      | 0.9                                  | 1.2                                    | 12.0                                 | 1.25                                         | 1.5                                    | 18.0                             | 0.524                                          | 900                                              | 217                                                       | 179      | 174     | 169                                                        | 615                             | 500/D                  |
|                | 50                                                 | Compacted      | 1.0                                  | 1.2                                    | 13.5                                 | 1.25                                         | 1.5                                    | 19.5                             | 0.387                                          | 850                                              | 261                                                       | 216      | 210     | 199                                                        | 762                             | 500/D                  |
|                | 70                                                 | Compacted      | 1.1                                  | 1.2                                    | 15.0                                 | 1.25                                         | 1.6                                    | 21.5                             | 0.268                                          | 800                                              | 327                                                       | 270      | 262     | 243                                                        | 1006                            | 500/D                  |
|                | 95                                                 | Compacted      | 1.1                                  | 1.2                                    | 17.0                                 | 1.60                                         | 1.7                                    | 24.0                             | 0.193                                          | 650                                              | 404                                                       | 334      | 325     | 292                                                        | 1345                            | 500/D                  |
|                | 120                                                | Compacted      | 1.2                                  | 1.2                                    | 18.5                                 | 1.60                                         | 1.7                                    | 26.0                             | 0.153                                          | 650                                              | 467                                                       | 387      | 376     | 331                                                        | 1628                            | 500/D                  |
|                | 150                                                | Compacted      | 1.4                                  | 1.2                                    | 20.5                                 | 1.60                                         | 1.8                                    | 28.0                             | 0.124                                          | 700                                              | 532                                                       | 422      | 429     | 371                                                        | 1953                            | 500/D                  |
|                | 185                                                | Compacted      | 1.6                                  | 1.2                                    | 22.5                                 | 1.60                                         | 1.9                                    | 30.5                             | 0.0991                                         | 700                                              | 617                                                       | 515      | 499     | 421                                                        | 2345                            | 500/D                  |
|                | 240                                                | Compacted      | 1.7                                  | 1.2                                    | 25.5                                 | 1.60                                         | 2.0                                    | 33.5                             | 0.0754                                         | 650                                              | 733                                                       | 613      | 594     | 487                                                        | 2973                            | 500/D                  |
|                | 300                                                | Compacted      | 1.8                                  | 1.2                                    | 28.0                                 | 2.00                                         | 2.1                                    | 37.0                             | 0.0601                                         | 600                                              | 844                                                       | 707      | 684     | 549                                                        | 3724                            | 500/D                  |
|                | 400                                                | Compacted      | 2.0                                  | 1.2                                    | 31.0                                 | 2.00                                         | 2.2                                    | 40.0                             | 0.0470                                         | 600                                              | 979                                                       | 822      | 794     | 622                                                        | 4645                            | 500/D                  |
|                | 500                                                | Compacted      | 2.2                                  | 1.2                                    | 34.5                                 | 2.00                                         | 2.3                                    | 44.0                             | 0.0366                                         | 600                                              | 1139                                                      | 957      | 921     | 703                                                        | 5802                            | 500/D                  |
|                | 630                                                | Compacted      | 2.4                                  | 1.3                                    | 38.5                                 | 2.50                                         | 2.5                                    | 49.5                             | 0.0283                                         | 550                                              | 1333                                                      | 1120     | 1075    | 795                                                        | 7490                            | 500/D                  |
|                | 800                                                | Compacted      | 2.6                                  | 1.4                                    | 43.0                                 | 2.50                                         | 2.7                                    | 54.5                             | 0.0221                                         | 550                                              | 1527                                                      | 1280     | 1222    | 881                                                        | 9252                            | 300/D                  |
|                | 1000                                               | Compacted      | 2.8                                  | 1.5                                    | 49.5                                 | 2.50                                         | 2.9                                    | 61.0                             | 0.0176                                         | 500                                              | 1739                                                      | 1453     | 1377    | 965                                                        | 11952                           | 300/D                  |

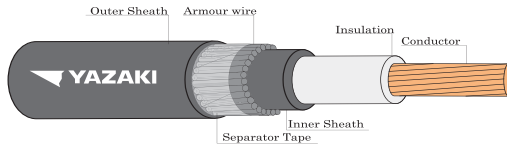
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

## FD-0.6/1KV-CV-AWA

**0.6/1 KV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH ALUMINIUM WIRE ARMORED FLAME RETARDANT POWER CABLE**

IEC 60502-1



### CABLE STRUCTURE

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                     |
| <b>Core identification</b> | : Natural (Translucent)                                |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                       |
| <b>Armor</b>               | : Aluminium wires                                      |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2)   |

### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24 (Cat. C)                      |

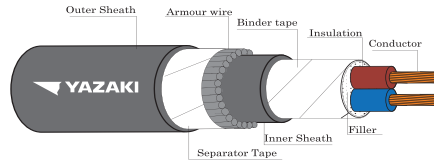
### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance Z (Ω/km) |          |         |
|----------------|-------------------------------------------------|--------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                                 | Space                    | Touching | Trefoil | Space                | Touching | Trefoil | Space               | Touching | Trefoil | Space              | Touching | Trefoil |
| 1              | 1.5                                             | 15.4287                  | 15.4287  | 15.4287 | 0.8017               | 0.6630   | 0.6168  | 0.2519              | 0.2083   | 0.1938  | 15.4308            | 15.4301  | 15.4299 |
|                | 2.5                                             | 9.4485                   | 9.4485   | 9.4485  | 0.7626               | 0.6239   | 0.5777  | 0.2396              | 0.1960   | 0.1815  | 9.4515             | 9.4505   | 9.4502  |
|                | 4                                               | 5.8782                   | 5.8782   | 5.8782  | 0.7225               | 0.5838   | 0.5376  | 0.2270              | 0.1834   | 0.1689  | 5.8826             | 5.8811   | 5.8807  |
|                | 6                                               | 3.9273                   | 3.9273   | 3.9273  | 0.6908               | 0.5521   | 0.5059  | 0.2170              | 0.1735   | 0.1589  | 3.9333             | 3.9312   | 3.9305  |
|                | 10                                              | 2.3335                   | 2.3335   | 2.3335  | 0.6636               | 0.5250   | 0.4787  | 0.2085              | 0.1649   | 0.1504  | 2.3428             | 2.3393   | 2.3383  |
|                | 16                                              | 1.4664                   | 1.4664   | 1.4664  | 0.6289               | 0.4903   | 0.4440  | 0.1976              | 0.1540   | 0.1395  | 1.4797             | 1.4745   | 1.4731  |
|                | 25                                              | 0.9271                   | 0.9271   | 0.9271  | 0.6040               | 0.4654   | 0.4191  | 0.1897              | 0.1462   | 0.1317  | 0.9463             | 0.9386   | 0.9364  |
|                | 35                                              | 0.6683                   | 0.6683   | 0.6683  | 0.5835               | 0.4449   | 0.3986  | 0.1833              | 0.1398   | 0.1252  | 0.6930             | 0.6828   | 0.6800  |
|                | 50                                              | 0.4936                   | 0.4937   | 0.4937  | 0.5562               | 0.4176   | 0.3713  | 0.1747              | 0.1312   | 0.1167  | 0.5237             | 0.5108   | 0.5073  |
|                | 70                                              | 0.3420                   | 0.3421   | 0.3421  | 0.5379               | 0.3992   | 0.3530  | 0.1690              | 0.1254   | 0.1109  | 0.3815             | 0.3643   | 0.3596  |
|                | 95                                              | 0.2465                   | 0.2466   | 0.2466  | 0.5260               | 0.3873   | 0.3411  | 0.1652              | 0.1217   | 0.1072  | 0.2967             | 0.2750   | 0.2689  |
|                | 120                                             | 0.1956                   | 0.1957   | 0.1958  | 0.5126               | 0.3740   | 0.3278  | 0.1610              | 0.1175   | 0.1030  | 0.2533             | 0.2283   | 0.2212  |
|                | 150                                             | 0.1587                   | 0.1589   | 0.1590  | 0.5057               | 0.3671   | 0.3209  | 0.1589              | 0.1153   | 0.1008  | 0.2246             | 0.1963   | 0.1883  |
|                | 185                                             | 0.1271                   | 0.1273   | 0.1275  | 0.5054               | 0.3668   | 0.3206  | 0.1588              | 0.1152   | 0.1007  | 0.2034             | 0.1717   | 0.1625  |
|                | 240                                             | 0.0971                   | 0.0974   | 0.0977  | 0.4937               | 0.3551   | 0.3089  | 0.1551              | 0.1116   | 0.0970  | 0.1830             | 0.1481   | 0.1377  |
|                | 300                                             | 0.0778                   | 0.0783   | 0.0787  | 0.3487               | 0.3487   | 0.3025  | 0.1531              | 0.1096   | 0.0950  | 0.1718             | 0.1347   | 0.1234  |
|                | 400                                             | 0.0615                   | 0.0621   | 0.0625  | 0.4821               | 0.3435   | 0.2973  | 0.1515              | 0.1079   | 0.0934  | 0.1635             | 0.1245   | 0.1124  |
|                | 500                                             | 0.0486                   | 0.0494   | 0.0501  | 0.4746               | 0.3360   | 0.2898  | 0.1491              | 0.1056   | 0.0910  | 0.1568             | 0.1166   | 0.1039  |
|                | 630                                             | 0.0386                   | 0.0396   | 0.0403  | 0.4729               | 0.3343   | 0.2880  | 0.1486              | 0.1050   | 0.0905  | 0.1535             | 0.1122   | 0.0991  |
|                | 800                                             | 0.0313                   | 0.0325   | 0.0335  | 0.4670               | 0.3284   | 0.2822  | 0.1467              | 0.1032   | 0.0887  | 0.1500             | 0.1082   | 0.0948  |
|                | 1000                                            | 0.0262                   | 0.0276   | 0.0288  | 0.4593               | 0.3207   | 0.2745  | 0.1443              | 0.1008   | 0.0862  | 0.1467             | 0.1045   | 0.0909  |

## FD-0.6/1KV-CV-SWA

**0.6/1 KV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE**



IEC 60502-1



### CABLE STRUCTURE

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                     |
| <b>Core identification</b> | : Blue, Brown                                          |
| <b>Filler</b>              | : Non-hygroscopic material                             |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                 |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                       |
| <b>Armor</b>               | : Galvanized Steel Wires                               |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2)   |

### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24 (Cat. C)                      |

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Dia. Of inner sheath approx. (mm) | Diameter of steel wire armor nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|----------------|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|-------------------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 2              | 1.5                                             | Non-compacted  | 0.7                               | 1.2                                 | 10.0                              | 0.80                                      | 1.8                           | 15.5                          | 12.1                                        | 2,500                                         | 28                                                        | 33                                                      | 371                          | 500/D               |
|                | 2.5                                             | Non-Compacted  | 0.7                               | 1.2                                 | 11.0                              | 1.25                                      | 1.8                           | 17.5                          | 7.41                                        | 2,100                                         | 37                                                        | 43                                                      | 536                          | 500/D               |
|                | 4                                               | Non-Compacted  | 0.7                               | 1.2                                 | 12.0                              | 1.25                                      | 1.8                           | 18.5                          | 4.61                                        | 1,700                                         | 50                                                        | 57                                                      | 605                          | 500/D               |
|                | 6                                               | Non-compacted  | 0.7                               | 1.2                                 | 13.0                              | 1.25                                      | 1.8                           | 20.0                          | 3.08                                        | 1,450                                         | 63                                                        | 71                                                      | 697                          | 500/D               |
|                | 10                                              | Compacted      | 0.7                               | 1.2                                 | 14.0                              | 1.25                                      | 1.8                           | 21.0                          | 1.83                                        | 1,250                                         | 83                                                        | 93                                                      | 817                          | 500/D               |
|                | 16                                              | Compacted      | 0.7                               | 1.2                                 | 16.0                              | 1.60                                      | 1.8                           | 23.5                          | 1.150                                       | 1,000                                         | 111                                                       | 121                                                     | 1155                         | 500/D               |
|                | 25                                              | Compacted      | 0.9                               | 1.2                                 | 19.5                              | 1.60                                      | 1.8                           | 27.0                          | 0.727                                       | 1,050                                         | 147                                                       | 156                                                     | 1509                         | 500/D               |
|                | 35                                              | Compacted      | 0.9                               | 1.2                                 | 21.5                              | 1.60                                      | 1.8                           | 29.0                          | 0.524                                       | 900                                           | 182                                                       | 188                                                     | 1797                         | 500/D               |
|                | 50                                              | Compacted      | 1.0                               | 1.2                                 | 24.5                              | 1.60                                      | 2.0                           | 32.5                          | 0.387                                       | 850                                           | 219                                                       | 222                                                     | 2218                         | 500/D               |
|                | 70                                              | Compacted      | 1.1                               | 1.2                                 | 28.5                              | 2.00                                      | 2.1                           | 37.5                          | 0.268                                       | 800                                           | 275                                                       | 271                                                     | 3105                         | 500/D               |
|                | 95                                              | Compacted      | 1.1                               | 1.2                                 | 32.0                              | 2.00                                      | 2.2                           | 41.0                          | 0.193                                       | 650                                           | 337                                                       | 325                                                     | 3844                         | 500/D               |
|                | 120                                             | Compacted      | 1.2                               | 1.2                                 | 35.5                              | 2.00                                      | 2.4                           | 45.0                          | 0.153                                       | 650                                           | 389                                                       | 368                                                     | 4638                         | 500/D               |
|                | 150                                             | Compacted      | 1.4                               | 1.3                                 | 39.0                              | 2.50                                      | 2.5                           | 50.0                          | 0.124                                       | 700                                           | 444                                                       | 412                                                     | 5913                         | 500/D               |
|                | 185                                             | Compacted      | 1.6                               | 1.4                                 | 44.0                              | 2.50                                      | 2.7                           | 55.0                          | 0.0991                                      | 700                                           | 509                                                       | 463                                                     | 7050                         | 500/D               |
|                | 240                                             | Compacted      | 1.7                               | 1.5                                 | 49.5                              | 2.50                                      | 2.9                           | 61.5                          | 0.0754                                      | 650                                           | 600                                                       | 534                                                     | 8739                         | 500/D               |
|                | 300                                             | Compacted      | 1.8                               | 1.6                                 | 54.5                              | 2.50                                      | 3.1                           | 67.0                          | 0.0601                                      | 600                                           | 684                                                       | 597                                                     | 10448                        | 300/D               |
| 400            | Compacted                                       | 2.0            | 1.7                               | 61.0                                | 2.50                              | 3.3                                       | 74.0                          | 0.0470                        | 600                                         | 783                                           | 670                                                       | 12748                                                   | 300/D                        |                     |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

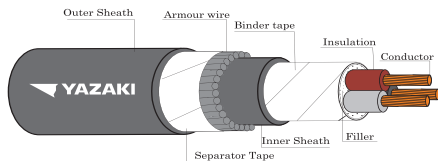
D : Packing in drum

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 2              | 1.5                                             | 15.4287                  | 0.3427               | 0.1077              | 15.4291            |
|                | 2.5                                             | 9.4485                   | 0.3249               | 0.1021              | 9.4491             |
|                | 4                                               | 5.8782                   | 0.3026               | 0.0951              | 5.8790             |
|                | 6                                               | 3.9273                   | 0.2890               | 0.0908              | 3.9284             |
|                | 10                                              | 2.3335                   | 0.2747               | 0.0863              | 2.3351             |
|                | 16                                              | 1.4665                   | 0.2614               | 0.0821              | 1.4688             |
|                | 25                                              | 0.9272                   | 0.2637               | 0.0829              | 0.9309             |
|                | 35                                              | 0.6684                   | 0.2567               | 0.0807              | 0.6733             |
|                | 50                                              | 0.4938                   | 0.2435               | 0.0785              | 0.4997             |
|                | 70                                              | 0.3423                   | 0.2395               | 0.0752              | 0.3504             |
|                | 95                                              | 0.2468                   | 0.2331               | 0.0732              | 0.2575             |
|                | 120                                             | 0.1980                   | 0.2289               | 0.0719              | 0.2088             |
|                | 150                                             | 0.1593                   | 0.2302               | 0.0723              | 0.1749             |
|                | 185                                             | 0.1278                   | 0.2326               | 0.0731              | 0.1472             |
|                | 240                                             | 0.0981                   | 0.2281               | 0.0717              | 0.1215             |
|                | 300                                             | 0.0791                   | 0.2260               | 0.0710              | 0.1063             |
| 400            |                                                 | 0.0630                   | 0.2259               | 0.0710              | 0.0949             |

## FD-0.6/1KV-CV-SWA

**0.6/1 KV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE**

IEC 60502-1



### CABLE STRUCTURE

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                     |
| <b>Core identification</b> | : Brown, Black, Grey                                   |
| <b>Filler</b>              | : Non-hygroscopic material                             |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                 |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                       |
| <b>Amor</b>                | : Galvanized Steel Wires                               |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2)   |

### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24 (Cat. C)                      |

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Dia. Of inner sheath approx. (mm) | Diameter of steel wire armor nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MQ-km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|----------------|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|-------------------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 3              | 1.5                                             | Non-Compacted  | 0.7                               | 1.2                                 | 10.5                              | 0.80                                      | 1.8                           | 16.0                          | 12.1                                        | 2,500                                         | 24                                                        | 26                                                      | 404                          | 500/D               |
|                | 2.5                                             | Non-Compacted  | 0.7                               | 1.2                                 | 11.5                              | 1.25                                      | 1.8                           | 18.0                          | 7.41                                        | 2,100                                         | 32                                                        | 34                                                      | 580                          | 500/D               |
|                | 4                                               | Non-Compacted  | 0.7                               | 1.2                                 | 12.5                              | 1.25                                      | 1.8                           | 19.5                          | 4.61                                        | 1,700                                         | 42                                                        | 44                                                      | 675                          | 500/D               |
|                | 6                                               | Non-Compacted  | 0.7                               | 1.2                                 | 14.0                              | 1.25                                      | 1.8                           | 20.5                          | 3.08                                        | 1,450                                         | 53                                                        | 55                                                      | 787                          | 500/D               |
|                | 10                                              | Compacted      | 0.7                               | 1.2                                 | 15.0                              | 1.25                                      | 1.8                           | 21.5                          | 1.83                                        | 1,250                                         | 71                                                        | 72                                                      | 943                          | 500/D               |
|                | 16                                              | Compacted      | 0.7                               | 1.2                                 | 17.0                              | 1.60                                      | 1.8                           | 24.5                          | 1.150                                       | 1,000                                         | 94                                                        | 93                                                      | 1349                         | 500/D               |
|                | 25                                              | Compacted      | 0.9                               | 1.2                                 | 21.0                              | 1.60                                      | 1.8                           | 28.5                          | 0.727                                       | 1,050                                         | 125                                                       | 120                                                     | 1772                         | 500/D               |
|                | 35                                              | Compacted      | 0.9                               | 1.2                                 | 23.0                              | 1.60                                      | 1.9                           | 31.0                          | 0.524                                       | 900                                           | 154                                                       | 145                                                     | 2171                         | 500/D               |
|                | 50                                              | Compacted      | 1.0                               | 1.2                                 | 26.5                              | 2.00                                      | 2.0                           | 35.0                          | 0.387                                       | 850                                           | 186                                                       | 171                                                     | 2958                         | 500/D               |
|                | 70                                              | Compacted      | 1.1                               | 1.2                                 | 30.5                              | 2.00                                      | 2.2                           | 39.5                          | 0.268                                       | 800                                           | 233                                                       | 208                                                     | 3824                         | 500/D               |
|                | 95                                              | Compacted      | 1.1                               | 1.2                                 | 34.0                              | 2.00                                      | 2.3                           | 43.5                          | 0.193                                       | 650                                           | 286                                                       | 249                                                     | 4833                         | 500/D               |
|                | 120                                             | Compacted      | 1.2                               | 1.3                                 | 38.0                              | 2.50                                      | 2.5                           | 49.0                          | 0.153                                       | 650                                           | 332                                                       | 283                                                     | 6280                         | 500/D               |
|                | 150                                             | Compacted      | 1.4                               | 1.4                                 | 42.0                              | 2.50                                      | 2.6                           | 53.5                          | 0.124                                       | 700                                           | 376                                                       | 315                                                     | 7446                         | 500/D               |
|                | 185                                             | Compacted      | 1.6                               | 1.5                                 | 47.5                              | 2.50                                      | 2.8                           | 59.0                          | 0.0991                                      | 700                                           | 430                                                       | 354                                                     | 8970                         | 300/D               |
|                | 240                                             | Compacted      | 1.7                               | 1.6                                 | 53.5                              | 2.50                                      | 3.0                           | 65.5                          | 0.0754                                      | 650                                           | 505                                                       | 406                                                     | 11245                        | 300/D               |
|                | 300                                             | Compacted      | 1.8                               | 1.7                                 | 59.0                              | 2.50                                      | 3.2                           | 71.5                          | 0.0601                                      | 600                                           | 574                                                       | 453                                                     | 13504                        | 300/D               |
|                | 400                                             | Compacted      | 2.0                               | 1.8                                 | 66.0                              | 3.15                                      | 3.5                           | 80.5                          | 0.0470                                      | 600                                           | 652                                                       | 501                                                     | 17500                        | 200/D               |

**Remark** : Thermal resistivity of soil 1.2 K.m./W or °C.m/W

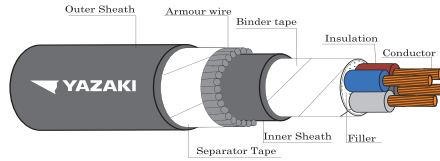
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 3              | 1.5                                             | 15.4287                  | 0.3427               | 0.1077              | 15.4291            |
|                | 2.5                                             | 9.4485                   | 0.3249               | 0.1021              | 9.4491             |
|                | 4                                               | 5.8782                   | 0.3026               | 0.0951              | 5.8790             |
|                | 6                                               | 3.9274                   | 0.2890               | 0.0908              | 3.9284             |
|                | 10                                              | 2.3335                   | 0.2747               | 0.0863              | 2.3351             |
|                | 16                                              | 1.4665                   | 0.2614               | 0.0821              | 1.4688             |
|                | 25                                              | 0.9272                   | 0.2637               | 0.0829              | 0.9309             |
|                | 35                                              | 0.6685                   | 0.2567               | 0.0807              | 0.6733             |
|                | 50                                              | 0.4939                   | 0.2435               | 0.0765              | 0.4998             |
|                | 70                                              | 0.3424                   | 0.2395               | 0.0752              | 0.3506             |
|                | 95                                              | 0.2471                   | 0.2331               | 0.0732              | 0.2577             |
|                | 120                                             | 0.1964                   | 0.2289               | 0.0719              | 0.2091             |
|                | 150                                             | 0.1597                   | 0.2302               | 0.0723              | 0.1753             |
|                | 185                                             | 0.1283                   | 0.2326               | 0.0731              | 0.1476             |
|                | 240                                             | 0.0987                   | 0.2281               | 0.0717              | 0.1219             |
|                | 300                                             | 0.0798                   | 0.2260               | 0.0710              | 0.1068             |
|                | 400                                             | 0.0639                   | 0.2259               | 0.0710              | 0.0955             |

## FD-0.6/1KV-CV-SWA

**0.6/1 KV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE**



IEC 60502-1



### CABLE STRUCTURE

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                     |
| <b>Core identification</b> | : Blue, Brown, Black, Grey                             |
| <b>Filler</b>              | : Non-hygroscopic material                             |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                 |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                       |
| <b>Amor</b>                | : Galvanized Steel Wires                               |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2)   |

### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24 (Cat. C)                      |

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Dia. Of inner sheath approx. (mm) | Diameter of steel wire armor nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|----------------|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|-------------------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 4              | 1.5                                             | Non-Compacted  | 0.7                               | 1.2                                 | 11.0                              | 1.25                                      | 1.8                           | 18.0                          | 12.1                                        | 2,500                                         | 24                                                        | 26                                                      | 569                          | 500/D               |
|                | 2.5                                             | Non-Compacted  | 0.7                               | 1.2                                 | 12.5                              | 1.25                                      | 1.8                           | 19.0                          | 7.41                                        | 2,100                                         | 32                                                        | 34                                                      | 642                          | 500/D               |
|                | 4                                               | Non-Compacted  | 0.7                               | 1.2                                 | 13.5                              | 1.25                                      | 1.8                           | 20.5                          | 4.61                                        | 1,700                                         | 42                                                        | 44                                                      | 754                          | 500/D               |
|                | 6                                               | Non-Compacted  | 0.7                               | 1.2                                 | 15.0                              | 1.25                                      | 1.8                           | 22.0                          | 3.08                                        | 1,450                                         | 53                                                        | 55                                                      | 901                          | 500/D               |
|                | 10                                              | Compacted      | 0.7                               | 1.2                                 | 16.5                              | 1.60                                      | 1.8                           | 24.0                          | 1.83                                        | 1,250                                         | 71                                                        | 72                                                      | 1232                         | 500/D               |
|                | 16                                              | Compacted      | 0.7                               | 1.2                                 | 19.0                              | 1.60                                      | 1.8                           | 26.0                          | 1.150                                       | 1,000                                         | 94                                                        | 93                                                      | 1579                         | 500/D               |
|                | 25                                              | Compacted      | 0.9                               | 1.2                                 | 23.0                              | 1.60                                      | 1.9                           | 30.5                          | 0.727                                       | 1,050                                         | 125                                                       | 120                                                     | 2143                         | 500/D               |
|                | 35                                              | Compacted      | 0.9                               | 1.2                                 | 25.5                              | 1.60                                      | 2.0                           | 33.5                          | 0.524                                       | 900                                           | 154                                                       | 145                                                     | 2638                         | 500/D               |
|                | 50                                              | Compacted      | 1.0                               | 1.2                                 | 29.0                              | 2.00                                      | 2.1                           | 38.0                          | 0.387                                       | 850                                           | 186                                                       | 171                                                     | 3578                         | 500/D               |
|                | 70                                              | Compacted      | 1.1                               | 1.2                                 | 33.5                              | 2.00                                      | 2.3                           | 43.0                          | 0.268                                       | 800                                           | 233                                                       | 208                                                     | 4672                         | 500/D               |
|                | 95                                              | Compacted      | 1.1                               | 1.3                                 | 38.0                              | 2.50                                      | 2.5                           | 49.0                          | 0.193                                       | 650                                           | 286                                                       | 249                                                     | 6404                         | 500/D               |
|                | 120                                             | Compacted      | 1.2                               | 1.4                                 | 42.5                              | 2.50                                      | 2.6                           | 53.5                          | 0.153                                       | 650                                           | 332                                                       | 283                                                     | 7789                         | 500/D               |
|                | 150                                             | Compacted      | 1.4                               | 1.5                                 | 47.0                              | 2.50                                      | 2.8                           | 59.0                          | 0.124                                       | 700                                           | 376                                                       | 315                                                     | 9280                         | 300/D               |
|                | 185                                             | Compacted      | 1.6                               | 1.6                                 | 53.0                              | 2.50                                      | 3.0                           | 65.0                          | 0.0991                                      | 700                                           | 430                                                       | 354                                                     | 11228                        | 300/D               |
|                | 240                                             | Compacted      | 1.7                               | 1.7                                 | 59.5                              | 2.50                                      | 3.2                           | 72.0                          | 0.0754                                      | 650                                           | 505                                                       | 406                                                     | 14070                        | 300/D               |
|                | 300                                             | Compacted      | 1.8                               | 1.8                                 | 65.5                              | 3.15                                      | 3.5                           | 80.0                          | 0.0601                                      | 600                                           | 574                                                       | 453                                                     | 17934                        | 200/D               |
|                | 400                                             | Compacted      | 2.0                               | 2.0                                 | 73.5                              | 3.15                                      | 3.8                           | 89.0                          | 0.0470                                      | 600                                           | 652                                                       | 501                                                     | 22103                        | 200/D               |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

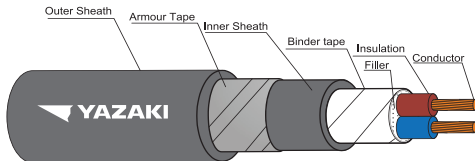
D : Packing in drum

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 4              | 1.5                                             | 15.4287                  | 0.3427               | 0.1077              | 15.4291            |
|                | 2.5                                             | 9.4485                   | 0.3249               | 0.1021              | 9.4491             |
|                | 4                                               | 5.8782                   | 0.3026               | 0.0951              | 5.8790             |
|                | 6                                               | 3.9274                   | 0.2890               | 0.0908              | 3.9284             |
|                | 10                                              | 2.3335                   | 0.2747               | 0.0863              | 2.3351             |
|                | 16                                              | 1.4665                   | 0.2614               | 0.0821              | 1.4688             |
|                | 25                                              | 0.9272                   | 0.2637               | 0.0829              | 0.9309             |
|                | 35                                              | 0.6685                   | 0.2567               | 0.0807              | 0.6733             |
|                | 50                                              | 0.4939                   | 0.2435               | 0.0765              | 0.4998             |
|                | 70                                              | 0.3424                   | 0.2395               | 0.0752              | 0.3506             |
|                | 95                                              | 0.2471                   | 0.2331               | 0.0732              | 0.2577             |
|                | 120                                             | 0.1964                   | 0.2289               | 0.0719              | 0.2091             |
| 3              | 150                                             | 0.1597                   | 0.2302               | 0.0723              | 0.1753             |
|                | 185                                             | 0.1283                   | 0.2326               | 0.0731              | 0.1476             |
|                | 240                                             | 0.0987                   | 0.2281               | 0.0717              | 0.1219             |
|                | 300                                             | 0.0798                   | 0.2260               | 0.0710              | 0.1068             |
|                | 400                                             | 0.0639                   | 0.2259               | 0.0710              | 0.0955             |

## FD-0.6/1KV-CV-STA

### 0.6/1 KV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED STEEL TAPE ARMOUR FLAME RETARDANT POWER CABLE

IEC 60502-1



#### CABLE STRUCTURE

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                     |
| <b>Core identification</b> | : Blue, Brown                                          |
| <b>Filler</b>              | : Non-hygroscopic material                             |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                 |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                       |
| <b>Armor</b>               | : Two galvanized flat steel tape                       |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2)   |

#### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24 (Cat. C)                      |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Dia. Of inner sheath approx. (mm) | Armor thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ·km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|----------------|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 2              | 1.5                                             | Non-Compacted  | 0.7                               | 1.2                                 | 10.0                              | 0.2                          | 1.8                           | 15.0                          | 12.1                                        | 2,500                                         | 28                                                        | 33                                                      | 330                          | 500/D               |
|                | 2.5                                             | Non-Compacted  | 0.7                               | 1.2                                 | 11.0                              | 0.2                          | 1.8                           | 16.0                          | 7.41                                        | 2,100                                         | 37                                                        | 43                                                      | 373                          | 500/D               |
|                | 4                                               | Non-Compacted  | 0.7                               | 1.2                                 | 12.0                              | 0.2                          | 1.8                           | 17.0                          | 4.61                                        | 1,700                                         | 48                                                        | 56                                                      | 434                          | 500/D               |
|                | 6                                               | Non-Compacted  | 0.7                               | 1.2                                 | 13.0                              | 0.2                          | 1.8                           | 18.5                          | 3.08                                        | 1,450                                         | 61                                                        | 70                                                      | 510                          | 500/D               |
|                | 10                                              | Compacted      | 0.7                               | 1.2                                 | 14.0                              | 0.2                          | 1.8                           | 19.5                          | 1.83                                        | 1,250                                         | 82                                                        | 92                                                      | 613                          | 500/D               |
|                | 16                                              | Compacted      | 0.7                               | 1.2                                 | 16.0                              | 0.2                          | 1.8                           | 21.5                          | 1,150                                       | 1,000                                         | 108                                                       | 120                                                     | 789                          | 500/D               |
|                | 25                                              | Compacted      | 0.9                               | 1.2                                 | 19.5                              | 0.2                          | 1.8                           | 25.0                          | 0.727                                       | 1,050                                         | 144                                                       | 154                                                     | 1084                         | 500/D               |
|                | 35                                              | Compacted      | 0.9                               | 1.2                                 | 21.5                              | 0.2                          | 1.8                           | 27.0                          | 0.524                                       | 900                                           | 176                                                       | 185                                                     | 1325                         | 500/D               |
|                | 50                                              | Compacted      | 1.0                               | 1.2                                 | 24.5                              | 0.2                          | 1.9                           | 30.0                          | 0.387                                       | 850                                           | 213                                                       | 219                                                     | 1682                         | 500/D               |
|                | 70                                              | Compacted      | 1.1                               | 1.2                                 | 28.5                              | 0.2                          | 2.0                           | 34.0                          | 0.268                                       | 800                                           | 267                                                       | 268                                                     | 2227                         | 500/D               |
|                | 95                                              | Compacted      | 1.1                               | 1.2                                 | 32.0                              | 0.5                          | 2.2                           | 39.0                          | 0.193                                       | 650                                           | 331                                                       | 322                                                     | 3132                         | 500/D               |
|                | 120                                             | Compacted      | 1.2                               | 1.2                                 | 35.5                              | 0.5                          | 2.3                           | 42.5                          | 0.153                                       | 650                                           | 383                                                       | 366                                                     | 3813                         | 500/D               |
|                | 150                                             | Compacted      | 1.4                               | 1.3                                 | 39.0                              | 0.5                          | 2.4                           | 46.5                          | 0.124                                       | 700                                           | 435                                                       | 409                                                     | 4569                         | 500/D               |
|                | 185                                             | Compacted      | 1.6                               | 1.4                                 | 44.0                              | 0.5                          | 2.6                           | 51.5                          | 0.0991                                      | 700                                           | 500                                                       | 461                                                     | 5580                         | 500/D               |
|                | 240                                             | Compacted      | 1.7                               | 1.5                                 | 49.5                              | 0.5                          | 2.8                           | 58.0                          | 0.0754                                      | 650                                           | 590                                                       | 531                                                     | 7088                         | 500/D               |
|                | 300                                             | Compacted      | 1.8                               | 1.6                                 | 54.5                              | 0.5                          | 2.9                           | 63.0                          | 0.0601                                      | 600                                           | 676                                                       | 596                                                     | 8597                         | 500/D               |
|                | 400                                             | Compacted      | 2.0                               | 1.7                                 | 61.0                              | 0.5                          | 3.2                           | 70.5                          | 0.0470                                      | 600                                           | 765                                                       | 664                                                     | 10729                        | 300/D               |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

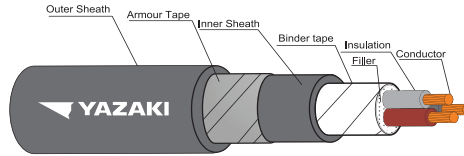
D : Packing in drum

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 2              | 1.5                                             | 15.4287                  | 0.3427               | 0.1077              | 15.4291            |
|                | 2.5                                             | 9.4485                   | 0.3249               | 0.1021              | 9.4491             |
|                | 4                                               | 5.8782                   | 0.3026               | 0.0951              | 5.8790             |
|                | 6                                               | 3.9273                   | 0.2890               | 0.0908              | 3.9284             |
|                | 10                                              | 2.3335                   | 0.2747               | 0.0863              | 2.3351             |
|                | 16                                              | 1.4664                   | 0.2614               | 0.0821              | 1.4688             |
|                | 25                                              | 0.9271                   | 0.2637               | 0.0829              | 0.9309             |
|                | 35                                              | 0.6683                   | 0.2567               | 0.0807              | 0.6733             |
|                | 50                                              | 0.4936                   | 0.2435               | 0.0765              | 0.4998             |
|                | 70                                              | 0.3420                   | 0.2395               | 0.0752              | 0.3506             |
|                | 95                                              | 0.2465                   | 0.2331               | 0.0732              | 0.2577             |
|                | 120                                             | 0.1956                   | 0.2289               | 0.0719              | 0.2091             |
|                | 150                                             | 0.1587                   | 0.2302               | 0.0723              | 0.1753             |
|                | 185                                             | 0.1271                   | 0.2326               | 0.0731              | 0.1476             |
|                | 240                                             | 0.0971                   | 0.2281               | 0.0717              | 0.1219             |
|                | 300                                             | 0.0778                   | 0.2260               | 0.0710              | 0.1068             |
|                | 400                                             | 0.0615                   | 0.2259               | 0.0710              | 0.0955             |

## FD-0.6/1KV-CV-STA

### 0.6/1 KV 90°C CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED STEEL TAPE ARMOUR FLAME RETARDANT POWER CABLE

IEC 60502-1



#### CABLE STRUCTURE

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                     |
| <b>Core identification</b> | : Brown, Black, Grey                                   |
| <b>Filler</b>              | : Non-hygroscopic material                             |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                 |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                       |
| <b>Amor</b>                | : Two galvanized flat steel tape                       |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2)   |

#### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1,<br>IEC 60332-3-24 (Cat. C)                   |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm²) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Dia. Of inner sheath approx. (mm) | Armor thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ·km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|----------------|------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 3              | 1.5                                | Non-Compacted  | 0.7                               | 1.2                                 | 10.5                              | 0.2                          | 1.8                           | 15.5                          | 12.1                                        | 2,500                                         | 24                                                        | 26                                                      | 361                          | 500/D               |
|                | 2.5                                | Non-Compacted  | 0.7                               | 1.2                                 | 11.5                              | 0.2                          | 1.8                           | 17.0                          | 7.41                                        | 2,100                                         | 32                                                        | 34                                                      | 414                          | 500/D               |
|                | 4                                  | Non-Compacted  | 0.7                               | 1.2                                 | 12.5                              | 0.2                          | 1.8                           | 18.0                          | 4.61                                        | 1,700                                         | 42                                                        | 44                                                      | 491                          | 500/D               |
|                | 6                                  | Non-Compacted  | 0.7                               | 1.2                                 | 14.0                              | 0.2                          | 1.8                           | 19.0                          | 3.08                                        | 1,450                                         | 53                                                        | 55                                                      | 589                          | 500/D               |
|                | 10                                 | Compacted      | 0.7                               | 1.2                                 | 15.0                              | 0.2                          | 1.8                           | 20.5                          | 1.83                                        | 1,250                                         | 71                                                        | 72                                                      | 731                          | 500/D               |
|                | 16                                 | Compacted      | 0.7                               | 1.2                                 | 17.0                              | 0.2                          | 1.8                           | 22.5                          | 1.150                                       | 1,000                                         | 94                                                        | 93                                                      | 963                          | 500/D               |
|                | 25                                 | Compacted      | 0.9                               | 1.2                                 | 21.0                              | 0.2                          | 1.8                           | 26.0                          | 0.727                                       | 1,050                                         | 125                                                       | 120                                                     | 1328                         | 500/D               |
|                | 35                                 | Compacted      | 0.9                               | 1.2                                 | 23.0                              | 0.2                          | 1.8                           | 28.5                          | 0.524                                       | 900                                           | 154                                                       | 145                                                     | 1667                         | 500/D               |
|                | 50                                 | Compacted      | 1.0                               | 1.2                                 | 26.5                              | 0.2                          | 1.9                           | 32.0                          | 0.387                                       | 850                                           | 166                                                       | 171                                                     | 2136                         | 500/D               |
|                | 70                                 | Compacted      | 1.1                               | 1.2                                 | 30.5                              | 0.2                          | 2.1                           | 36.5                          | 0.268                                       | 800                                           | 233                                                       | 208                                                     | 2889                         | 500/D               |
|                | 95                                 | Compacted      | 1.1                               | 1.2                                 | 34.0                              | 0.5                          | 2.2                           | 41.0                          | 0.193                                       | 650                                           | 286                                                       | 249                                                     | 4038                         | 500/D               |
|                | 120                                | Compacted      | 1.2                               | 1.3                                 | 38.0                              | 0.5                          | 2.4                           | 45.5                          | 0.153                                       | 650                                           | 332                                                       | 283                                                     | 4995                         | 500/D               |
|                | 150                                | Compacted      | 1.4                               | 1.4                                 | 42.0                              | 0.5                          | 2.5                           | 50.0                          | 0.124                                       | 700                                           | 376                                                       | 315                                                     | 6033                         | 500/D               |
|                | 185                                | Compacted      | 1.6                               | 1.5                                 | 47.5                              | 0.5                          | 2.7                           | 55.5                          | 0.0991                                      | 700                                           | 430                                                       | 354                                                     | 7400                         | 500/D               |
|                | 240                                | Compacted      | 1.7                               | 1.6                                 | 53.5                              | 0.5                          | 2.9                           | 62.0                          | 0.0754                                      | 650                                           | 505                                                       | 406                                                     | 9443                         | 300/D               |
|                | 300                                | Compacted      | 1.8                               | 1.7                                 | 59.0                              | 0.5                          | 3.1                           | 68.0                          | 0.0601                                      | 600                                           | 574                                                       | 453                                                     | 11570                        | 300/D               |
|                | 400                                | Compacted      | 2.0                               | 1.8                                 | 66.0                              | 0.5                          | 3.3                           | 75.5                          | 0.0470                                      | 600                                           | 652                                                       | 501                                                     | 14417                        | 300/D               |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

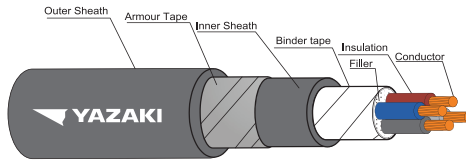
D : Packing in drum

| Number of core | Nominal cross sectional area (mm²) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|----------------|------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 3              | 1.5                                | 15.4287                  | 0.3427               | 0.1077              | 15.4291            |
|                | 2.5                                | 9.4485                   | 0.3249               | 0.1021              | 9.4491             |
|                | 4                                  | 5.8782                   | 0.3026               | 0.0951              | 5.8790             |
|                | 6                                  | 3.9273                   | 0.2890               | 0.0908              | 3.9284             |
|                | 10                                 | 2.3335                   | 0.2747               | 0.0863              | 2.3351             |
|                | 16                                 | 1.4664                   | 0.2614               | 0.0821              | 1.4688             |
|                | 25                                 | 0.9271                   | 0.2637               | 0.0829              | 0.9309             |
|                | 35                                 | 0.6683                   | 0.2567               | 0.0807              | 0.6733             |
|                | 50                                 | 0.4936                   | 0.2435               | 0.0765              | 0.4998             |
|                | 70                                 | 0.3420                   | 0.2395               | 0.0752              | 0.3506             |
|                | 95                                 | 0.2465                   | 0.2331               | 0.0732              | 0.2577             |
|                | 120                                | 0.1956                   | 0.2289               | 0.0719              | 0.2091             |
|                | 150                                | 0.1587                   | 0.2302               | 0.0723              | 0.1753             |
|                | 185                                | 0.1271                   | 0.2326               | 0.0731              | 0.1476             |
|                | 240                                | 0.0971                   | 0.2281               | 0.0717              | 0.1219             |
|                | 300                                | 0.0778                   | 0.2280               | 0.0710              | 0.1068             |
|                | 400                                | 0.0615                   | 0.2259               | 0.0710              | 0.0955             |

## FD-0.6/1KV-CV-STA

0.6/1kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED FLAME RETARDANT POWER CABLE

IEC 60502-1



### CABLE STRUCTURE

|                            |                                                        |
|----------------------------|--------------------------------------------------------|
| <b>Conductor</b>           | : Non-compacted and compacted stranded annealed copper |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                     |
| <b>Core identification</b> | : Blue, Brown, Black, Grey                             |
| <b>Filler</b>              | : Non-hygroscopic material                             |
| <b>Binder tape</b>         | : Non-hygroscopic tape                                 |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                       |
| <b>Armor</b>               | : Two galvanized flat steel tape                       |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2)   |

### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1, IEC 60332-3-24 (Cat. C)                      |

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm²) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Dia. Of inner sheath approx. (mm) | Armor thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ·km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Stand Length (m) |
|----------------|------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|------------------|
| 4              | 1.5                                | Non-Compacted  | 0.7                               | 1.2                                 | 11.0                              | 0.2                          | 1.8                           | 16.5                          | 12.1                                        | 2,500                                         | 24                                                        | 28                                                      | 402                          | 500/D            |
|                | 2.5                                | Non-Compacted  | 0.7                               | 1.2                                 | 12.5                              | 0.2                          | 1.8                           | 18.0                          | 7.41                                        | 2,100                                         | 31                                                        | 37                                                      | 466                          | 500/D            |
|                | 4                                  | Non-Compacted  | 0.7                               | 1.2                                 | 13.5                              | 0.2                          | 1.8                           | 19.0                          | 4.61                                        | 1,700                                         | 41                                                        | 48                                                      | 562                          | 500/D            |
|                | 6                                  | Non-Compacted  | 0.7                               | 1.2                                 | 15.0                              | 0.2                          | 1.8                           | 20.5                          | 3.08                                        | 1,450                                         | 52                                                        | 59                                                      | 687                          | 500/D            |
|                | 10                                 | Compacted      | 0.7                               | 1.2                                 | 16.5                              | 0.2                          | 1.8                           | 21.5                          | 1.83                                        | 1,250                                         | 69                                                        | 78                                                      | 868                          | 500/D            |
|                | 16                                 | Compacted      | 0.7                               | 1.2                                 | 19.0                              | 0.2                          | 1.8                           | 24.0                          | 1,150                                       | 1,000                                         | 91                                                        | 101                                                     | 1163                         | 500/D            |
|                | 25                                 | Compacted      | 0.9                               | 1.2                                 | 23.0                              | 0.2                          | 1.8                           | 28.5                          | 0.727                                       | 1,050                                         | 122                                                       | 130                                                     | 1639                         | 500/D            |
|                | 35                                 | Compacted      | 0.9                               | 1.2                                 | 25.5                              | 0.2                          | 1.9                           | 31.0                          | 0.524                                       | 900                                           | 149                                                       | 156                                                     | 2078                         | 500/D            |
|                | 50                                 | Compacted      | 1.0                               | 1.2                                 | 29.0                              | 0.2                          | 2.0                           | 35.0                          | 0.387                                       | 850                                           | 181                                                       | 185                                                     | 2682                         | 500/D            |
|                | 70                                 | Compacted      | 1.1                               | 1.2                                 | 33.5                              | 0.5                          | 2.2                           | 40.5                          | 0.268                                       | 800                                           | 227                                                       | 226                                                     | 3890                         | 500/D            |
|                | 95                                 | Compacted      | 1.1                               | 1.3                                 | 38.0                              | 0.5                          | 2.4                           | 45.5                          | 0.193                                       | 650                                           | 281                                                       | 272                                                     | 5119                         | 500/D            |
|                | 120                                | Compacted      | 1.2                               | 1.4                                 | 42.5                              | 0.5                          | 2.5                           | 50.0                          | 0.153                                       | 650                                           | 325                                                       | 309                                                     | 6338                         | 500/D            |
|                | 150                                | Compacted      | 1.4                               | 1.5                                 | 47.0                              | 0.5                          | 2.7                           | 55.0                          | 0.124                                       | 700                                           | 370                                                       | 345                                                     | 7709                         | 500/D            |
|                | 185                                | Compacted      | 1.6                               | 1.6                                 | 53.0                              | 0.5                          | 2.9                           | 61.0                          | 0.0991                                      | 700                                           | 426                                                       | 389                                                     | 9451                         | 300/D            |
|                | 240                                | Compacted      | 1.7                               | 1.7                                 | 59.5                              | 0.5                          | 3.1                           | 68.5                          | 0.0754                                      | 650                                           | 504                                                       | 449                                                     | 12105                        | 300/D            |
|                | 300                                | Compacted      | 1.8                               | 1.8                                 | 65.5                              | 0.5                          | 3.3                           | 75.0                          | 0.0601                                      | 600                                           | 576                                                       | 504                                                     | 14849                        | 300/D            |
|                | 400                                | Compacted      | 2.0                               | 2.0                                 | 73.5                              | 0.5                          | 3.6                           | 83.5                          | 0.0470                                      | 600                                           | 662                                                       | 567                                                     | 18636                        | 200/D            |

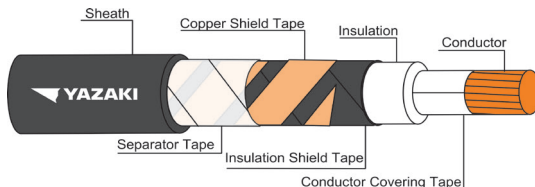
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

**D** : Packing in drum

| Number of core | Nominal cross sectional area (mm²) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|----------------|------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 4              | 1.5                                | 15.4287                  | 0.3427               | 0.1077              | 15.4291            |
|                | 2.5                                | 9.4485                   | 0.3249               | 0.1021              | 9.4491             |
|                | 4                                  | 5.8782                   | 0.3026               | 0.0951              | 5.8790             |
|                | 6                                  | 3.9274                   | 0.2890               | 0.0908              | 3.9284             |
|                | 10                                 | 2.3335                   | 0.2747               | 0.0863              | 2.3351             |
|                | 16                                 | 1.4665                   | 0.2614               | 0.0821              | 1.4688             |
|                | 25                                 | 0.9272                   | 0.2637               | 0.0829              | 0.9309             |
|                | 35                                 | 0.6685                   | 0.2567               | 0.0807              | 0.6733             |
|                | 50                                 | 0.4939                   | 0.2435               | 0.0765              | 0.4998             |
|                | 70                                 | 0.3424                   | 0.2395               | 0.0752              | 0.3506             |
|                | 95                                 | 0.2471                   | 0.2331               | 0.0732              | 0.2577             |
|                | 120                                | 0.1964                   | 0.2289               | 0.0719              | 0.2091             |
|                | 150                                | 0.1597                   | 0.2302               | 0.0723              | 0.1753             |
|                | 185                                | 0.1283                   | 0.2326               | 0.0731              | 0.1476             |
|                | 240                                | 0.0987                   | 0.2281               | 0.0717              | 0.1219             |
|                | 300                                | 0.0798                   | 0.2260               | 0.0710              | 0.1068             |
|                | 400                                | 0.0639                   | 0.2259               | 0.0710              | 0.0955             |

## 1.8/3KV-CV

### 1.8/3(3.6)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE



IEC 60502-1

#### CABLE STRUCTURE

|                          |                                           |
|--------------------------|-------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)        |
| <b>Insulation shield</b> | : Semi-conductive tape                    |
| <b>Insulation color</b>  | : Natural (Translucent)                   |
| <b>Shield</b>            | : Copper tape                             |
| <b>Separator tape</b>    | : Non-hygroscopic material                |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)      |

#### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 3,600 Volts |
| <b>Rated voltage</b>      | : 1,800 Volts between Line to Earth<br>: 3,000 Volts between Line to Line           |
| <b>AC Testing voltage</b> | : 6,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1                                               |

#### APPLICATION

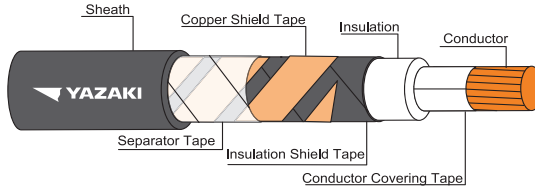
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of core | Nominal cross sectional area | Number of wires minimum | Insulation thickness nominal | Sheath thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Insulation resistance at 20°C minimum | Cable weight approx. | Standard length per drum |
|----------------|------------------------------|-------------------------|------------------------------|--------------------------|--------------------------|--------------------------------------|---------------------------------------|----------------------|--------------------------|
|                | (mm <sup>2</sup> )           |                         |                              |                          |                          | (Ω/km)                               | (MΩ·km)                               | (kg/km)              | (m)                      |
| 1              | 10                           | 6                       | 2.0                          | 1.4                      | 12.5                     | 1.83                                 | 2,900                                 | 213                  | 500                      |
|                | 16                           | 6                       | 2.0                          | 1.4                      | 13.5                     | 1.15                                 | 2,450                                 | 280                  | 500                      |
|                | 25                           | 6                       | 2.0                          | 1.4                      | 15.0                     | 0.727                                | 2,050                                 | 379                  | 500                      |
|                | 35                           | 6                       | 2.0                          | 1.4                      | 16.0                     | 0.524                                | 1,800                                 | 479                  | 500                      |
|                | 50                           | 6                       | 2.0                          | 1.4                      | 17.0                     | 0.387                                | 1,550                                 | 608                  | 500                      |
|                | 70                           | 12                      | 2.0                          | 1.5                      | 19.0                     | 0.268                                | 1,350                                 | 827                  | 500                      |
|                | 95                           | 15                      | 2.0                          | 1.5                      | 21.0                     | 0.193                                | 1,150                                 | 1087                 | 500                      |
|                | 120                          | 18                      | 2.0                          | 1.6                      | 22.5                     | 0.153                                | 1,050                                 | 1351                 | 500                      |
|                | 150                          | 18                      | 2.0                          | 1.6                      | 24.0                     | 0.124                                | 950                                   | 1621                 | 500                      |
|                | 185                          | 30                      | 2.0                          | 1.7                      | 26.0                     | 0.0991                               | 850                                   | 1953                 | 500                      |
|                | 240                          | 34                      | 2.0                          | 1.8                      | 28.5                     | 0.0754                               | 750                                   | 2556                 | 500                      |
|                | 300                          | 34                      | 2.0                          | 1.8                      | 31.0                     | 0.0601                               | 700                                   | 3113                 | 500                      |
|                | 400                          | 53                      | 2.0                          | 2.0                      | 34.0                     | 0.0470                               | 600                                   | 3961                 | 500                      |

## 1.8/3KV-CV

### 1.8/3(3.6)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-1



#### CABLE STRUCTURE

|                          |                                           |
|--------------------------|-------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)        |
| <b>Insulation shield</b> | : Semi-conductive tape                    |
| <b>Insulation color</b>  | : Natural (Translucent)                   |
| <b>Shield</b>            | : Copper tape                             |
| <b>Separator tape</b>    | : Non-hygroscopic tape                    |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)      |

#### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 3,600 Volts |
| <b>Rated voltage</b>      | : 1,800 Volts between Line to Earth<br>: 3,000 Volts between Line to Line           |
| <b>AC Testing voltage</b> | : 6,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1,                                              |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

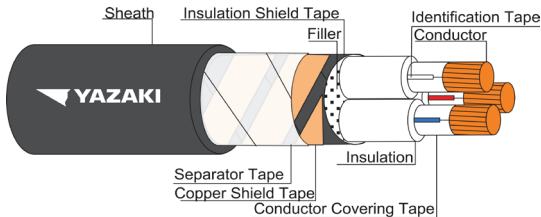
| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Current rating in free air at 40°C (A) |          |         | Current rating Direct burial at 30°C (A) |         | Current rating Underground duct at 30°C (A) |         |
|----------------|----------------------------------------------------|----------------------------------------|----------|---------|------------------------------------------|---------|---------------------------------------------|---------|
|                |                                                    | Spaced                                 | Touching | Trefoil | Spaced                                   | Trefoil | Spaced                                      | Trefoil |
| 1              | 10                                                 | 100                                    | 81       | 79      | 88                                       | 82      | 79                                          | 76      |
|                | 16                                                 | 132                                    | 106      | 104     | 113                                      | 106     | 101                                         | 98      |
|                | 25                                                 | 173                                    | 140      | 136     | 145                                      | 136     | 129                                         | 125     |
|                | 35                                                 | 211                                    | 171      | 166     | 173                                      | 163     | 157                                         | 148     |
|                | 50                                                 | 255                                    | 207      | 201     | 205                                      | 192     | 185                                         | 175     |
|                | 70                                                 | 321                                    | 261      | 253     | 251                                      | 235     | 225                                         | 217     |
|                | 95                                                 | 395                                    | 321      | 311     | 301                                      | 281     | 275                                         | 264     |
|                | 120                                                | 457                                    | 373      | 362     | 342                                      | 319     | 312                                         | 299     |
|                | 150                                                | 522                                    | 426      | 413     | 384                                      | 358     | 349                                         | 334     |
|                | 185                                                | 601                                    | 492      | 476     | 434                                      | 403     | 393                                         | 376     |
|                | 240                                                | 716                                    | 587      | 567     | 504                                      | 466     | 465                                         | 443     |
|                | 300                                                | 827                                    | 678      | 654     | 571                                      | 525     | 524                                         | 498     |
|                | 400                                                | 963                                    | 791      | 762     | 650                                      | 592     | 595                                         | 563     |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance Z (Ω/km) |          |         |
|----------------|----------------------------------------------------|--------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                                    | Spaced                   | Touching | Trefoil | Spaced               | Touching | Trefoil | Spaced              | Touching | Trefoil | Spaced             | Touching | Trefoil |
| 1              | 10                                                 | 2.3335                   | 2.3335   | 2.3335  | 0.6258               | 0.4872   | 0.4410  | 0.1966              | 0.1531   | 0.1385  | 2.3418             | 2.3385   | 2.3376  |
|                | 16                                                 | 1.4664                   | 1.4664   | 1.4664  | 0.5945               | 0.4559   | 0.4096  | 0.1868              | 0.1432   | 0.1287  | 1.4782             | 1.4734   | 1.4720  |
|                | 25                                                 | 0.9271                   | 0.9271   | 0.9271  | 0.5669               | 0.4283   | 0.3820  | 0.1781              | 0.1346   | 0.1200  | 0.9441             | 0.9368   | 0.9348  |
|                | 35                                                 | 0.6683                   | 0.6683   | 0.6683  | 0.5492               | 0.4106   | 0.3644  | 0.1725              | 0.1290   | 0.1145  | 0.6902             | 0.6806   | 0.6780  |
|                | 50                                                 | 0.4936                   | 0.4937   | 0.4937  | 0.5223               | 0.3836   | 0.3374  | 0.1641              | 0.1205   | 0.1060  | 0.5202             | 0.5082   | 0.5050  |
|                | 70                                                 | 0.3420                   | 0.3421   | 0.3422  | 0.5093               | 0.3706   | 0.3244  | 0.1600              | 0.1164   | 0.1019  | 0.3776             | 0.3614   | 0.3571  |
|                | 95                                                 | 0.2465                   | 0.2466   | 0.2467  | 0.4940               | 0.3553   | 0.3091  | 0.1552              | 0.1116   | 0.0971  | 0.2913             | 0.2707   | 0.2651  |
|                | 120                                                | 0.1956                   | 0.1958   | 0.1959  | 0.4829               | 0.3443   | 0.2981  | 0.1517              | 0.1082   | 0.0937  | 0.2475             | 0.2237   | 0.2171  |
|                | 150                                                | 0.1587                   | 0.1590   | 0.1592  | 0.4749               | 0.3362   | 0.2900  | 0.1492              | 0.1056   | 0.0911  | 0.2178             | 0.1909   | 0.1834  |
|                | 185                                                | 0.1271                   | 0.1275   | 0.1277  | 0.4681               | 0.3295   | 0.2833  | 0.1471              | 0.1035   | 0.0890  | 0.1944             | 0.1642   | 0.1557  |
|                | 240                                                | 0.0972                   | 0.0976   | 0.0980  | 0.4595               | 0.3209   | 0.2747  | 0.1444              | 0.1008   | 0.0863  | 0.1740             | 0.1403   | 0.1306  |
|                | 300                                                | 0.0779                   | 0.0786   | 0.0791  | 0.4521               | 0.3135   | 0.2672  | 0.1420              | 0.0985   | 0.0839  | 0.1620             | 0.1260   | 0.1153  |
|                | 400                                                | 0.0616                   | 0.0624   | 0.0631  | 0.4478               | 0.3092   | 0.2630  | 0.1407              | 0.0971   | 0.0826  | 0.1536             | 0.1155   | 0.1040  |

## 1.8/3KV-CV

### 1.8/3(3.6)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE



IEC 60502-1

#### CABLE STRUCTURE

|                            |                                           |
|----------------------------|-------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded annealed copper wire |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)        |
| <b>Filler</b>              | : Non-hygroscopic material                |
| <b>Insulation shield</b>   | : Semi-conductive tape                    |
| <b>Core identification</b> | : Color tape White, Red, Blue             |
| <b>Shield</b>              | : Copper tape                             |
| <b>Separator tape</b>      | : Non-hygroscopic material                |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST2)      |

#### TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 3,600 Volts |
| <b>Rated voltage</b>      | : 1,800 Volts between Line to Earth<br>: 3,000 Volts between Line to Line           |
| <b>AC Testing voltage</b> | : 6,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1                                               |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

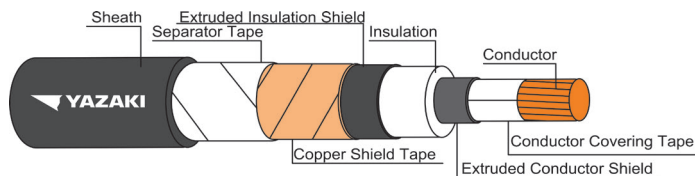
| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Maximum Current Rating |                              |                                 | Cable weight approx.<br>(kg/km) | Standard length per drum<br>(m) |
|-----------------|----------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|------------------------|------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                 |                                                    |                                  |                                      |                                  |                                  |                                                |                                                  | In air at 40°C<br>(A)  | Direct burial at 30°C<br>(A) | Underground duct at 30°C<br>(A) |                                 |                                 |
| 3               | 10                                                 | 6                                | 2.0                                  | 1.8                              | 24.5                             | 1.83                                           | 2,900                                            | 73                     | 80                           | 63                              | 659                             | 500                             |
|                 | 16                                                 | 6                                | 2.0                                  | 1.8                              | 27.0                             | 1.15                                           | 2,450                                            | 96                     | 103                          | 81                              | 873                             | 500                             |
|                 | 25                                                 | 6                                | 2.0                                  | 1.8                              | 29.5                             | 0.727                                          | 2,050                                            | 126                    | 133                          | 105                             | 1184                            | 500                             |
|                 | 35                                                 | 6                                | 2.0                                  | 1.9                              | 32.0                             | 0.524                                          | 1,800                                            | 154                    | 159                          | 126                             | 1512                            | 500                             |
|                 | 50                                                 | 6                                | 2.0                                  | 2.0                              | 35.0                             | 0.387                                          | 1,550                                            | 186                    | 188                          | 151                             | 1929                            | 500                             |
|                 | 70                                                 | 12                               | 2.0                                  | 2.1                              | 38.5                             | 0.268                                          | 1,350                                            | 233                    | 230                          | 185                             | 2617                            | 500                             |
|                 | 95                                                 | 15                               | 2.0                                  | 2.2                              | 43.0                             | 0.193                                          | 1,150                                            | 286                    | 275                          | 224                             | 3447                            | 500                             |
|                 | 120                                                | 18                               | 2.0                                  | 2.3                              | 46.5                             | 0.153                                          | 1,050                                            | 331                    | 313                          | 255                             | 4279                            | 500                             |
|                 | 150                                                | 18                               | 2.0                                  | 2.4                              | 49.5                             | 0.124                                          | 950                                              | 377                    | 350                          | 287                             | 5145                            | 500                             |
|                 | 185                                                | 30                               | 2.0                                  | 2.5                              | 53.5                             | 0.0991                                         | 850                                              | 434                    | 395                          | 327                             | 6277                            | 500                             |
|                 | 240                                                | 34                               | 2.0                                  | 2.7                              | 59.0                             | 0.0754                                         | 750                                              | 514                    | 457                          | 379                             | 8089                            | 500                             |
|                 | 300                                                | 34                               | 2.0                                  | 2.9                              | 64.5                             | 0.0601                                         | 700                                              | 589                    | 513                          | 432                             | 9986                            | 300                             |
|                 | 400                                                | 53                               | 2.0                                  | 3.1                              | 70.5                             | 0.0470                                         | 600                                              | 679                    | 578                          | 487                             | 12561                           | 300                             |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance R<br>(Ω/km) | Inductance L<br>(mH/km) | Reactance XL<br>(Ω/km) | Impedance Z<br>(Ω/km) |
|----------------|----------------------------------------------------|-----------------------------|-------------------------|------------------------|-----------------------|
| 3              | 10                                                 | 2.3335                      | 0.3685                  | 0.1158                 | 2.3364                |
|                | 16                                                 | 1.4665                      | 0.3435                  | 0.1079                 | 1.4705                |
|                | 25                                                 | 0.9272                      | 0.3222                  | 0.1012                 | 0.9327                |
|                | 35                                                 | 0.6684                      | 0.3090                  | 0.0971                 | 0.6754                |
|                | 50                                                 | 0.4938                      | 0.2868                  | 0.0901                 | 0.5020                |
|                | 70                                                 | 0.3423                      | 0.2744                  | 0.0862                 | 0.3530                |
|                | 95                                                 | 0.2469                      | 0.2640                  | 0.0829                 | 0.2605                |
|                | 120                                                | 0.1962                      | 0.2546                  | 0.0800                 | 0.2119                |
|                | 150                                                | 0.1595                      | 0.2493                  | 0.0783                 | 0.1777                |
|                | 185                                                | 0.1281                      | 0.2440                  | 0.0767                 | 0.1493                |
|                | 240                                                | 0.0985                      | 0.2359                  | 0.0741                 | 0.1233                |
|                | 300                                                | 0.0797                      | 0.2331                  | 0.0732                 | 0.1082                |
|                | 400                                                | 0.0638                      | 0.2288                  | 0.0719                 | 0.0961                |

## 3.6/6KV-CV

### 3.6/6(7.2)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE



IEC 60502-2

#### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 7,200 Volts         |
| <b>Rated voltage</b>      | : 3,600 Volts between Line to Earth<br>: 6,000 Volts between Line to Line                   |
| <b>AC Testing voltage</b> | : 12,500 Volts                                                                              |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                       |
| <b>Remark</b>             | : *Insulation shield shall be applied semi-conductive tape (for size < 25 mm <sup>2</sup> ) |

#### APPLICATION

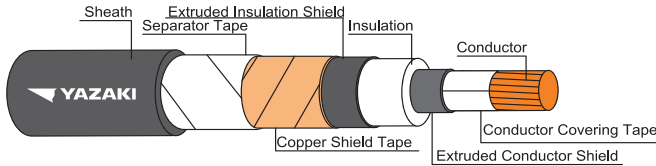
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ-km) | Cable weight approx.<br>(kg/km) | Standard Length per drum<br>(m) |
|----------------|----------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|---------------------------------|
| 1              | 10                                                 | 6                                | 2.5                                  | 1.4                              | 15.0                             | 1.83                                           | 2,850                                            | 267                             | 500                             |
|                | 16                                                 | 6                                | 2.5                                  | 1.5                              | 16.0                             | 1.15                                           | 2,500                                            | 348                             | 500                             |
|                | 25                                                 | 6                                | 2.5                                  | 1.5                              | 18.5                             | 0.727                                          | 2,150                                            | 479                             | 500                             |
|                | 35                                                 | 6                                | 2.5                                  | 1.5                              | 19.5                             | 0.524                                          | 1,900                                            | 586                             | 500                             |
|                | 50                                                 | 6                                | 2.5                                  | 1.6                              | 21.0                             | 0.387                                          | 1,700                                            | 731                             | 500                             |
|                | 70                                                 | 12                               | 2.5                                  | 1.6                              | 22.5                             | 0.268                                          | 1,500                                            | 950                             | 500                             |
|                | 95                                                 | 15                               | 2.5                                  | 1.7                              | 24.5                             | 0.193                                          | 1,300                                            | 1233                            | 500                             |
|                | 120                                                | 18                               | 2.5                                  | 1.7                              | 26.0                             | 0.153                                          | 1,200                                            | 1499                            | 500                             |
|                | 150                                                | 18                               | 2.5                                  | 1.8                              | 27.5                             | 0.124                                          | 1,100                                            | 1790                            | 500                             |
|                | 185                                                | 30                               | 2.5                                  | 1.8                              | 29.5                             | 0.0991                                         | 1,000                                            | 2124                            | 500                             |
|                | 240                                                | 34                               | 2.6                                  | 1.9                              | 32.5                             | 0.0754                                         | 900                                              | 2723                            | 500                             |
|                | 300                                                | 34                               | 2.8                                  | 2.0                              | 35.0                             | 0.0601                                         | 900                                              | 3361                            | 500                             |
|                | 400                                                | 53                               | 3.0                                  | 2.1                              | 38.5                             | 0.0470                                         | 850                                              | 4241                            | 500                             |
|                | 500                                                | 53                               | 3.2                                  | 2.2                              | 42.5                             | 0.0366                                         | 800                                              | 5380                            | 500                             |
|                | 630                                                | 53                               | 3.2                                  | 2.4                              | 46.5                             | 0.0283                                         | 700                                              | 6795                            | 500                             |
|                | 800                                                | 53                               | 3.2                                  | 2.5                              | 50.5                             | 0.0221                                         | 600                                              | 8400                            | 500                             |
|                | 1000                                               | 53                               | 3.2                                  | 2.7                              | 56.0                             | 0.0176                                         | 550                                              | 10849                           | 300                             |

## 3.6/6KV-CV

### 3.6/6(7.2)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic material                           |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                             |
|---------------------------|---------------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 7,200 Volts         |
| <b>Rated voltage</b>      | : 3,600 Volts between Line to Earth<br>: 6,000 Volts between Line to Line                   |
| <b>AC Testing voltage</b> | : 12,500 Volts                                                                              |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                       |
| <b>Remark</b>             | : *Insulation shield shall be applied semi-conductive tape (for size < 25 mm <sup>2</sup> ) |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Continuous current rating in free air at 40°C maximum (A) |          |         | Current rating Direct burial at 30°C (A) |         | Current rating Underground duct at 30°C (A) |         |
|----------------|-------------------------------------------------|-----------------------------------------------------------|----------|---------|------------------------------------------|---------|---------------------------------------------|---------|
|                |                                                 | Spaced                                                    | Touching | Trefoil | Spaced                                   | Trefoil | Spaced                                      | Trefoil |
| 1              | 10                                              | 100                                                       | 83       | 81      | 88                                       | 83      | 79                                          | 76      |
|                | 16                                              | 132                                                       | 109      | 107     | 114                                      | 107     | 103                                         | 100     |
|                | 25                                              | 175                                                       | 145      | 142     | 145                                      | 137     | 132                                         | 127     |
|                | 35                                              | 213                                                       | 177      | 172     | 174                                      | 164     | 157                                         | 152     |
|                | 50                                              | 256                                                       | 213      | 208     | 206                                      | 193     | 185                                         | 178     |
|                | 70                                              | 321                                                       | 267      | 259     | 252                                      | 236     | 230                                         | 221     |
|                | 95                                              | 393                                                       | 327      | 318     | 302                                      | 282     | 275                                         | 264     |
|                | 120                                             | 455                                                       | 379      | 368     | 343                                      | 320     | 311                                         | 299     |
|                | 150                                             | 518                                                       | 432      | 419     | 385                                      | 359     | 356                                         | 340     |
|                | 185                                             | 597                                                       | 498      | 484     | 435                                      | 405     | 401                                         | 383     |
|                | 240                                             | 710                                                       | 594      | 575     | 505                                      | 469     | 464                                         | 443     |
|                | 300                                             | 822                                                       | 688      | 666     | 572                                      | 527     | 536                                         | 509     |
|                | 400                                             | 960                                                       | 804      | 777     | 652                                      | 597     | 610                                         | 577     |
|                | 500                                             | 1126                                                      | 943      | 908     | 744                                      | 675     | 707                                         | 666     |
|                | 630                                             | 1308                                                      | 1094     | 1048    | 847                                      | 756     | 802                                         | 750     |
|                | 800                                             | 1504                                                      | 1251     | 1191    | 952                                      | 835     | 921                                         | 856     |
|                | 1000                                            | 1720                                                      | 1422     | 1343    | 1058                                     | 909     | 1020                                        | 936     |

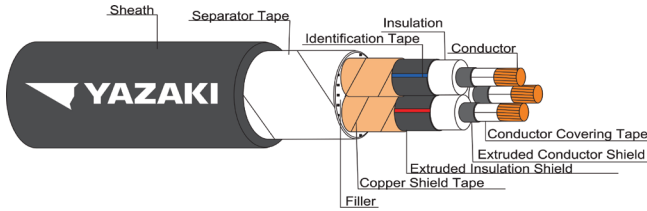
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance Z (Ω/km) |          |         |
|----------------|-------------------------------------------------|--------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                                 | Space                    | Touching | Trefoil | Space                | Touching | Trefoil | Space               | Touching | Trefoil | Space              | Touching | Trefoil |
| 1              | 10                                              | 2.3335                   | 2.3335   | 2.3335  | 0.6541               | 0.5155   | 0.4693  | 0.2055              | 0.1619   | 0.1474  | 2.3425             | 2.3391   | 2.3382  |
|                | 16                                              | 1.4664                   | 1.4664   | 1.4664  | 0.6260               | 0.4873   | 0.4411  | 0.1967              | 0.1531   | 0.1386  | 1.4795             | 1.4744   | 1.4729  |
|                | 25                                              | 0.9271                   | 0.9271   | 0.9271  | 0.6052               | 0.4665   | 0.4203  | 0.1901              | 0.1466   | 0.1320  | 0.9464             | 0.9386   | 0.9365  |
|                | 35                                              | 0.6683                   | 0.6683   | 0.6683  | 0.5863               | 0.4477   | 0.4015  | 0.1842              | 0.1406   | 0.1261  | 0.6932             | 0.6829   | 0.6801  |
|                | 50                                              | 0.4936                   | 0.4937   | 0.4937  | 0.5578               | 0.4191   | 0.3729  | 0.1752              | 0.1317   | 0.1171  | 0.5238             | 0.5110   | 0.5074  |
|                | 70                                              | 0.3420                   | 0.3422   | 0.3422  | 0.5377               | 0.3990   | 0.3528  | 0.1689              | 0.1253   | 0.1108  | 0.3814             | 0.3643   | 0.3597  |
|                | 95                                              | 0.2465                   | 0.2466   | 0.2467  | 0.5217               | 0.3831   | 0.3369  | 0.1639              | 0.1204   | 0.1058  | 0.2960             | 0.2744   | 0.2684  |
|                | 120                                             | 0.1956                   | 0.1958   | 0.1959  | 0.5072               | 0.3686   | 0.3223  | 0.1593              | 0.1158   | 0.1013  | 0.2523             | 0.2275   | 0.2205  |
|                | 150                                             | 0.1587                   | 0.1590   | 0.1592  | 0.4992               | 0.3606   | 0.3144  | 0.1568              | 0.1133   | 0.0988  | 0.2231             | 0.1952   | 0.1874  |
|                | 185                                             | 0.1271                   | 0.1275   | 0.1277  | 0.4915               | 0.3529   | 0.3067  | 0.1544              | 0.1109   | 0.0964  | 0.2000             | 0.1690   | 0.1600  |
|                | 240                                             | 0.0972                   | 0.0976   | 0.0978  | 0.4821               | 0.3435   | 0.2973  | 0.1515              | 0.1079   | 0.0934  | 0.1800             | 0.1455   | 0.1352  |
|                | 300                                             | 0.0779                   | 0.0784   | 0.0788  | 0.4772               | 0.3386   | 0.2924  | 0.1499              | 0.1064   | 0.0919  | 0.1689             | 0.1321   | 0.1210  |
|                | 400                                             | 0.0616                   | 0.0622   | 0.0627  | 0.4719               | 0.3332   | 0.2870  | 0.1483              | 0.1047   | 0.0902  | 0.1605             | 0.1218   | 0.1098  |
|                | 500                                             | 0.0487                   | 0.0495   | 0.0502  | 0.4672               | 0.3286   | 0.2823  | 0.1468              | 0.1032   | 0.0887  | 0.1546             | 0.1145   | 0.1019  |
|                | 630                                             | 0.0386                   | 0.0397   | 0.0406  | 0.4599               | 0.3213   | 0.2751  | 0.1445              | 0.1009   | 0.0864  | 0.1495             | 0.1085   | 0.0955  |
|                | 800                                             | 0.0313                   | 0.0327   | 0.0339  | 0.4528               | 0.3142   | 0.2680  | 0.1423              | 0.0987   | 0.0842  | 0.1457             | 0.1040   | 0.0908  |
|                | 1000                                            | 0.0262                   | 0.0279   | 0.0293  | 0.4445               | 0.3059   | 0.2596  | 0.1396              | 0.0961   | 0.0816  | 0.1421             | 0.1001   | 0.0867  |

## 3.6/6KV-CV

### 3.6/6(7.2)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

- Conductor** : Compacted stranded annealed copper wire
- Conductor shield** : Semi-conductive Cross-linked polyethylene compound
- Insulation** : Cross-Linked polyethylene (XLPE)
- Insulation shield** : Semi-conductive Cross-linked polyethylene compound
- Core identification** : Color tape White, Red, Blue
- Shield** : Copper tape
- Filler** : Non-hygroscopic material
- Separator tape** : Non-hygroscopic tape
- Sheath** : Black polyvinyl chloride (PVC/ST2)

#### TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 7,200 Volts
- Rated voltage** : 3,600 Volts between Line to Earth  
: 6,000 Volts between Line to Line
- AC Testing voltage** : 12,500 Volts
- Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
- Remark** : \*Insulation shield shall be applied semi-conductive tape (for size < 25 mm<sup>2</sup>)

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Number of wires minimum (No.) | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ·km) | Maximum Current Rating |                           |                              | Cable weight approx. (kg/km) | Standard Length (m) |
|----------------|-------------------------------------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|------------------------|---------------------------|------------------------------|------------------------------|---------------------|
|                |                                                 |                               |                                   |                               |                               |                                             |                                               | In air at 40°C (A)     | Direct burial at 30°C (A) | Underground duct at 30°C (A) |                              |                     |
| 3              | 10                                              | 6                             | 2.5                               | 2.0                           | 29.5                          | 1.83                                        | 2,850                                         | 81                     | 85                        | 65                           | 801                          | 500                 |
|                | 16                                              | 6                             | 2.5                               | 2.0                           | 31.5                          | 1.15                                        | 2,500                                         | 106                    | 108                       | 83                           | 1108                         | 500                 |
|                | 25                                              | 6                             | 2.5                               | 2.1                           | 36.5                          | 0.727                                       | 2,150                                         | 139                    | 139                       | 109                          | 1548                         | 500                 |
|                | 35                                              | 6                             | 2.5                               | 2.2                           | 38.5                          | 0.524                                       | 1,900                                         | 170                    | 174                       | 130                          | 1900                         | 500                 |
|                | 50                                              | 6                             | 2.5                               | 2.3                           | 41.5                          | 0.387                                       | 1,700                                         | 203                    | 195                       | 153                          | 2361                         | 500                 |
|                | 70                                              | 12                            | 2.5                               | 2.4                           | 45.5                          | 0.268                                       | 1,500                                         | 252                    | 238                       | 189                          | 3088                         | 500                 |
|                | 95                                              | 15                            | 2.5                               | 2.5                           | 49.5                          | 0.193                                       | 1,300                                         | 308                    | 284                       | 227                          | 3979                         | 500                 |
|                | 120                                             | 18                            | 2.5                               | 2.6                           | 53.0                          | 0.153                                       | 1,200                                         | 355                    | 322                       | 260                          | 4850                         | 500                 |
|                | 150                                             | 18                            | 2.5                               | 2.8                           | 56.5                          | 0.124                                       | 1,100                                         | 402                    | 360                       | 292                          | 5773                         | 500                 |
|                | 185                                             | 30                            | 2.5                               | 2.9                           | 61.0                          | 0.0991                                      | 1,000                                         | 461                    | 406                       | 329                          | 6984                         | 500                 |
|                | 240                                             | 34                            | 2.6                               | 3.1                           | 67.5                          | 0.0754                                      | 900                                           | 545                    | 470                       | 386                          | 8920                         | 500                 |
|                | 300                                             | 34                            | 2.8                               | 3.3                           | 73.5                          | 0.0601                                      | 900                                           | 625                    | 529                       | 434                          | 10975                        | 300                 |
|                | 400                                             | 53                            | 3.0                               | 3.5                           | 80.5                          | 0.0470                                      | 850                                           | 724                    | 598                       | 496                          | 13719                        | 300                 |

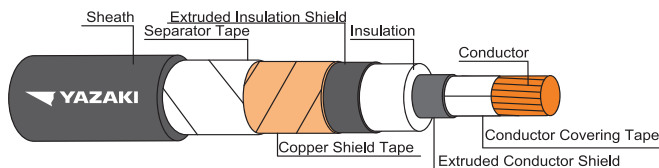
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 3              | 10                                              | 2.3335                   | 0.4117               | 0.1293              | 2.3371             |
|                | 16                                              | 1.4665                   | 0.3827               | 0.1202              | 1.4714             |
|                | 25                                              | 0.9272                   | 0.3694               | 0.1161              | 0.9344             |
|                | 35                                              | 0.6684                   | 0.3529               | 0.1109              | 0.6775             |
|                | 50                                              | 0.4938                   | 0.3265               | 0.1026              | 0.5043             |
|                | 70                                              | 0.3423                   | 0.3102               | 0.0975              | 0.3559             |
|                | 95                                              | 0.2469                   | 0.2962               | 0.0931              | 0.2639             |
|                | 120                                             | 0.1960                   | 0.2843               | 0.0893              | 0.2154             |
|                | 150                                             | 0.1593                   | 0.2770               | 0.0870              | 0.1815             |
|                | 185                                             | 0.1278                   | 0.2721               | 0.0855              | 0.1538             |
|                | 240                                             | 0.0981                   | 0.2646               | 0.0831              | 0.1286             |
|                | 300                                             | 0.0792                   | 0.2606               | 0.0819              | 0.1139             |
|                | 400                                             | 0.0632                   | 0.2570               | 0.0807              | 0.1025             |

## 6/10KV-CV

### 6/10(12)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 12,000 Volts |
| <b>Rated voltage</b>      | : 6,000 Volts between Line to Earth<br>: 10,000 Volts between Line to Line           |
| <b>AC Testing voltage</b> | : 21,000 volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

#### APPLICATION

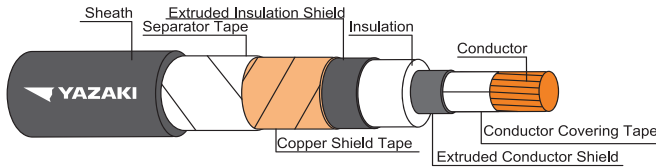
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area | Number of wires minimum | Insulation thickness nominal | Sheath thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Insulation resistance at 20°C minimum | Cable weight approx. | Standard Length per drum |
|----------------|------------------------------|-------------------------|------------------------------|--------------------------|--------------------------|--------------------------------------|---------------------------------------|----------------------|--------------------------|
|                | (mm <sup>2</sup> )           | (No.)                   | (mm)                         | (mm)                     | (mm)                     | (Ω/km)                               | (MΩ·km)                               | (kg/km)              | (m)                      |
| 1              | 16                           | 6                       | 3.4                          | 1.5                      | 19.0                     | 1.15                                 | 3,100                                 | 438                  | 500                      |
|                | 25                           | 6                       | 3.4                          | 1.6                      | 20.5                     | 0.727                                | 2,700                                 | 557                  | 500                      |
|                | 35                           | 6                       | 3.4                          | 1.6                      | 21.5                     | 0.524                                | 2,450                                 | 668                  | 500                      |
|                | 50                           | 6                       | 3.4                          | 1.7                      | 23.0                     | 0.387                                | 2,200                                 | 819                  | 500                      |
|                | 70                           | 12                      | 3.4                          | 1.7                      | 24.5                     | 0.268                                | 1,900                                 | 1044                 | 500                      |
|                | 95                           | 15                      | 3.4                          | 1.8                      | 26.5                     | 0.193                                | 1,700                                 | 1335                 | 500                      |
|                | 120                          | 18                      | 3.4                          | 1.8                      | 28.0                     | 0.153                                | 1,550                                 | 1607                 | 500                      |
|                | 150                          | 18                      | 3.4                          | 1.9                      | 29.5                     | 0.124                                | 1,450                                 | 1904                 | 500                      |
|                | 185                          | 30                      | 3.4                          | 1.9                      | 31.5                     | 0.0991                               | 1,300                                 | 2246                 | 500                      |
|                | 240                          | 34                      | 3.4                          | 2.0                      | 34.0                     | 0.0754                               | 1,150                                 | 2846                 | 500                      |
|                | 300                          | 34                      | 3.4                          | 2.1                      | 36.5                     | 0.0601                               | 1,050                                 | 3471                 | 500                      |
|                | 400                          | 53                      | 3.4                          | 2.2                      | 39.5                     | 0.0470                               | 950                                   | 4336                 | 500                      |
|                | 500                          | 53                      | 3.4                          | 2.3                      | 43.0                     | 0.0366                               | 850                                   | 5458                 | 500                      |
|                | 630                          | 53                      | 3.4                          | 2.4                      | 47.0                     | 0.0283                               | 750                                   | 6860                 | 500                      |
|                | 800                          | 53                      | 3.4                          | 2.5                      | 51.0                     | 0.0221                               | 650                                   | 8472                 | 500                      |
|                | 1000                         | 53                      | 3.4                          | 2.6                      | 56.5                     | 0.0176                               | 600                                   | 11010                | 300                      |

## 6/10KV-CV

### 6/10(12)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Current rating in free air at 40°C (A)                                            |                                                                                   |                                                                                   | Current rating Direct burial at 30°C (A) |         | Current rating Underground duct at 30°C (A) |         |
|----------------|-------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------|---------|---------------------------------------------|---------|
|                |                                                 | Spaced                                                                            | Touching                                                                          | Trefoil                                                                           | Spaced                                   | Trefoil | Spaced                                      | Trefoil |
|                |                                                 |  |  |  |                                          |         |                                             |         |
| 1              | 16                                              | 135                                                                               | 114                                                                               | 112                                                                               | 114                                      | 107     | 103                                         | 100     |
|                | 25                                              | 177                                                                               | 150                                                                               | 146                                                                               | 146                                      | 137     | 132                                         | 127     |
|                | 35                                              | 216                                                                               | 182                                                                               | 177                                                                               | 174                                      | 164     | 160                                         | 154     |
|                | 50                                              | 260                                                                               | 219                                                                               | 213                                                                               | 206                                      | 193     | 189                                         | 181     |
|                | 70                                              | 324                                                                               | 273                                                                               | 265                                                                               | 252                                      | 236     | 230                                         | 221     |
|                | 95                                              | 397                                                                               | 334                                                                               | 325                                                                               | 302                                      | 282     | 274                                         | 263     |
|                | 120                                             | 459                                                                               | 386                                                                               | 375                                                                               | 343                                      | 321     | 317                                         | 304     |
|                | 150                                             | 521                                                                               | 439                                                                               | 426                                                                               | 385                                      | 359     | 355                                         | 340     |
|                | 185                                             | 601                                                                               | 506                                                                               | 492                                                                               | 435                                      | 405     | 401                                         | 383     |
|                | 240                                             | 713                                                                               | 601                                                                               | 583                                                                               | 506                                      | 469     | 464                                         | 442     |
|                | 300                                             | 820                                                                               | 692                                                                               | 670                                                                               | 572                                      | 528     | 536                                         | 509     |
|                | 400                                             | 954                                                                               | 804                                                                               | 777                                                                               | 652                                      | 597     | 609                                         | 576     |
|                | 500                                             | 1116                                                                              | 939                                                                               | 905                                                                               | 744                                      | 675     | 706                                         | 665     |
|                | 630                                             | 1299                                                                              | 1090                                                                              | 1045                                                                              | 847                                      | 756     | 802                                         | 750     |
|                | 800                                             | 1494                                                                              | 1247                                                                              | 1188                                                                              | 952                                      | 835     | 920                                         | 855     |
|                | 1000                                            | 1708                                                                              | 1417                                                                              | 1340                                                                              | 1058                                     | 909     | 1019                                        | 935     |

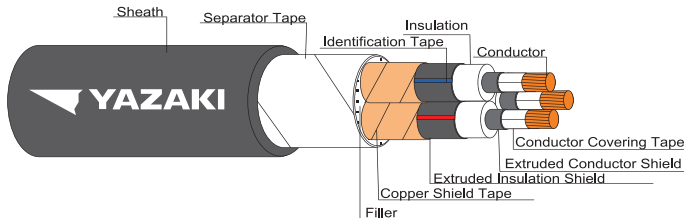
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance Z (Ω/km) |          |         |
|----------------|-------------------------------------------------|--------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                                 | Spaced                   | Touching | Trefoil | Spaced               | Touching | Trefoil | Spaced              | Touching | Trefoil | Spaced             | Touching | Trefoil |
|                |                                                 |                          |          |         |                      |          |         |                     |          |         |                    |          |         |
| 1              | 16                                              | 1.4664                   | 1.4664   | 1.4664  | 0.5597               | 0.5210   | 0.4748  | 0.2073              | 0.1637   | 0.1452  | 1.4810             | 1.4755   | 1.4740  |
|                | 25                                              | 0.9271                   | 0.9271   | 0.9271  | 0.6295               | 0.4908   | 0.4446  | 0.1978              | 0.1542   | 0.1397  | 0.9480             | 0.9398   | 0.9376  |
|                | 35                                              | 0.6683                   | 0.6683   | 0.6683  | 0.6093               | 0.4707   | 0.4244  | 0.1914              | 0.1479   | 0.1333  | 0.6952             | 0.6845   | 0.6815  |
|                | 50                                              | 0.4936                   | 0.4937   | 0.4937  | 0.5792               | 0.4406   | 0.3944  | 0.1820              | 0.1384   | 0.1239  | 0.5261             | 0.5127   | 0.5090  |
|                | 70                                              | 0.3420                   | 0.3421   | 0.3422  | 0.5576               | 0.4190   | 0.3728  | 0.1752              | 0.1316   | 0.1171  | 0.3843             | 0.3666   | 0.3617  |
|                | 95                                              | 0.2465                   | 0.2466   | 0.2467  | 0.5401               | 0.4015   | 0.3553  | 0.1697              | 0.1261   | 0.1116  | 0.2993             | 0.2770   | 0.2708  |
|                | 120                                             | 0.1956                   | 0.1958   | 0.1959  | 0.5245               | 0.3859   | 0.3397  | 0.1648              | 0.1212   | 0.1067  | 0.2558             | 0.2303   | 0.2231  |
|                | 150                                             | 0.1587                   | 0.1590   | 0.1591  | 0.5156               | 0.3770   | 0.3307  | 0.1620              | 0.1184   | 0.1039  | 0.2268             | 0.1983   | 0.1899  |
|                | 185                                             | 0.1271                   | 0.1273   | 0.1275  | 0.5068               | 0.3681   | 0.3219  | 0.1592              | 0.1156   | 0.1011  | 0.2037             | 0.1720   | 0.1627  |
|                | 240                                             | 0.0972                   | 0.0974   | 0.0978  | 0.4955               | 0.3569   | 0.3107  | 0.1557              | 0.1121   | 0.0976  | 0.1835             | 0.1485   | 0.1382  |
|                | 300                                             | 0.0779                   | 0.0784   | 0.0788  | 0.4868               | 0.3482   | 0.3020  | 0.1529              | 0.1094   | 0.0949  | 0.1716             | 0.1346   | 0.1233  |
|                | 400                                             | 0.0616                   | 0.0622   | 0.0627  | 0.4781               | 0.3394   | 0.2932  | 0.1502              | 0.1066   | 0.0921  | 0.1623             | 0.1234   | 0.1114  |
|                | 500                                             | 0.0487                   | 0.0495   | 0.0502  | 0.4709               | 0.3323   | 0.2861  | 0.1479              | 0.1044   | 0.0899  | 0.1557             | 0.1155   | 0.1029  |
|                | 630                                             | 0.0386                   | 0.0397   | 0.0406  | 0.4625               | 0.3239   | 0.2776  | 0.1453              | 0.1018   | 0.0872  | 0.1503             | 0.1092   | 0.0962  |
|                | 800                                             | 0.0313                   | 0.0327   | 0.0339  | 0.4552               | 0.3166   | 0.2703  | 0.1430              | 0.0995   | 0.0849  | 0.1464             | 0.1047   | 0.0914  |
|                | 1000                                            | 0.0262                   | 0.0279   | 0.0293  | 0.4466               | 0.3080   | 0.2618  | 0.1403              | 0.0968   | 0.0822  | 0.1427             | 0.1007   | 0.0873  |

## 6/10KV-CV

### 6/10(12)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

- Conductor** : Compacted stranded annealed copper wire
- Conductor shield** : Semi-conductive Cross-linked polyethylene compound
- Insulation** : Cross-Linked polyethylene (XLPE)
- Insulation shield** : Semi-conductive Cross-linked polyethylene compound
- Core identification** : Color tape White, Red, Blue
- Shield** : Copper tape
- Filler** : Non-hygroscopic material
- Separator tape** : Non-hygroscopic tape
- Sheath** : Black polyvinyl chloride (PVC/ST2)

#### TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 12,000 Volts
- Rated voltage** : 6,000 Volts between Line to Earth  
: 10,000 Volts between Line to Line
- AC Testing voltage** : 21,000 Volts
- Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Number of wires minimum (No.) | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ·km) | Maximum Current Rating |                           |                              | Cable weight approx. (kg/km) | Standard length per drum (m) |
|----------------|-------------------------------------------------|-------------------------------|-----------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|------------------------|---------------------------|------------------------------|------------------------------|------------------------------|
|                |                                                 |                               |                                   |                               |                               |                                             |                                               | In air at 40°C (A)     | Direct burial at 30°C (A) | Underground duct at 30°C (A) |                              |                              |
| 3              | 16                                              | 6                             | 3.4                               | 2.2                           | 38.0                          | 1.15                                        | 3,100                                         | 109                    | 108                       | 86                           | 1454                         | 500                          |
|                | 25                                              | 6                             | 3.4                               | 2.2                           | 40.5                          | 0.727                                       | 2,700                                         | 142                    | 139                       | 110                          | 1821                         | 500                          |
|                | 35                                              | 6                             | 3.4                               | 2.3                           | 43.0                          | 0.524                                       | 2,450                                         | 173                    | 166                       | 132                          | 2186                         | 500                          |
|                | 50                                              | 6                             | 3.4                               | 2.4                           | 46.0                          | 0.387                                       | 2,200                                         | 207                    | 196                       | 156                          | 2664                         | 500                          |
|                | 70                                              | 12                            | 3.4                               | 2.6                           | 49.5                          | 0.268                                       | 1,900                                         | 257                    | 239                       | 191                          | 3432                         | 500                          |
|                | 95                                              | 15                            | 3.4                               | 2.7                           | 54.0                          | 0.193                                       | 1,700                                         | 313                    | 285                       | 231                          | 4347                         | 500                          |
|                | 120                                             | 18                            | 3.4                               | 2.8                           | 57.5                          | 0.153                                       | 1,550                                         | 360                    | 323                       | 262                          | 5239                         | 500                          |
|                | 150                                             | 18                            | 3.4                               | 2.9                           | 60.5                          | 0.124                                       | 1,450                                         | 407                    | 361                       | 293                          | 6172                         | 500                          |
|                | 185                                             | 30                            | 3.4                               | 3.0                           | 65.0                          | 0.0991                                      | 1,300                                         | 467                    | 408                       | 335                          | 7425                         | 300                          |
|                | 240                                             | 34                            | 3.4                               | 3.2                           | 71.0                          | 0.0754                                      | 1,150                                         | 549                    | 471                       | 388                          | 9350                         | 300                          |
|                | 300                                             | 34                            | 3.4                               | 3.3                           | 76.0                          | 0.0601                                      | 1,050                                         | 628                    | 529                       | 441                          | 11312                        | 300                          |
|                | 400                                             | 53                            | 3.4                               | 3.5                           | 82.0                          | 0.0470                                      | 950                                           | 721                    | 597                       | 497                          | 13990                        | 300                          |

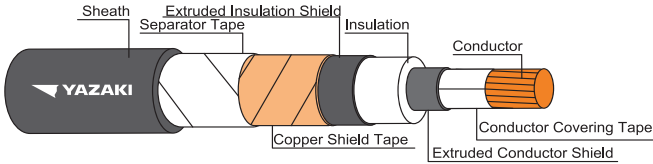
**Remark** : Thermal resistivity of soil 1.2 K.m./W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 3              | 16                                              | 1.4665                   | 0.4267               | 0.1341              | 1.4726             |
|                | 25                                              | 0.9272                   | 0.3977               | 0.1249              | 0.9356             |
|                | 35                                              | 0.6684                   | 0.3803               | 0.1195              | 0.6790             |
|                | 50                                              | 0.4938                   | 0.3511               | 0.1103              | 0.5090             |
|                | 70                                              | 0.3421                   | 0.3327               | 0.1045              | 0.3577             |
|                | 95                                              | 0.2467                   | 0.3167               | 0.0995              | 0.2660             |
|                | 120                                             | 0.1960                   | 0.3034               | 0.0953              | 0.2179             |
|                | 150                                             | 0.1593                   | 0.2950               | 0.0927              | 0.1843             |
|                | 185                                             | 0.1278                   | 0.2886               | 0.0907              | 0.1567             |
|                | 240                                             | 0.0981                   | 0.2782               | 0.0874              | 0.1314             |
|                | 300                                             | 0.0790                   | 0.2705               | 0.0850              | 0.1160             |
|                | 400                                             | 0.0632                   | 0.2630               | 0.0826              | 0.1040             |

## 8.7/15KV-CV

### 8.7/15(17.5)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 17,500 Volts |
| <b>Rated voltage</b>      | : 8,700 Volts between Line to Earth<br>: 15,000 Volts between Line to Line           |
| <b>AC Testing voltage</b> | : 30,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

#### APPLICATION

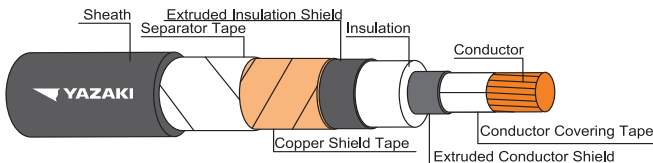
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Cable weight approx.<br>(kg/km) | Standard length per drum<br>(m) |
|----------------|----------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|---------------------------------|
| 1              | 25                                                 | 6                                | 4.5                                  | 1.6                              | 22.5                             | 0.727                                          | 3,300                                            | 635                             | 500                             |
|                | 35                                                 | 6                                | 4.5                                  | 1.7                              | 23.5                             | 0.524                                          | 3,000                                            | 758                             | 500                             |
|                | 50                                                 | 6                                | 4.5                                  | 1.7                              | 25.0                             | 0.387                                          | 2,700                                            | 905                             | 500                             |
|                | 70                                                 | 12                               | 4.5                                  | 1.8                              | 27.0                             | 0.268                                          | 2,400                                            | 1146                            | 500                             |
|                | 95                                                 | 15                               | 4.5                                  | 1.8                              | 28.5                             | 0.193                                          | 2,100                                            | 1432                            | 500                             |
|                | 120                                                | 18                               | 4.5                                  | 1.9                              | 30.5                             | 0.153                                          | 1,950                                            | 1722                            | 500                             |
|                | 150                                                | 18                               | 4.5                                  | 1.9                              | 31.5                             | 0.124                                          | 1,800                                            | 2012                            | 500                             |
|                | 185                                                | 30                               | 4.5                                  | 2.0                              | 34.0                             | 0.0991                                         | 1,650                                            | 2374                            | 500                             |
|                | 240                                                | 34                               | 4.5                                  | 2.1                              | 36.5                             | 0.0754                                         | 1,500                                            | 2984                            | 500                             |
|                | 300                                                | 34                               | 4.5                                  | 2.1                              | 39.0                             | 0.0601                                         | 1,350                                            | 3602                            | 500                             |
|                | 400                                                | 53                               | 4.5                                  | 2.2                              | 41.5                             | 0.0470                                         | 1,200                                            | 4476                            | 500                             |
|                | 500                                                | 53                               | 4.5                                  | 2.3                              | 45.5                             | 0.0366                                         | 1,100                                            | 5611                            | 500                             |
|                | 630                                                | 53                               | 4.5                                  | 2.4                              | 49.0                             | 0.0283                                         | 950                                              | 7025                            | 500                             |
|                | 800                                                | 53                               | 4.5                                  | 2.6                              | 53.5                             | 0.0221                                         | 850                                              | 8672                            | 500                             |
|                | 1000                                               | 53                               | 4.5                                  | 2.7                              | 59.0                             | 0.0176                                         | 750                                              | 11150                           | 300                             |

## 8.7/15KV-CV

### 8.7/15(17.5)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 17,500 Volts |
| <b>Rated voltage</b>      | : 8,700 Volts between Line to Earth<br>: 15,000 Volts between Line to Line           |
| <b>AC Testing voltage</b> | : 30,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Continuous current rating in free air at 40°C maximum (A) |              |             | Current rating Direct burial at 30°C (A) |         | Current rating Underground duct at 30°C (A) |         |
|----------------|----------------------------------------------------|-----------------------------------------------------------|--------------|-------------|------------------------------------------|---------|---------------------------------------------|---------|
|                |                                                    | Spaced<br>                                                | Touching<br> | Trefoil<br> | Spaced                                   | Trefoil | Spaced                                      | Trefoil |
| 1              | 25                                                 | 177                                                       | 151          | 148         | 146                                      | 137     | 134                                         | 129     |
|                | 35                                                 | 215                                                       | 184          | 179         | 174                                      | 164     | 160                                         | 154     |
|                | 50                                                 | 258                                                       | 220          | 215         | 206                                      | 194     | 188                                         | 181     |
|                | 70                                                 | 322                                                       | 275          | 268         | 252                                      | 236     | 234                                         | 224     |
|                | 95                                                 | 394                                                       | 336          | 327         | 301                                      | 283     | 279                                         | 268     |
|                | 120                                                | 454                                                       | 388          | 377         | 343                                      | 321     | 317                                         | 303     |
|                | 150                                                | 517                                                       | 441          | 429         | 385                                      | 360     | 354                                         | 339     |
|                | 185                                                | 595                                                       | 508          | 494         | 435                                      | 406     | 400                                         | 382     |
|                | 240                                                | 705                                                       | 602          | 584         | 506                                      | 470     | 474                                         | 451     |
|                | 300                                                | 805                                                       | 688          | 667         | 572                                      | 529     | 534                                         | 508     |
|                | 400                                                | 935                                                       | 798          | 773         | 652                                      | 599     | 608                                         | 575     |
|                | 500                                                | 1093                                                      | 932          | 900         | 744                                      | 677     | 705                                         | 664     |
|                | 630                                                | 1272                                                      | 1081         | 1039        | 847                                      | 760     | 800                                         | 748     |
|                | 800                                                | 1460                                                      | 1235         | 1181        | 953                                      | 840     | 918                                         | 853     |
|                | 1000                                               | 1669                                                      | 1403         | 1331        | 1059                                     | 916     | 1016                                        | 932     |

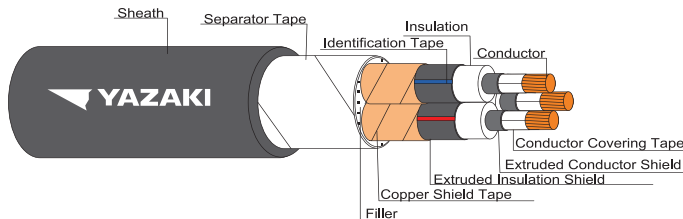
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance Z (Ω/km) |          |         |
|----------------|----------------------------------------------------|--------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                                    | Space                    | Touching | Trefoil | Space                | Touching | Trefoil | Space               | Touching | Trefoil | Space              | Touching | Trefoil |
| 1              | 25                                                 | 0.9271                   | 0.9271   | 0.9271  | 0.6511               | 0.5125   | 0.4663  | 0.2045              | 0.1610   | 0.1465  | 0.0494             | 0.9410   | 0.9386  |
|                | 35                                                 | 0.6683                   | 0.6683   | 0.6683  | 0.6316               | 0.4930   | 0.4467  | 0.1984              | 0.1549   | 0.1403  | 0.0971             | 0.6860   | 0.6829  |
|                | 50                                                 | 0.4936                   | 0.4937   | 0.4937  | 0.5986               | 0.4600   | 0.4138  | 0.1881              | 0.1445   | 0.1300  | 0.5282             | 0.5144   | 0.5105  |
|                | 70                                                 | 0.3420                   | 0.3421   | 0.3422  | 0.5773               | 0.4387   | 0.3925  | 0.1814              | 0.1378   | 0.1233  | 0.3871             | 0.3688   | 0.3637  |
|                | 95                                                 | 0.2465                   | 0.2466   | 0.2467  | 0.5569               | 0.4183   | 0.3721  | 0.1750              | 0.1314   | 0.1169  | 0.3023             | 0.2794   | 0.2730  |
|                | 120                                                | 0.1956                   | 0.1958   | 0.1957  | 0.5418               | 0.4032   | 0.3570  | 0.1702              | 0.1267   | 0.1122  | 0.2593             | 0.2332   | 0.2256  |
|                | 150                                                | 0.1587                   | 0.1588   | 0.1590  | 0.5307               | 0.3921   | 0.3459  | 0.1667              | 0.1232   | 0.1087  | 0.2302             | 0.2010   | 0.1926  |
|                | 185                                                | 0.1271                   | 0.1273   | 0.1275  | 0.5227               | 0.3841   | 0.3379  | 0.1642              | 0.1207   | 0.1062  | 0.2077             | 0.1754   | 0.1659  |
|                | 240                                                | 0.0972                   | 0.0974   | 0.0976  | 0.5097               | 0.3711   | 0.3249  | 0.1601              | 0.1166   | 0.1021  | 0.1873             | 0.1519   | 0.1412  |
|                | 300                                                | 0.0779                   | 0.0782   | 0.0785  | 0.4991               | 0.3604   | 0.3142  | 0.1568              | 0.1132   | 0.0987  | 0.1751             | 0.1376   | 0.1261  |
|                | 400                                                | 0.0616                   | 0.0620   | 0.0624  | 0.4895               | 0.3508   | 0.3046  | 0.1538              | 0.1102   | 0.0957  | 0.1657             | 0.1264   | 0.1142  |
|                | 500                                                | 0.0487                   | 0.0494   | 0.0500  | 0.4814               | 0.3427   | 0.2965  | 0.1512              | 0.1077   | 0.0931  | 0.1589             | 0.1185   | 0.1057  |
|                | 630                                                | 0.0386                   | 0.0396   | 0.0404  | 0.4721               | 0.3335   | 0.2872  | 0.1483              | 0.1048   | 0.0902  | 0.1533             | 0.1120   | 0.0989  |
|                | 800                                                | 0.0313                   | 0.0325   | 0.0335  | 0.4648               | 0.3262   | 0.2799  | 0.1480              | 0.1025   | 0.0879  | 0.1493             | 0.1075   | 0.0941  |
|                | 1000                                               | 0.0262                   | 0.0277   | 0.0289  | 0.4553               | 0.3167   | 0.2704  | 0.1430              | 0.0995   | 0.0849  | 0.1454             | 0.1033   | 0.0897  |

## 8.7/15KV-CV

### 8.7/15(17.5)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

- Conductor** : Compacted stranded annealed copper wire
- Conductor shield** : Semi-conductive Cross-linked polyethylene compound
- Insulation** : Cross-Linked polyethylene (XLPE)
- Insulation shield** : Semi-conductive Cross-linked polyethylene compound
- Core identification** : Color tape White, Red, Blue
- Shield** : Copper tape
- Filler** : Non-hygroscopic material
- Separator tape** : Non-hygroscopic tape
- sheath** : Black polyvinyl chloride (PVC/ST2)

#### TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 17,500 Volts
- Rated voltage** : 8,700 Volts between Line to Earth  
: 15,000 Volts between Line to Line
- AC Testing voltage** : 30,500 Volts
- Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MQ·km) | Maximum Current Rating |                              |                                 | Cable weight approx.<br>(kg/km) | Standard Length per drum<br>(m) |
|----------------|----------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|------------------------|------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                |                                                    |                                  |                                      |                                  |                                  |                                                |                                                  | In air at 40°C<br>(A)  | Direct burial at 30°C<br>(A) | Underground duct at 30°C<br>(A) |                                 |                                 |
| 3              | 25                                                 | 6                                | 4.5                                  | 2.4                              | 45.5                             | 0.727                                          | 3.300                                            | 142                    | 137                          | 112                             | 2136                            | 500                             |
|                | 35                                                 | 6                                | 4.5                                  | 2.5                              | 48.0                             | 0.524                                          | 3.000                                            | 173                    | 165                          | 134                             | 2531                            | 500                             |
|                | 50                                                 | 6                                | 4.5                                  | 2.6                              | 51.0                             | 0.387                                          | 2.700                                            | 208                    | 195                          | 159                             | 3026                            | 500                             |
|                | 70                                                 | 12                               | 4.5                                  | 2.7                              | 54.5                             | 0.268                                          | 2.400                                            | 258                    | 238                          | 194                             | 3795                            | 500                             |
|                | 95                                                 | 15                               | 4.5                                  | 2.8                              | 59.0                             | 0.193                                          | 2.100                                            | 314                    | 284                          | 232                             | 4744                            | 500                             |
|                | 120                                                | 18                               | 4.5                                  | 2.9                              | 62.5                             | 0.153                                          | 1.950                                            | 362                    | 323                          | 267                             | 5658                            | 500                             |
|                | 150                                                | 18                               | 4.5                                  | 3.1                              | 66.0                             | 0.124                                          | 1.800                                            | 409                    | 361                          | 299                             | 6665                            | 500                             |
|                | 185                                                | 30                               | 4.5                                  | 3.2                              | 70.5                             | 0.0991                                         | 1.650                                            | 468                    | 407                          | 337                             | 7909                            | 500                             |
|                | 240                                                | 34                               | 4.5                                  | 3.4                              | 76.0                             | 0.0754                                         | 1.500                                            | 551                    | 470                          | 393                             | 9883                            | 300                             |
|                | 300                                                | 34                               | 4.5                                  | 3.5                              | 81.0                             | 0.0601                                         | 1.350                                            | 629                    | 529                          | 443                             | 11893                           | 300                             |
|                | 400                                                | 53                               | 4.5                                  | 3.7                              | 87.0                             | 0.0470                                         | 1.200                                            | 722                    | 598                          | 505                             | 14605                           | 300                             |

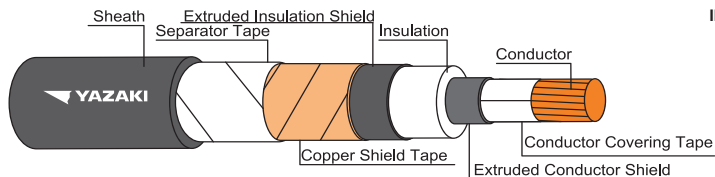
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|----------------|----------------------------------------------------|--------------------------------|----------------------------|---------------------------|--------------------------|
| 3              | 25                                                 | 0.9272                         | 0.4248                     | 0.1335                    | 0.9368                   |
|                | 35                                                 | 0.6684                         | 0.4057                     | 0.1275                    | 0.6804                   |
|                | 50                                                 | 0.4938                         | 0.3749                     | 0.1178                    | 0.5077                   |
|                | 70                                                 | 0.3421                         | 0.3546                     | 0.1114                    | 0.3598                   |
|                | 95                                                 | 0.2467                         | 0.3369                     | 0.1058                    | 0.2684                   |
|                | 120                                                | 0.1958                         | 0.3223                     | 0.1013                    | 0.2204                   |
|                | 150                                                | 0.1591                         | 0.3129                     | 0.0983                    | 0.1870                   |
|                | 185                                                | 0.1276                         | 0.3053                     | 0.0959                    | 0.1596                   |
|                | 240                                                | 0.0978                         | 0.2935                     | 0.0922                    | 0.1344                   |
|                | 300                                                | 0.0788                         | 0.2848                     | 0.0895                    | 0.1192                   |
|                | 400                                                | 0.0628                         | 0.2762                     | 0.0868                    | 0.1071                   |

## 12/20KV-CV

### 12/20(24)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 24,000 Volts |
| <b>Rated voltage</b>      | : 12,000 Volts between Line to Earth<br>: 20,000 Volts between Line to Line          |
| <b>AC Testing voltage</b> | : 42,000 volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

#### APPLICATION

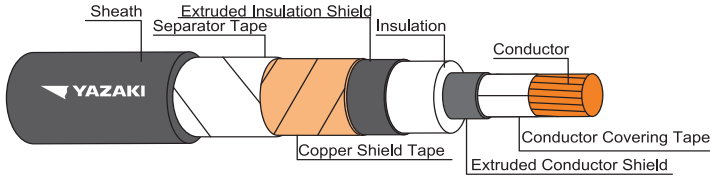
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area | Number of wires minimum | Insulation thickness nominal | Sheath thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Insulation resistance at 20°C minimum | Cable weight approx. | Standard Length per drum |
|----------------|------------------------------|-------------------------|------------------------------|--------------------------|--------------------------|--------------------------------------|---------------------------------------|----------------------|--------------------------|
|                | (mm <sup>2</sup> )           | (No.)                   | (mm)                         | (mm)                     | (mm)                     | (Ω/km)                               | (MΩ·km)                               | (kg/km)              | (m)                      |
| 1              | 35                           | 6                       | 5.5                          | 1.8                      | 26.0                     | 0.524                                | 3,460                                 | 849                  | 500                      |
|                | 50                           | 6                       | 5.5                          | 1.8                      | 27.0                     | 0.387                                | 3,130                                 | 1000                 | 500                      |
|                | 70                           | 12                      | 5.5                          | 1.8                      | 29.0                     | 0.268                                | 2,790                                 | 1236                 | 500                      |
|                | 95                           | 15                      | 5.5                          | 1.9                      | 31.0                     | 0.193                                | 2,500                                 | 1540                 | 500                      |
|                | 120                          | 18                      | 5.5                          | 2.0                      | 32.5                     | 0.153                                | 2,290                                 | 1835                 | 500                      |
|                | 150                          | 18                      | 5.5                          | 2.0                      | 34.0                     | 0.124                                | 2,130                                 | 2130                 | 500                      |
|                | 185                          | 30                      | 5.5                          | 2.1                      | 36.0                     | 0.0991                               | 1,970                                 | 2499                 | 500                      |
|                | 240                          | 34                      | 5.5                          | 2.1                      | 38.5                     | 0.0754                               | 1,770                                 | 3102                 | 500                      |
|                | 300                          | 34                      | 5.5                          | 2.2                      | 41.0                     | 0.0601                               | 1,620                                 | 3744                 | 500                      |
|                | 400                          | 53                      | 5.5                          | 2.3                      | 44.0                     | 0.0470                               | 1,480                                 | 4627                 | 500                      |
|                | 500                          | 53                      | 5.5                          | 2.4                      | 47.5                     | 0.0366                               | 1,320                                 | 5775                 | 500                      |
|                | 630                          | 53                      | 5.5                          | 2.5                      | 51.5                     | 0.0283                               | 1,190                                 | 7202                 | 500                      |
|                | 800                          | 53                      | 5.5                          | 2.6                      | 55.5                     | 0.0221                               | 1,070                                 | 8841                 | 500                      |
|                | 1000                         | 53                      | 5.5                          | 2.8                      | 61.0                     | 0.0176                               | 940                                   | 11361                | 300                      |

## 12/20KV-CV

### 12/20(24)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 24,000 Volts |
| <b>Rated voltage</b>      | : 12,000 Volts between Line to Earth<br>: 20,000 Volts between Line to Line          |
| <b>AC Testing voltage</b> | : 42,000 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | Continuous current rating in free air at 40°C maximum (A)                                   |                                                                                               |                                                                                              | Current rating Direct burial at 30°C (A) |         | Current rating Underground duct at 30°C (A) |         |
|----------------|-------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------|---------|---------------------------------------------|---------|
|                |                                                 | Spaced<br> | Touching<br> | Trefoil<br> | Spaced                                   | Trefoil | Spaced                                      | Trefoil |
| 1              | 35                                              | 210                                                                                         | 183                                                                                           | 179                                                                                          | 174                                      | 164     | 160                                         | 154     |
|                | 50                                              | 253                                                                                         | 219                                                                                           | 214                                                                                          | 206                                      | 194     | 192                                         | 184     |
|                | 70                                              | 315                                                                                         | 273                                                                                           | 266                                                                                          | 252                                      | 237     | 233                                         | 224     |
|                | 95                                              | 385                                                                                         | 333                                                                                           | 325                                                                                          | 302                                      | 283     | 279                                         | 267     |
|                | 120                                             | 445                                                                                         | 385                                                                                           | 375                                                                                          | 343                                      | 321     | 316                                         | 303     |
|                | 150                                             | 506                                                                                         | 438                                                                                           | 426                                                                                          | 385                                      | 360     | 354                                         | 338     |
|                | 185                                             | 581                                                                                         | 503                                                                                           | 490                                                                                          | 435                                      | 406     | 408                                         | 389     |
|                | 240                                             | 689                                                                                         | 595                                                                                           | 579                                                                                          | 506                                      | 470     | 473                                         | 450     |
|                | 300                                             | 792                                                                                         | 684                                                                                           | 665                                                                                          | 572                                      | 529     | 533                                         | 507     |
|                | 400                                             | 920                                                                                         | 794                                                                                           | 770                                                                                          | 653                                      | 600     | 618                                         | 585     |
|                | 500                                             | 1066                                                                                        | 920                                                                                           | 890                                                                                          | 744                                      | 678     | 703                                         | 662     |
|                | 630                                             | 1241                                                                                        | 1067                                                                                          | 1028                                                                                         | 848                                      | 762     | 816                                         | 764     |
|                | 800                                             | 1423                                                                                        | 1221                                                                                          | 1169                                                                                         | 954                                      | 844     | 916                                         | 851     |
|                | 1000                                            | 1628                                                                                        | 1385                                                                                          | 1318                                                                                         | 1060                                     | 920     | 1043                                        | 963     |

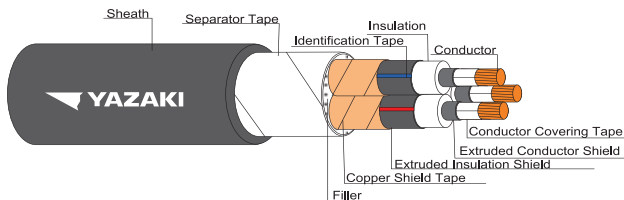
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance Z (Ω/km) |          |         |
|----------------|-------------------------------------------------|--------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                                 | Space                    | Touching | Trefoil | Space                | Touching | Trefoil | Space               | Touching | Trefoil | Space              | Touching | Trefoil |
| 1              | 35                                              | 0.6683                   | 0.6683   | 0.6683  | 0.6493               | 0.5107   | 0.4645  | 0.2040              | 0.1604   | 0.1459  | 0.6987             | 0.6873   | 0.6840  |
|                | 50                                              | 0.4936                   | 0.4937   | 0.4937  | 0.6155               | 0.4769   | 0.4307  | 0.1934              | 0.1498   | 0.1353  | 0.5301             | 0.5159   | 0.5119  |
|                | 70                                              | 0.3420                   | 0.3421   | 0.3420  | 0.5918               | 0.4531   | 0.4069  | 0.1859              | 0.1423   | 0.1278  | 0.3893             | 0.3705   | 0.3651  |
|                | 95                                              | 0.2465                   | 0.2466   | 0.2467  | 0.5718               | 0.4332   | 0.3870  | 0.1796              | 0.1361   | 0.1216  | 0.3050             | 0.2817   | 0.2750  |
|                | 120                                             | 0.1956                   | 0.1956   | 0.1957  | 0.5565               | 0.4179   | 0.3716  | 0.1748              | 0.1313   | 0.1167  | 0.2623             | 0.2356   | 0.2279  |
|                | 150                                             | 0.1587                   | 0.1588   | 0.1590  | 0.5448               | 0.4061   | 0.3599  | 0.1712              | 0.1276   | 0.1131  | 0.2334             | 0.2037   | 0.1951  |
|                | 185                                             | 0.1271                   | 0.1273   | 0.1275  | 0.5353               | 0.3967   | 0.3505  | 0.1682              | 0.1246   | 0.1101  | 0.2108             | 0.1781   | 0.1685  |
|                | 240                                             | 0.0972                   | 0.0974   | 0.0976  | 0.5204               | 0.3818   | 0.3355  | 0.1635              | 0.1199   | 0.1054  | 0.1902             | 0.1545   | 0.1436  |
|                | 300                                             | 0.0779                   | 0.0782   | 0.0785  | 0.5101               | 0.3715   | 0.3253  | 0.1603              | 0.1167   | 0.1022  | 0.1782             | 0.1405   | 0.1289  |
|                | 400                                             | 0.0614                   | 0.0620   | 0.0624  | 0.4998               | 0.3612   | 0.3150  | 0.1570              | 0.1135   | 0.0990  | 0.1686             | 0.1293   | 0.1170  |
|                | 500                                             | 0.0487                   | 0.0494   | 0.0498  | 0.4908               | 0.3522   | 0.3060  | 0.1542              | 0.1106   | 0.0961  | 0.1617             | 0.1212   | 0.1083  |
|                | 630                                             | 0.0386                   | 0.0396   | 0.0402  | 0.4909               | 0.3422   | 0.2960  | 0.1542              | 0.1075   | 0.0930  | 0.1590             | 0.1146   | 0.1013  |
|                | 800                                             | 0.0313                   | 0.0325   | 0.0333  | 0.4722               | 0.3335   | 0.2873  | 0.1483              | 0.1048   | 0.0903  | 0.1516             | 0.1097   | 0.0962  |
|                | 1000                                            | 0.0262                   | 0.0277   | 0.0287  | 0.4626               | 0.3240   | 0.2778  | 0.1453              | 0.1018   | 0.0873  | 0.1477             | 0.1055   | 0.0919  |

## 12/20KV-CV

### 12/20(24)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



#### CABLE STRUCTURE

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>    | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b>   | : Semi-conductive Cross-linked polyethylene compound |
| <b>Core identification</b> | : Color tape White, Red, Blue                        |
| <b>Shield</b>              | : Copper tape                                        |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Separator tape</b>      | : Non-hygroscopic tape                               |
| <b>Sheath</b>              | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 24,000 Volts |
| <b>Rated voltage</b>      | : 12,000 Volts between Line to Earth<br>: 20,000 Volts between Line to Line          |
| <b>AC Testing voltage</b> | : 42,000 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

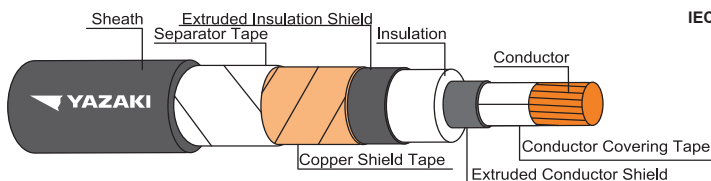
| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Maximum Current Rating |                              |                                 | Cable weight approx.<br>(kg/km) | Standard Length per drum<br>(m) |
|----------------|----------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|------------------------|------------------------------|---------------------------------|---------------------------------|---------------------------------|
|                |                                                    |                                  |                                      |                                  |                                  |                                                |                                                  | In air at 40°C<br>(A)  | Direct burial at 30°C<br>(A) | Underground duct at 30°C<br>(A) |                                 |                                 |
| 3              | 35                                                 | 6                                | 5.5                                  | 2.7                              | 52.5                             | 0.524                                          | 3,460                                            | 169                    | 161                          | 136                             | 2865                            | 500                             |
|                | 50                                                 | 6                                | 5.5                                  | 2.8                              | 56.0                             | 0.387                                          | 3,130                                            | 204                    | 191                          | 160                             | 3382                            | 500                             |
|                | 70                                                 | 12                               | 5.5                                  | 2.9                              | 59.5                             | 0.268                                          | 2,790                                            | 254                    | 234                          | 195                             | 4178                            | 500                             |
|                | 95                                                 | 15                               | 5.5                                  | 3.0                              | 64.0                             | 0.193                                          | 2,500                                            | 311                    | 281                          | 236                             | 5167                            | 500                             |
|                | 120                                                | 18                               | 5.5                                  | 3.1                              | 67.5                             | 0.153                                          | 2,290                                            | 358                    | 319                          | 268                             | 6109                            | 500                             |
|                | 150                                                | 18                               | 5.5                                  | 3.2                              | 70.5                             | 0.124                                          | 2,130                                            | 405                    | 358                          | 300                             | 7093                            | 300                             |
|                | 185                                                | 30                               | 5.5                                  | 3.3                              | 75.0                             | 0.0991                                         | 1,970                                            | 463                    | 404                          | 342                             | 8376                            | 300                             |
|                | 240                                                | 34                               | 5.5                                  | 3.5                              | 80.5                             | 0.0754                                         | 1,770                                            | 546                    | 468                          | 395                             | 10379                           | 300                             |
|                | 300                                                | 34                               | 5.5                                  | 3.7                              | 86.0                             | 0.0601                                         | 1,620                                            | 622                    | 526                          | 448                             | 12449                           | 300                             |
|                | 400                                                | 53                               | 5.5                                  | 3.9                              | 92.0                             | 0.0470                                         | 1,480                                            | 715                    | 595                          | 506                             | 15203                           | 200                             |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|----------------|----------------------------------------------------|--------------------------------|----------------------------|---------------------------|--------------------------|
|                |                                                    |                                |                            |                           |                          |
| 3              | 35                                                 | 0.6684                         | 0.4254                     | 0.1336                    | 0.6816                   |
|                | 50                                                 | 0.4938                         | 0.3935                     | 0.1236                    | 0.5090                   |
|                | 70                                                 | 0.3421                         | 0.3720                     | 0.1169                    | 0.3615                   |
|                | 95                                                 | 0.2467                         | 0.3530                     | 0.1109                    | 0.2705                   |
|                | 120                                                | 0.1958                         | 0.3375                     | 0.1060                    | 0.2227                   |
|                | 150                                                | 0.1591                         | 0.3273                     | 0.1028                    | 0.1894                   |
|                | 185                                                | 0.1276                         | 0.3187                     | 0.1001                    | 0.1622                   |
|                | 240                                                | 0.0978                         | 0.3059                     | 0.0961                    | 0.1371                   |
|                | 300                                                | 0.0788                         | 0.2964                     | 0.0931                    | 0.1220                   |
|                | 400                                                | 0.0628                         | 0.2870                     | 0.0902                    | 0.1099                   |

## 18/30KV-CV

18/30(36)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE



IEC 60502-2

### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 36,000 Volts |
| <b>Rated voltage</b>      | : 18,000 Volts between Line to Earth<br>: 30,000 Volts between Line to Line          |
| <b>AC Testing voltage</b> | : 63,000 volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

### APPLICATION

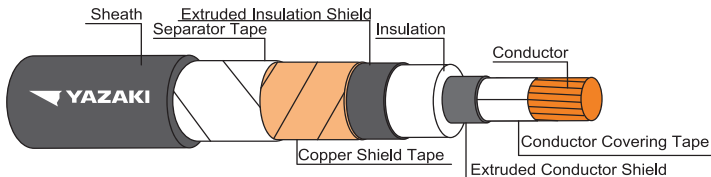
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Cable weight approx.<br>(kg/km) | Standard length per drum<br>(m) |
|-----------------|----------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|---------------------------------|
| 1               | 50                                                 | 6                                | 8.0                                  | 2.0                              | 32.5                             | 0.387                                          | 4,010                                            | 1264                            | 500                             |
|                 | 70                                                 | 12                               | 8.0                                  | 2.0                              | 34.5                             | 0.268                                          | 3,620                                            | 1513                            | 500                             |
|                 | 95                                                 | 15                               | 8.0                                  | 2.1                              | 36.5                             | 0.193                                          | 3,260                                            | 1834                            | 500                             |
|                 | 120                                                | 18                               | 8.0                                  | 2.1                              | 38.0                             | 0.153                                          | 3,020                                            | 2128                            | 500                             |
|                 | 150                                                | 18                               | 8.0                                  | 2.2                              | 39.5                             | 0.124                                          | 2,820                                            | 2450                            | 500                             |
|                 | 185                                                | 30                               | 8.0                                  | 2.2                              | 41.5                             | 0.0991                                         | 2,620                                            | 2820                            | 500                             |
|                 | 240                                                | 34                               | 8.0                                  | 2.3                              | 44.0                             | 0.0754                                         | 2,370                                            | 3460                            | 500                             |
|                 | 300                                                | 34                               | 8.0                                  | 2.4                              | 46.5                             | 0.0601                                         | 2,190                                            | 4122                            | 500                             |
|                 | 400                                                | 53                               | 8.0                                  | 2.5                              | 49.0                             | 0.0470                                         | 2,000                                            | 5029                            | 500                             |
|                 | 500                                                | 53                               | 8.0                                  | 2.6                              | 53.0                             | 0.0366                                         | 1,800                                            | 6208                            | 500                             |
|                 | 630                                                | 53                               | 8.0                                  | 2.7                              | 57.0                             | 0.0283                                         | 1,630                                            | 7667                            | 500                             |
|                 | 800                                                | 53                               | 8.0                                  | 2.8                              | 61.0                             | 0.0221                                         | 1,480                                            | 9338                            | 300                             |
|                 | 1000                                               | 53                               | 8.0                                  | 3.0                              | 67.0                             | 0.0176                                         | 1,300                                            | 11922                           | 300                             |

## 18/30KV-CV

18/30(36)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE

IEC 60502-2



### CABLE STRUCTURE

|                          |                                                      |
|--------------------------|------------------------------------------------------|
| <b>Conductor</b>         | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>  | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>        | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b> | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>  | : Natural (Translucent)                              |
| <b>Shield</b>            | : Copper tape                                        |
| <b>Separator tape</b>    | : Non-hygroscopic tape                               |
| <b>Sheath</b>            | : Black polyvinyl chloride (PVC/ST2)                 |

### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 36,000 Volts |
| <b>Rated voltage</b>      | : 18,000 Volts between Line to Earth<br>: 30,000 Volts between Line to Line          |
| <b>AC Testing voltage</b> | : 63,000 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

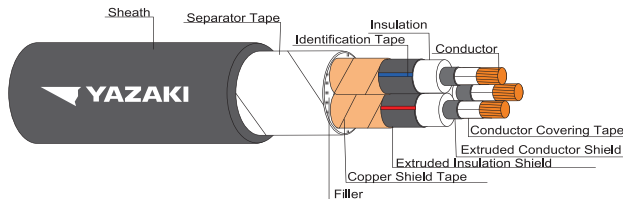
| Number of core | Nominal cross sectional area (mm²) | Continuous current rating in free air at 40°C maximum (A) |          |         | Current rating Direct burial at 30°C (A) |         | Current rating Underground duct at 30°C (A) |         |
|----------------|------------------------------------|-----------------------------------------------------------|----------|---------|------------------------------------------|---------|---------------------------------------------|---------|
|                |                                    | Spaced                                                    | Touching | Trefoil | Spaced                                   | Trefoil | Spaced                                      | Trefoil |
| 1              | 50                                 | 256                                                       | 226      | 221     | 206                                      | 194     | 191                                         | 183     |
|                | 70                                 | 319                                                       | 281      | 275     | 252                                      | 237     | 237                                         | 228     |
|                | 95                                 | 390                                                       | 343      | 335     | 302                                      | 283     | 284                                         | 271     |
|                | 120                                | 450                                                       | 395      | 385     | 343                                      | 322     | 322                                         | 308     |
|                | 150                                | 510                                                       | 448      | 437     | 385                                      | 360     | 360                                         | 344     |
|                | 185                                | 586                                                       | 514      | 501     | 390                                      | 364     | 364                                         | 347     |
|                | 240                                | 693                                                       | 607      | 591     | 506                                      | 471     | 479                                         | 456     |
|                | 300                                | 796                                                       | 696      | 678     | 572                                      | 530     | 541                                         | 513     |
|                | 400                                | 923                                                       | 807      | 784     | 652                                      | 602     | 615                                         | 582     |
|                | 500                                | 1076                                                      | 939      | 910     | 745                                      | 681     | 714                                         | 672     |
|                | 630                                | 1251                                                      | 1088     | 1051    | 849                                      | 767     | 811                                         | 759     |
|                | 800                                | 1437                                                      | 1243     | 1195    | 955                                      | 851     | 935                                         | 871     |
|                | 1000                               | 1640                                                      | 1411     | 1348    | 1062                                     | 930     | 1036                                        | 956     |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area (mm²) | A.C. Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance Z (Ω/km) |          |         |
|----------------|------------------------------------|--------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                    | Space                    | Touching | Trefoil | Space                | Touching | Trefoil | Space               | Touching | Trefoil | Space              | Touching | Trefoil |
| 1              | 50                                 | 0.4936                   | 0.4937   | 0.4937  | 0.6525               | 0.5139   | 0.4676  | 0.2050              | 0.1614   | 0.1469  | 0.5345             | 0.5194   | 0.5151  |
|                | 70                                 | 0.3420                   | 0.3421   | 0.3420  | 0.6268               | 0.4882   | 0.4420  | 0.1969              | 0.1534   | 0.1389  | 0.3946             | 0.3749   | 0.3691  |
|                | 95                                 | 0.2465                   | 0.2466   | 0.2465  | 0.6048               | 0.4661   | 0.4199  | 0.1900              | 0.1464   | 0.1319  | 0.3112             | 0.2868   | 0.2796  |
|                | 120                                | 0.1956                   | 0.1956   | 0.1957  | 0.5862               | 0.4475   | 0.4013  | 0.1842              | 0.1406   | 0.1261  | 0.2687             | 0.2409   | 0.2328  |
|                | 150                                | 0.1587                   | 0.1588   | 0.1588  | 0.5743               | 0.4357   | 0.3895  | 0.1804              | 0.1369   | 0.1224  | 0.2403             | 0.2097   | 0.2005  |
|                | 185                                | 0.1271                   | 0.1273   | 0.1273  | 0.5622               | 0.4236   | 0.3774  | 0.1766              | 0.1331   | 0.1186  | 0.2176             | 0.1842   | 0.1740  |
|                | 240                                | 0.0972                   | 0.0974   | 0.0974  | 0.5466               | 0.4080   | 0.3618  | 0.1717              | 0.1282   | 0.1137  | 0.1973             | 0.1610   | 0.1497  |
|                | 300                                | 0.0779                   | 0.0782   | 0.0783  | 0.5349               | 0.3963   | 0.3501  | 0.1680              | 0.1245   | 0.1100  | 0.1852             | 0.1470   | 0.1350  |
|                | 400                                | 0.0614                   | 0.0618   | 0.0621  | 0.5231               | 0.3845   | 0.3383  | 0.1643              | 0.1208   | 0.1063  | 0.1754             | 0.1357   | 0.1231  |
|                | 500                                | 0.0487                   | 0.0491   | 0.0491  | 0.5124               | 0.3738   | 0.3275  | 0.1610              | 0.1174   | 0.1029  | 0.1682             | 0.1273   | 0.1140  |
|                | 630                                | 0.0386                   | 0.0392   | 0.0398  | 0.5009               | 0.3622   | 0.3160  | 0.1574              | 0.1138   | 0.0993  | 0.1620             | 0.1204   | 0.1070  |
|                | 800                                | 0.0313                   | 0.0321   | 0.0329  | 0.4908               | 0.3522   | 0.3059  | 0.1542              | 0.1106   | 0.0961  | 0.1573             | 0.1152   | 0.1016  |
|                | 1000                               | 0.0262                   | 0.0272   | 0.0282  | 0.4802               | 0.3415   | 0.2953  | 0.1509              | 0.1073   | 0.0928  | 0.1531             | 0.1107   | 0.0970  |

## 18/30KV-CV

### 18/30(36)kV 90°C CROSS-LINKED POLYETHYLENE INSULATED AND PVC SHEATHED POWER CABLE



IEC 60502-2

#### CABLE STRUCTURE

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded annealed copper wire            |
| <b>Conductor shield</b>    | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b>   | : Semi-conductive Cross-linked polyethylene compound |
| <b>Core identification</b> | : Color tape White, Red, Blue                        |
| <b>Shield</b>              | : Copper tape                                        |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Separator tape</b>      | : Non-hygroscopic tape                               |
| <b>sheath</b>              | : Black polyvinyl chloride (PVC/ST2)                 |

#### TECHNICAL DATA

|                           |                                                                                      |
|---------------------------|--------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 36,000 Volts |
| <b>Rated voltage</b>      | : 18,000 Volts between Line to Earth<br>: 30,000 Volts between Line to Line          |
| <b>AC Testing voltage</b> | : 63,000 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-2, IEC 60228, IEC 60332-1                                                |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Maximum Current Rating |                              |                                  | Cable weight approx.<br>(kg/km) | Standard Length per drum<br>(m) |
|----------------|----------------------------------------------------|----------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|------------------------|------------------------------|----------------------------------|---------------------------------|---------------------------------|
|                |                                                    |                                  |                                      |                                  |                                  |                                                |                                                  | In air at 40°C<br>(A)  | Direct burial at 30°C<br>(A) | Under-ground duct at 30°C<br>(A) |                                 |                                 |
| 3              | 50                                                 | 6                                | 8.0                                  | 3.2                              | 67.5                             | 0.387                                          | 4,010                                            | 205                    | 190                          | 164                              | 4418                            | 500                             |
|                | 70                                                 | 12                               | 8.0                                  | 3.3                              | 71.5                             | 0.268                                          | 3,620                                            | 262                    | 236                          | 199                              | 5270                            | 300                             |
|                | 95                                                 | 15                               | 8.0                                  | 3.4                              | 75.5                             | 0.193                                          | 3,260                                            | 320                    | 284                          | 240                              | 6308                            | 300                             |
|                | 120                                                | 18                               | 8.0                                  | 3.5                              | 79.0                             | 0.153                                          | 3,020                                            | 368                    | 323                          | 273                              | 7313                            | 300                             |
|                | 150                                                | 18                               | 8.0                                  | 3.6                              | 82.0                             | 0.124                                          | 2,820                                            | 417                    | 362                          | 305                              | 8338                            | 300                             |
|                | 185                                                | 30                               | 8.0                                  | 3.7                              | 86.5                             | 0.0991                                         | 2,620                                            | 477                    | 409                          | 347                              | 9691                            | 300                             |
|                | 240                                                | 34                               | 8.0                                  | 3.9                              | 92.5                             | 0.0754                                         | 2,370                                            | 561                    | 473                          | 401                              | 11798                           | 200                             |
|                | 300                                                | 34                               | 8.0                                  | 4.0                              | 97.5                             | 0.0601                                         | 2,190                                            | 640                    | 533                          | 455                              | 13923                           | 200                             |

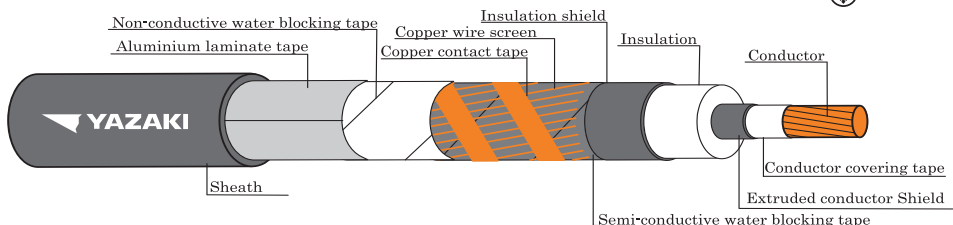
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|----------------|----------------------------------------------------|--------------------------------|----------------------------|---------------------------|--------------------------|
|                |                                                    | R                              | L                          | XL                        | Z                        |
| 3              | 50                                                 | 0.4938                         | 0.4336                     | 0.1362                    | 0.5122                   |
|                | 70                                                 | 0.3421                         | 0.4097                     | 0.1287                    | 0.3655                   |
|                | 95                                                 | 0.2467                         | 0.3883                     | 0.1220                    | 0.2752                   |
|                | 120                                                | 0.1958                         | 0.3710                     | 0.1166                    | 0.2279                   |
|                | 150                                                | 0.1589                         | 0.3593                     | 0.1129                    | 0.1949                   |
|                | 185                                                | 0.1274                         | 0.3488                     | 0.1096                    | 0.1680                   |
|                | 240                                                | 0.0976                         | 0.3340                     | 0.1049                    | 0.1433                   |
|                | 300                                                | 0.0785                         | 0.3228                     | 0.1014                    | 0.1282                   |
|                | 400                                                | 0.0624                         | 0.3117                     | 0.0979                    | 0.1161                   |

## 69KV-CE-CWS

### 69kV 90°C CROSS-LINKED POLYETHYLENE INSULATED WITH COPPER WIRE SCREEN AND POLYETHYLENE SHEATHED POWER CABLE

TIS 2202-2547



#### CABLE STRUCTURE

|                                                     |                                                      |
|-----------------------------------------------------|------------------------------------------------------|
| <b>Conductor</b>                                    | : Compacted stranded annealed copper wire            |
| <b>Tape on Conductor</b>                            | : Semi-Conductive tape                               |
| <b>Conductor shield</b>                             | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation</b>                                   | : Cross-Linked polyethylene (XLPE)                   |
| <b>Insulation shield</b>                            | : Semi-conductive Cross-linked polyethylene compound |
| <b>Insulation color</b>                             | : Natural (Translucent)                              |
| <b>Water blocking tape</b>                          | : Non-conductive water blocking tape                 |
| <b>Metallic screen</b>                              | : Copper wire screen with copper contact tape        |
| <b>Synthetic water blocking and cushioning tape</b> | : Non-conductive water blocking tape                 |
| <b>Radial water barrier</b>                         | : Aluminium laminate tape                            |
| <b>Sheath</b>                                       | : Black polyethylene (PE/ST7)                        |

#### TECHNICAL DATA

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C        |
| <b>AC Testing voltage</b> | : 90,000 Volts                              |
| <b>Reference standard</b> | : TIS 2202-2547, TIS 2427-2552<br>IEC 60228 |

#### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Conductor diameter approx.<br>(mm) | Conductor shield thickness nominal<br>(mm) | Insulation thickness nominal<br>(mm) | Insulation shield thickness nominal<br>(mm) | Copper wire area nominal<br>(mm <sup>2</sup> ) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Cable weight approx.<br>(kg/km) | Standard Length per drum<br>(m) |
|----------------|----------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------|--------------------------------------|---------------------------------------------|------------------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|---------------------------------|---------------------------------|
| 1              | 400/95                                             | 53                               | 23.5                               | 1.5                                        | 11.0                                 | 1.5                                         | 95                                             | 3.5                              | 67.5                             | 0.0470                                         | 7000                            | 500                             |
|                | 500/95                                             | 53                               | 26.7                               | 1.5                                        | 11.0                                 | 1.5                                         | 95                                             | 3.5                              | 71.0                             | 0.0366                                         | 8200                            | 500                             |
|                | 630/95                                             | 53                               | 30.3                               | 1.5                                        | 11.0                                 | 1.5                                         | 95                                             | 3.5                              | 74.5                             | 0.0283                                         | 10000                           | 500                             |
|                | 800/95                                             | 53                               | 34.1                               | 1.5                                        | 11.0                                 | 1.5                                         | 95                                             | 3.5                              | 78.5                             | 0.0221                                         | 11500                           | 500                             |
|                | 800/120                                            | 53                               | 34.1                               | 1.5                                        | 11.0                                 | 1.5                                         | 120                                            | 3.5                              | 78.5                             | 0.0221                                         | 11500                           | 500                             |

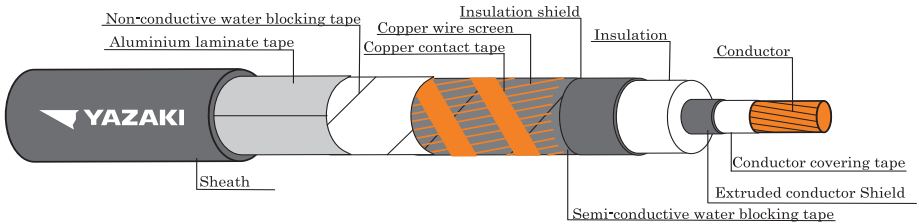
| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Current rating Direct burial at 30°C<br>(A) |         | Current rating Underground duct at 30°C<br>(A) |         | A.C. Resistance<br>R (Ω/km) |         | Inductance<br>L (mH/km) |         | Reactance<br>XL (Ω/km) |         | Impedance<br>Z (Ω/km) |         |
|----------------|----------------------------------------------------|---------------------------------------------|---------|------------------------------------------------|---------|-----------------------------|---------|-------------------------|---------|------------------------|---------|-----------------------|---------|
|                |                                                    |                                             |         |                                                |         |                             |         |                         |         |                        |         |                       |         |
|                |                                                    | Space                                       | Trefoil | Space                                          | Trefoil | Space                       | Trefoil | Space                   | Trefoil | Space                  | Trefoil | Space                 | Trefoil |
| 1              | 400/95                                             | 873                                         | 611     | 644                                            | 607     | 0.0613                      | 0.0617  | 0.5835                  | 0.3987  | 0.1833                 | 0.1253  | 0.1933                | 0.1396  |
|                | 500/95                                             | 1001                                        | 695     | 732                                            | 688     | 0.0485                      | 0.0490  | 0.5679                  | 0.3831  | 0.1784                 | 0.1204  | 0.1849                | 0.1299  |
|                | 630/95                                             | 1145                                        | 788     | 832                                            | 778     | 0.0384                      | 0.0392  | 0.5543                  | 0.3694  | 0.1741                 | 0.1161  | 0.1783                | 0.1225  |
|                | 800/95                                             | 1295                                        | 881     | 951                                            | 885     | 0.0311                      | 0.0321  | 0.5411                  | 0.3563  | 0.1700                 | 0.1119  | 0.1728                | 0.1164  |
|                | 800/120                                            | 1295                                        | 881     | 951                                            | 885     | 0.0311                      | 0.0321  | 0.5411                  | 0.3563  | 0.1700                 | 0.1119  | 0.1728                | 0.1164  |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

# 115KV-CE-CWS

## 115kV 90°C CROSS-LINKED POLYETHYLENE INSULATED WITH COPPER WIRE SCREEN AND POLYETHYLENE SHEATHED POWER CABLE

TIS 2202-2547



### CABLE STRUCTURE

|                                                     |                                                           |
|-----------------------------------------------------|-----------------------------------------------------------|
| <b>Conductor</b>                                    | : Compacted stranded annealed copper wire                 |
| <b>Tape on Conductor</b>                            | : Semi-Conductive tape                                    |
| <b>Conductor shield</b>                             | : Semi-conductive Cross-linked polyethylene compound      |
| <b>Insulation</b>                                   | : Cross-Linked polyethylene (XLPE)                        |
| <b>Insulation shield</b>                            | : Semi-conductive tape Cross-linked polyethylene compound |
| <b>Insulation color</b>                             | : Natural (Translucent)                                   |
| <b>Water blocking tape</b>                          | : Semi-conductive water blocking tape                     |
| <b>Metallic screen</b>                              | : Copper wire screen with copper contact tape             |
| <b>Synthetic water blocking and cushioning tape</b> | : Non-conductive water blocking tape                      |
| <b>Radial water barrier</b>                         | : Aluminium laminate tape                                 |
| <b>Sheath</b>                                       | : Black polyethylene (PE/ST7)                             |

### TECHNICAL DATA

|                           |                                             |
|---------------------------|---------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C        |
| <b>AC Testing voltage</b> | : 160,000 Volts                             |
| <b>Reference standard</b> | : TIS 2202-2547, TIS 2427-2552<br>IEC 60228 |

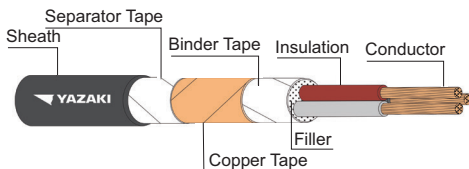
### APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wires minimum<br>(No.) | Conductor diameter approx.<br>(mm) | Conductor shield thickness nominal<br>(mm) | Insulation thickness nominal<br>(mm) | Insulation shield thickness nominal<br>(mm) | Copper wire area nominal<br>(mm <sup>2</sup> ) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Cable weight approx.<br>(kg/km) | Standard Length per drum<br>(m) |
|----------------|----------------------------------------------------|----------------------------------|------------------------------------|--------------------------------------------|--------------------------------------|---------------------------------------------|------------------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|---------------------------------|---------------------------------|
| 1              | 400/95                                             | 53                               | 23.5                               | 1.5                                        | 16.0                                 | 1.5                                         | 95                                             | 3.5                              | 77.0                             | 0.0470                                         | 8000                            | 500                             |
|                | 500/95                                             | 53                               | 26.7                               | 1.5                                        | 16.0                                 | 1.5                                         | 95                                             | 3.6                              | 80.5                             | 0.0366                                         | 9000                            | 500                             |
|                | 630/95                                             | 53                               | 30.3                               | 1.5                                        | 16.0                                 | 1.5                                         | 95                                             | 3.6                              | 84.0                             | 0.0283                                         | 11000                           | 500                             |
|                | 800/95                                             | 53                               | 34.1                               | 1.5                                        | 16.0                                 | 1.5                                         | 95                                             | 3.7                              | 87.5                             | 0.0221                                         | 12500                           | 500                             |
|                | 800/120                                            | 53                               | 34.1                               | 1.5                                        | 16.0                                 | 1.5                                         | 120                                            | 3.7                              | 87.5                             | 0.0221                                         | 12600                           | 500                             |

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Current rating Direct burial at 30°C<br>(A) |         | Current rating Underground duct at 30°C<br>(A) |         | A.C. Resistance<br>R (Ω/km) |         | Inductance<br>L (mH/km) |         | Reactance<br>XL (Ω/km) |         | Impedance<br>Z (Ω/km) |         |
|----------------|----------------------------------------------------|---------------------------------------------|---------|------------------------------------------------|---------|-----------------------------|---------|-------------------------|---------|------------------------|---------|-----------------------|---------|
|                |                                                    | Space                                       | Trefoil | Space                                          | Trefoil | Space                       | Trefoil | Space                   | Trefoil | Space                  | Trefoil | Space                 | Trefoil |
| 1              | 400/95                                             | 850                                         | 607     | 646                                            | 608     | 0.0613                      | 0.0617  | 0.6128                  | 0.4279  | 0.1925                 | 0.1344  | 0.2020                | 0.1479  |
|                | 500/95                                             | 975                                         | 691     | 735                                            | 690     | 0.0485                      | 0.0490  | 0.5958                  | 0.4110  | 0.1872                 | 0.1291  | 0.1934                | 0.1381  |
|                | 630/95                                             | 1117                                        | 785     | 848                                            | 793     | 0.0384                      | 0.0390  | 0.5805                  | 0.3956  | 0.1824                 | 0.1243  | 0.1864                | 0.1303  |
|                | 800/95                                             | 1264                                        | 879     | 954                                            | 887     | 0.0311                      | 0.0318  | 0.5665                  | 0.3817  | 0.1780                 | 0.1199  | 0.1807                | 0.1241  |
|                | 800/120                                            | 1264                                        | 879     | 954                                            | 887     | 0.0311                      | 0.0318  | 0.5665                  | 0.3817  | 0.1780                 | 0.1199  | 0.1807                | 0.1241  |

**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m  
Shield bonded at single point

**600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH CONTROL CABLE**

**CABLE STRUCTURE**

**Conductor** : Flexible annealed copper

**Insulation** : Polyvinyl chloride (PVC)

**Core identification** **2 Cores** : Blue and Brown  
**3 Cores** : Brown, Black, Grey  
**4 Cores** : Blue, Brown, Black, Grey  
**More than 4 Cores** :  
 Black with marking numbers, colored white, printed continuously throughout the whole length of insulated wires for the purpose of core identification.

**Filler** : Non-hygroscopic material

**Binder tape and Separator tape** : Non-hygroscopic tape

**Sheath** : Black polyvinyl chloride (PVC)

**TECHNICAL DATA**

**Classification** : Maximum conductor temperature 70°C  
 : Circuit voltage no exceeding 600 Volts

**AC Testing voltage** : 2,000 Volts

**Reference standard** : THAI YAZAKI STANDARD

**APPLICATION**

For supervisory electrical equipment, station control circuits, outdoor, suitable installation in the dry or wet cable trenches.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 2              | 0.5                                                | Flexible       | 0.6                                  | 0.9                              | 7.5                              | 39.0                                           | 0.0130                                           | 50                              | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 8.5                              | 26.0                                           | 0.0114                                           | 68                              | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 9.0                              | 19.5                                           | 0.0104                                           | 78                              | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 9.5                              | 13.3                                           | 0.0089                                           | 89                              | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.2                              | 10.5                             | 7.98                                           | 0.0081                                           | 126                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.2                              | 12.5                             | 4.95                                           | 0.0076                                           | 179                             | 300/D                  |
| 3              | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 14.5                             | 3.30                                           | 0.0061                                           | 255                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 8.5                              | 39.0                                           | 0.0130                                           | 70                              | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 9.0                              | 26.0                                           | 0.0114                                           | 81                              | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 9.0                              | 19.5                                           | 0.0104                                           | 92                              | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.0                             | 13.3                                           | 0.0089                                           | 108                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.2                              | 11.0                             | 7.98                                           | 0.0081                                           | 155                             | 300/D                  |
| 4              | 4                                                  | Flexible       | 0.8                                  | 1.2                              | 13.0                             | 4.95                                           | 0.0076                                           | 228                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 15.0                             | 3.30                                           | 0.0061                                           | 329                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 9.0                              | 39.0                                           | 0.0130                                           | 79                              | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 9.5                              | 26.0                                           | 0.0114                                           | 93                              | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 10.0                             | 19.5                                           | 0.0104                                           | 113                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 13.3                                           | 0.0089                                           | 133                             | 300/D                  |
| 5              | 2.5                                                | Flexible       | 0.7                                  | 1.2                              | 12.0                             | 7.98                                           | 0.0081                                           | 191                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 14.5                             | 4.95                                           | 0.0076                                           | 295                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 16.5                             | 3.30                                           | 0.0061                                           | 418                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.0                             | 39.0                                           | 0.0130                                           | 93                              | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 26.0                                           | 0.0114                                           | 112                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 19.5                                           | 0.0104                                           | 130                             | 300/D                  |
| 5              | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 11.5                             | 13.3                                           | 0.0089                                           | 160                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.2                              | 13.0                             | 7.98                                           | 0.0081                                           | 232                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 16.0                             | 4.95                                           | 0.0076                                           | 360                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 18.0                             | 3.30                                           | 0.0061                                           | 507                             | 300/D                  |

D = Packing in drum

**600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE**

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 6              | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 39.0                                           | 0.0130                                           | 108                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 11                               | 26.0                                           | 0.0114                                           | 130                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 11.5                             | 19.5                                           | 0.0104                                           | 152                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 12.5                             | 13.3                                           | 0.0089                                           | 182                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 14.5                             | 7.98                                           | 0.0081                                           | 287                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 17                               | 4.95                                           | 0.0076                                           | 427                             | 300/D                  |
| 7              | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 19.5                             | 3.30                                           | 0.0061                                           | 605                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 39.0                                           | 0.0130                                           | 115                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 11                               | 26.0                                           | 0.0114                                           | 139                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 11.5                             | 19.5                                           | 0.0104                                           | 164                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 12.5                             | 13.3                                           | 0.0089                                           | 197                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 14.5                             | 7.98                                           | 0.0081                                           | 312                             | 300/D                  |
| 8              | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 17                               | 4.95                                           | 0.0076                                           | 467                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 19.5                             | 3.30                                           | 0.0061                                           | 665                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 11.5                             | 39.0                                           | 0.0130                                           | 132                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 12                               | 26.0                                           | 0.0114                                           | 161                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 12.5                             | 19.5                                           | 0.0104                                           | 191                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 13.3                                           | 0.0089                                           | 229                             | 300/D                  |
| 9              | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 15.5                             | 7.98                                           | 0.0081                                           | 363                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 18.5                             | 4.95                                           | 0.0076                                           | 544                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 21                               | 3.30                                           | 0.0061                                           | 767                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 12                               | 39.0                                           | 0.0130                                           | 144                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 13                               | 26.0                                           | 0.0114                                           | 174                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 13                               | 19.5                                           | 0.0104                                           | 207                             | 300/D                  |
| 10             | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 13.3                                           | 0.0089                                           | 262                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 17                               | 7.98                                           | 0.0081                                           | 408                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 20                               | 4.95                                           | 0.0076                                           | 608                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 23                               | 3.30                                           | 0.0061                                           | 871                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 13                               | 39.0                                           | 0.0130                                           | 158                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 26.0                                           | 0.0114                                           | 201                             | 300/D                  |
| 11             | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 19.5                                           | 0.0104                                           | 249                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 13.3                                           | 0.0089                                           | 299                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 18                               | 7.98                                           | 0.0081                                           | 451                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 21.5                             | 4.95                                           | 0.0076                                           | 673                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.8                              | 25.5                             | 3.30                                           | 0.0061                                           | 1017                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 13                               | 39.0                                           | 0.0130                                           | 167                             | 300/D                  |
| 12             | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 26.0                                           | 0.0114                                           | 205                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 19.5                                           | 0.0104                                           | 257                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 13.3                                           | 0.0089                                           | 310                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 18                               | 7.98                                           | 0.0081                                           | 475                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 21.5                             | 4.95                                           | 0.0076                                           | 708                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.8                              | 25.5                             | 3.30                                           | 0.0061                                           | 1070                            | 300/D                  |
| 13             | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 39.0                                           | 0.0130                                           | 180                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 26.0                                           | 0.0114                                           | 232                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 15                               | 19.5                                           | 0.0104                                           | 284                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 16                               | 13.3                                           | 0.0089                                           | 340                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 18.5                             | 7.98                                           | 0.0081                                           | 516                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 22.5                             | 4.95                                           | 0.0076                                           | 781                             | 300/D                  |
| 14             | 6                                                  | Flexible       | 0.8                                  | 1.8                              | 26.5                             | 3.30                                           | 0.0061                                           | 1168                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 39.0                                           | 0.0130                                           | 211                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 15                               | 26.0                                           | 0.0114                                           | 255                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 19.5                                           | 0.0104                                           | 301                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 17                               | 13.3                                           | 0.0089                                           | 361                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 19.5                             | 7.98                                           | 0.0081                                           | 548                             | 300/D                  |
| 15             | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 23.5                             | 4.95                                           | 0.0076                                           | 837                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.8                              | 28                               | 3.30                                           | 0.0061                                           | 1251                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 39.0                                           | 0.0130                                           | 211                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 15                               | 26.0                                           | 0.0114                                           | 258                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 19.5                                           | 0.0104                                           | 307                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 17                               | 13.3                                           | 0.0089                                           | 371                             | 300/D                  |
| 16             | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 19.5                             | 7.98                                           | 0.0081                                           | 572                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 23.5                             | 4.95                                           | 0.0076                                           | 861                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.8                              | 28                               | 3.30                                           | 0.0061                                           | 1301                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 39.0                                           | 0.0130                                           | 211                             | 300/D                  |

**Remark :** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
 Deep of laying (For cable laid direct in ground) 0.8 m  
 Shield bonded at single point

**600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH CONTROL CABLE**

| Number of core | Normal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|---------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 15             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 39.0                                           | 0.0130                                           | 223                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 26.0                                           | 0.0114                                           | 277                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 16                               | 19.5                                           | 0.0104                                           | 329                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 13.3                                           | 0.0089                                           | 398                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 20                               | 7.98                                           | 0.0081                                           | 616                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 24                               | 4.95                                           | 0.0076                                           | 929                             | 300/D                  |
| 16             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 15                               | 39.0                                           | 0.0130                                           | 234                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16                               | 26.0                                           | 0.0114                                           | 288                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 19.5                                           | 0.0104                                           | 343                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 13.3                                           | 0.0089                                           | 417                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 20.5                             | 7.98                                           | 0.0081                                           | 644                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 25.5                             | 4.95                                           | 0.0076                                           | 1024                            | 300/D                  |
| 17             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 39.0                                           | 0.0130                                           | 250                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 26.0                                           | 0.0114                                           | 318                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 17                               | 19.5                                           | 0.0104                                           | 377                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 18.5                             | 13.3                                           | 0.0089                                           | 456                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 21.5                             | 7.98                                           | 0.0081                                           | 698                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 27                               | 4.95                                           | 0.0076                                           | 1113                            | 300/D                  |
| 18             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 39.0                                           | 0.0130                                           | 259                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 26.0                                           | 0.0114                                           | 319                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 17                               | 19.5                                           | 0.0104                                           | 382                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 18.5                             | 13.3                                           | 0.0089                                           | 464                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 21.5                             | 7.98                                           | 0.0081                                           | 707                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 27                               | 4.95                                           | 0.0076                                           | 1130                            | 300/D                  |
| 19             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 39.0                                           | 0.0130                                           | 266                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 26.0                                           | 0.0114                                           | 328                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 17                               | 19.5                                           | 0.0104                                           | 393                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 18.5                             | 13.3                                           | 0.0089                                           | 479                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 21.5                             | 7.98                                           | 0.0081                                           | 732                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 27                               | 4.95                                           | 0.0076                                           | 1169                            | 300/D                  |
| 20             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 16                               | 39.0                                           | 0.0130                                           | 278                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 17                               | 26.0                                           | 0.0114                                           | 343                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 19.5                                           | 0.0104                                           | 411                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 19                               | 13.3                                           | 0.0089                                           | 502                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 22                               | 7.98                                           | 0.0081                                           | 773                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 27.5                             | 4.95                                           | 0.0076                                           | 1238                            | 300/D                  |
| 21             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 39.0                                           | 0.0130                                           | 291                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 26.0                                           | 0.0114                                           | 360                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 18                               | 19.5                                           | 0.0104                                           | 431                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 13.3                                           | 0.0089                                           | 527                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 22.5                             | 7.98                                           | 0.0081                                           | 806                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 28.5                             | 4.95                                           | 0.0076                                           | 1291                            | 300/D                  |
| 22             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 17                               | 39.0                                           | 0.0130                                           | 309                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 18.5                             | 26.0                                           | 0.0114                                           | 382                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 19                               | 19.5                                           | 0.0104                                           | 459                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 20.5                             | 13.3                                           | 0.0089                                           | 560                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 24                               | 7.98                                           | 0.0081                                           | 858                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 30                               | 4.95                                           | 0.0076                                           | 1368                            | 300/D                  |
| 23             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 17                               | 39.0                                           | 0.0130                                           | 316                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 18.5                             | 26.0                                           | 0.0114                                           | 391                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 19                               | 19.5                                           | 0.0104                                           | 470                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 20.5                             | 13.3                                           | 0.0089                                           | 575                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 24                               | 7.98                                           | 0.0081                                           | 885                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 30                               | 4.95                                           | 0.0076                                           | 1413                            | 300/D                  |
|                | 6                                                 | Flexible       | 0.8                                  | 1.8                              | 34                               | 3.30                                           | 0.0061                                           | 2037                            | 300/D                  |

D = Packing in drum

**600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH CONTROL CABLE**

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 24             | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 18                               | 39.0                                           | 0.0130                                           | 332                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 19                               | 26.0                                           | 0.0114                                           | 410                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 19.5                                           | 0.0104                                           | 491                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 21.5                             | 13.3                                           | 0.0089                                           | 603                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 26                               | 7.98                                           | 0.0081                                           | 975                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 31.5                             | 4.95                                           | 0.0076                                           | 1474                            | 300/D                  |
| 25             | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 37                               | 3.30                                           | 0.0061                                           | 2192                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 18                               | 39.0                                           | 0.0130                                           | 341                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 19                               | 26.0                                           | 0.0114                                           | 422                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 19.5                                           | 0.0104                                           | 506                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 21.5                             | 13.3                                           | 0.0089                                           | 622                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 26                               | 7.98                                           | 0.0081                                           | 1006                            | 300/D                  |
| 26             | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 31.5                             | 4.95                                           | 0.0076                                           | 1523                            | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 37                               | 3.30                                           | 0.0061                                           | 2265                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 18                               | 39.0                                           | 0.0130                                           | 350                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 19                               | 26.0                                           | 0.0114                                           | 434                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 19.5                                           | 0.0104                                           | 521                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 21.5                             | 13.3                                           | 0.0089                                           | 641                             | 300/D                  |
| 27             | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 26                               | 7.98                                           | 0.0081                                           | 1037                            | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 31.5                             | 4.95                                           | 0.0076                                           | 1573                            | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 37                               | 3.30                                           | 0.0061                                           | 2341                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 18.5                             | 39.0                                           | 0.0130                                           | 358                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 26.0                                           | 0.0114                                           | 445                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 20                               | 19.5                                           | 0.0104                                           | 536                             | 300/D                  |
| 28             | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 22                               | 13.3                                           | 0.0089                                           | 658                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 26.5                             | 7.98                                           | 0.0081                                           | 1064                            | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 32                               | 4.95                                           | 0.0076                                           | 1617                            | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 38                               | 3.30                                           | 0.0061                                           | 2403                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 19                               | 39.0                                           | 0.0130                                           | 383                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 20                               | 26.0                                           | 0.0114                                           | 475                             | 300/D                  |
| 29             | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 21                               | 19.5                                           | 0.0104                                           | 572                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 23                               | 13.3                                           | 0.0089                                           | 702                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 27.5                             | 7.98                                           | 0.0081                                           | 1135                            | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 33                               | 4.95                                           | 0.0076                                           | 1723                            | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 39                               | 3.30                                           | 0.0061                                           | 2558                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 19                               | 39.0                                           | 0.0130                                           | 381                             | 300/D                  |
| 30             | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 20                               | 26.0                                           | 0.0114                                           | 474                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 21                               | 19.5                                           | 0.0104                                           | 571                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 23                               | 13.3                                           | 0.0089                                           | 702                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 27.5                             | 7.98                                           | 0.0081                                           | 1136                            | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 33                               | 4.95                                           | 0.0076                                           | 1729                            | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 39                               | 3.30                                           | 0.0061                                           | 2571                            | 300/D                  |
| 31             | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 19                               | 39.0                                           | 0.0130                                           | 390                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 20                               | 26.0                                           | 0.0114                                           | 486                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 21                               | 19.5                                           | 0.0104                                           | 586                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 23                               | 13.3                                           | 0.0089                                           | 721                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 27.5                             | 7.98                                           | 0.0081                                           | 1167                            | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 33                               | 4.95                                           | 0.0076                                           | 1780                            | 300/D                  |
| 32             | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 39                               | 3.30                                           | 0.0061                                           | 2647                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 39.0                                           | 0.0130                                           | 416                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 21                               | 26.0                                           | 0.0114                                           | 518                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 21.5                             | 19.5                                           | 0.0104                                           | 626                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 13.3                                           | 0.0089                                           | 769                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 28.5                             | 7.98                                           | 0.0081                                           | 1242                            | 300/D                  |
| 33             | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 34.5                             | 4.95                                           | 0.0076                                           | 1889                            | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 40.5                             | 3.30                                           | 0.0061                                           | 2807                            | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 39.0                                           | 0.0130                                           | 414                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 21                               | 26.0                                           | 0.0114                                           | 517                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.4                              | 21.5                             | 19.5                                           | 0.0104                                           | 625                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 13.3                                           | 0.0089                                           | 768                             | 300/D                  |
| 34             | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 28.5                             | 7.98                                           | 0.0081                                           | 1242                            | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.8                              | 34.5                             | 4.95                                           | 0.0076                                           | 1896                            | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 2.2                              | 40.5                             | 3.30                                           | 0.0061                                           | 2820                            | 300/D                  |

**B**

## 600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH CONTROL CABLE

| Number of cores | Normal cross sectional area<br>(mm²) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|--------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 33              | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 39.0                                           | 0.0130                                           | 423                             | 300/D                  |
|                 | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 21                               | 26.0                                           | 0.0114                                           | 529                             | 300/D                  |
|                 | 1                                    | Flexible       | 0.6                                  | 1.4                              | 21.5                             | 19.5                                           | 0.0104                                           | 640                             | 300/D                  |
|                 | 1.5                                  | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 13.3                                           | 0.0089                                           | 788                             | 300/D                  |
|                 | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 28.5                             | 7.98                                           | 0.0081                                           | 1274                            | 300/D                  |
|                 | 4                                    | Flexible       | 0.8                                  | 1.8                              | 34.5                             | 4.95                                           | 0.0076                                           | 1946                            | 300/D                  |
| 34              | 6                                    | Flexible       | 0.8                                  | 2.2                              | 40.5                             | 3.30                                           | 0.0061                                           | 2896                            | 300/D                  |
|                 | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 20.5                             | 39.0                                           | 0.0130                                           | 450                             | 300/D                  |
|                 | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 22                               | 26.0                                           | 0.0114                                           | 561                             | 300/D                  |
|                 | 1                                    | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 19.5                                           | 0.0104                                           | 677                             | 300/D                  |
|                 | 1.5                                  | Flexible       | 0.6                                  | 1.4                              | 24.5                             | 13.3                                           | 0.0089                                           | 834                             | 300/D                  |
|                 | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 29.5                             | 7.98                                           | 0.0081                                           | 1348                            | 300/D                  |
| 35              | 4                                    | Flexible       | 0.8                                  | 2.2                              | 36.5                             | 4.95                                           | 0.0076                                           | 2118                            | 300/D                  |
|                 | 6                                    | Flexible       | 0.8                                  | 2.2                              | 42.5                             | 3.30                                           | 0.0061                                           | 3053                            | 300/D                  |
|                 | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 20.5                             | 39.0                                           | 0.0130                                           | 448                             | 300/D                  |
|                 | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 22                               | 26.0                                           | 0.0114                                           | 559                             | 300/D                  |
|                 | 1                                    | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 19.5                                           | 0.0104                                           | 676                             | 300/D                  |
|                 | 1.5                                  | Flexible       | 0.6                                  | 1.4                              | 24.5                             | 13.3                                           | 0.0089                                           | 833                             | 300/D                  |
| 36              | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 29.5                             | 7.98                                           | 0.0081                                           | 1349                            | 300/D                  |
|                 | 4                                    | Flexible       | 0.8                                  | 2.2                              | 36.5                             | 4.95                                           | 0.0076                                           | 2125                            | 300/D                  |
|                 | 6                                    | Flexible       | 0.8                                  | 2.2                              | 42.5                             | 3.30                                           | 0.0061                                           | 3067                            | 300/D                  |
|                 | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 20.5                             | 39.0                                           | 0.0130                                           | 457                             | 300/D                  |
|                 | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 22                               | 26.0                                           | 0.0114                                           | 571                             | 300/D                  |
|                 | 1                                    | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 19.5                                           | 0.0104                                           | 691                             | 300/D                  |
| 37              | 1.5                                  | Flexible       | 0.6                                  | 1.4                              | 24.5                             | 13.3                                           | 0.0089                                           | 853                             | 300/D                  |
|                 | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 29.5                             | 7.98                                           | 0.0081                                           | 1380                            | 300/D                  |
|                 | 4                                    | Flexible       | 0.8                                  | 2.2                              | 36.5                             | 4.95                                           | 0.0076                                           | 2175                            | 300/D                  |
|                 | 6                                    | Flexible       | 0.8                                  | 2.2                              | 42.5                             | 3.30                                           | 0.0061                                           | 3142                            | 300/D                  |
|                 | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 20.5                             | 39.0                                           | 0.0130                                           | 464                             | 300/D                  |
|                 | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 22                               | 26.0                                           | 0.0114                                           | 581                             | 300/D                  |
| 38              | 1                                    | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 19.5                                           | 0.0104                                           | 705                             | 300/D                  |
|                 | 1.5                                  | Flexible       | 0.6                                  | 1.4                              | 24.5                             | 13.3                                           | 0.0089                                           | 869                             | 300/D                  |
|                 | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 29.5                             | 7.98                                           | 0.0081                                           | 1407                            | 300/D                  |
|                 | 4                                    | Flexible       | 0.8                                  | 2.2                              | 36.5                             | 4.95                                           | 0.0076                                           | 2218                            | 300/D                  |
|                 | 6                                    | Flexible       | 0.8                                  | 2.2                              | 42.5                             | 3.30                                           | 0.0061                                           | 3206                            | 300/D                  |
|                 | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 21                               | 39.0                                           | 0.0130                                           | 482                             | 300/D                  |
| 39              | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 26.0                                           | 0.0114                                           | 603                             | 300/D                  |
|                 | 1                                    | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 19.5                                           | 0.0104                                           | 730                             | 300/D                  |
|                 | 1.5                                  | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 13.3                                           | 0.0089                                           | 952                             | 300/D                  |
|                 | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 30.5                             | 7.98                                           | 0.0081                                           | 1458                            | 300/D                  |
|                 | 4                                    | Flexible       | 0.8                                  | 2.2                              | 38                               | 4.95                                           | 0.0076                                           | 2299                            | 300/D                  |
|                 | 6                                    | Flexible       | 0.8                                  | 2.2                              | 44                               | 3.30                                           | 0.0061                                           | 3321                            | 300/D                  |
| 40              | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 21                               | 39.0                                           | 0.0130                                           | 491                             | 300/D                  |
|                 | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 26.0                                           | 0.0114                                           | 615                             | 300/D                  |
|                 | 1                                    | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 19.5                                           | 0.0104                                           | 745                             | 300/D                  |
|                 | 1.5                                  | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 13.3                                           | 0.0089                                           | 971                             | 300/D                  |
|                 | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 30.5                             | 7.98                                           | 0.0081                                           | 1489                            | 300/D                  |
|                 | 4                                    | Flexible       | 0.8                                  | 2.2                              | 38                               | 4.95                                           | 0.0076                                           | 2347                            | 300/D                  |
| 41              | 6                                    | Flexible       | 0.8                                  | 2.2                              | 44                               | 3.30                                           | 0.0061                                           | 3394                            | 300/D                  |
|                 | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 21                               | 39.0                                           | 0.0130                                           | 498                             | 300/D                  |
|                 | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 26.0                                           | 0.0114                                           | 625                             | 300/D                  |
|                 | 1                                    | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 19.5                                           | 0.0104                                           | 757                             | 300/D                  |
|                 | 1.5                                  | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 13.3                                           | 0.0089                                           | 986                             | 300/D                  |
|                 | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 30.5                             | 7.98                                           | 0.0081                                           | 1514                            | 300/D                  |
| 42              | 4                                    | Flexible       | 0.8                                  | 2.2                              | 38                               | 4.95                                           | 0.0076                                           | 2393                            | 300/D                  |
|                 | 6                                    | Flexible       | 0.8                                  | 2.2                              | 44                               | 3.30                                           | 0.0061                                           | 3461                            | 300/D                  |
|                 | 0.5                                  | Flexible       | 0.6                                  | 1.4                              | 22                               | 39.0                                           | 0.0130                                           | 517                             | 300/D                  |
|                 | 0.75                                 | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 26.0                                           | 0.0114                                           | 647                             | 300/D                  |
|                 | 1                                    | Flexible       | 0.6                                  | 1.8                              | 25                               | 19.5                                           | 0.0104                                           | 835                             | 300/D                  |
|                 | 1.5                                  | Flexible       | 0.6                                  | 1.8                              | 27.5                             | 13.3                                           | 0.0089                                           | 1022                            | 300/D                  |
| 43              | 2.5                                  | Flexible       | 0.7                                  | 1.8                              | 32                               | 7.98                                           | 0.0081                                           | 1568                            | 300/D                  |
|                 | 4                                    | Flexible       | 0.8                                  | 2.2                              | 39.5                             | 4.95                                           | 0.0076                                           | 2471                            | 300/D                  |
|                 | 6                                    | Flexible       | 0.8                                  | 2.2                              | 45.5                             | 3.30                                           | 0.0061                                           | 3575                            | 300/D                  |
|                 |                                      |                |                                      |                                  |                                  |                                                |                                                  |                                 |                        |

D = Packing in drum

**600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH CONTROL CABLE**

| Number of cores | Normal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|---------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 42              | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22                               | 39.0                                           | 0.0130                                           | 526                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 26.0                                           | 0.0114                                           | 660                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.8                              | 25                               | 19.5                                           | 0.0104                                           | 850                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 27.5                             | 13.3                                           | 0.0089                                           | 1041                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 32                               | 7.98                                           | 0.0081                                           | 1599                            | 300/D                  |
|                 | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 39.5                             | 4.95                                           | 0.0076                                           | 2522                            | 300/D                  |
| 43              | 6                                                 | Flexible       | 0.8                                  | 2.2                              | 45.5                             | 3.30                                           | 0.0061                                           | 3650                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22                               | 39.0                                           | 0.0130                                           | 533                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 26.0                                           | 0.0114                                           | 669                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.8                              | 25                               | 19.5                                           | 0.0104                                           | 862                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 27.5                             | 13.3                                           | 0.0089                                           | 1057                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 32                               | 7.98                                           | 0.0081                                           | 1627                            | 300/D                  |
| 44              | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 39.5                             | 4.95                                           | 0.0076                                           | 2538                            | 300/D                  |
|                 | 6                                                 | Flexible       | 0.8                                  | 2.2                              | 45.5                             | 3.30                                           | 0.0061                                           | 3721                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 39.0                                           | 0.0130                                           | 549                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 24                               | 26.0                                           | 0.0114                                           | 688                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.8                              | 26                               | 19.5                                           | 0.0104                                           | 884                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 28.5                             | 13.3                                           | 0.0089                                           | 1086                            | 300/D                  |
| 45              | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 33                               | 7.98                                           | 0.0081                                           | 1668                            | 300/D                  |
|                 | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 41                               | 4.95                                           | 0.0076                                           | 2632                            | 300/D                  |
|                 | 6                                                 | Flexible       | 0.8                                  | 2.6                              | 48                               | 3.30                                           | 0.0061                                           | 3898                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 39.0                                           | 0.0130                                           | 558                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 24                               | 26.0                                           | 0.0114                                           | 700                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.8                              | 26                               | 19.5                                           | 0.0104                                           | 899                             | 300/D                  |
| 46              | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 28.5                             | 13.3                                           | 0.0089                                           | 1105                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 33                               | 7.98                                           | 0.0081                                           | 1700                            | 300/D                  |
|                 | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 41                               | 4.95                                           | 0.0076                                           | 2682                            | 300/D                  |
|                 | 6                                                 | Flexible       | 0.8                                  | 2.6                              | 48                               | 3.30                                           | 0.0061                                           | 3973                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 39.0                                           | 0.0130                                           | 567                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 24                               | 26.0                                           | 0.0114                                           | 712                             | 300/D                  |
| 47              | 1                                                 | Flexible       | 0.6                                  | 1.8                              | 26                               | 19.5                                           | 0.0104                                           | 915                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 28.5                             | 13.3                                           | 0.0089                                           | 1124                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 33                               | 7.98                                           | 0.0081                                           | 1731                            | 300/D                  |
|                 | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 41                               | 4.95                                           | 0.0076                                           | 2733                            | 300/D                  |
|                 | 6                                                 | Flexible       | 0.8                                  | 2.6                              | 48                               | 3.30                                           | 0.0061                                           | 4048                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 39.0                                           | 0.0130                                           | 577                             | 300/D                  |
| 48              | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 24                               | 26.0                                           | 0.0114                                           | 724                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.8                              | 26                               | 19.5                                           | 0.0104                                           | 930                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 28.5                             | 13.3                                           | 0.0089                                           | 1144                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 33                               | 7.98                                           | 0.0081                                           | 1763                            | 300/D                  |
|                 | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 41                               | 4.95                                           | 0.0076                                           | 2783                            | 300/D                  |
|                 | 6                                                 | Flexible       | 0.8                                  | 2.6                              | 48                               | 3.30                                           | 0.0061                                           | 4124                            | 300/D                  |
| 49              | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 23                               | 39.0                                           | 0.0130                                           | 584                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 24.5                             | 26.0                                           | 0.0114                                           | 735                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 19.5                                           | 0.0104                                           | 946                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 29                               | 13.3                                           | 0.0089                                           | 1162                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 33.5                             | 7.98                                           | 0.0081                                           | 1790                            | 300/D                  |
|                 | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 42                               | 4.95                                           | 0.0076                                           | 2827                            | 300/D                  |
| 50              | 6                                                 | Flexible       | 0.8                                  | 2.6                              | 49                               | 3.30                                           | 0.0061                                           | 4188                            | 300/D                  |

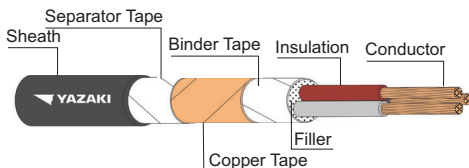
D = Packing in drum

This table show only flexible stranded conductor. If you want to have solid or concentric conductor type, please contact with our sales department for CW-S. The overall diameter of cable and cable weight shall be change a little bit more.

\*Remark : Special protection can be produce.

## CVV-S

### 600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE



#### CABLE STRUCTURE

**Conductor** : Flexible annealed copper

**Insulation** : Polyvinyl chloride (PVC)

**Core identification** **2 Cores** : Blue and Brown  
**3 Cores** : Brown, Black, Grey  
**4 Cores** : Blue, Brown, Black, Grey  
**More than 4 Cores** :  
 Black with marking numbers, colored white, printed continuously throughout the whole length of insulated wires for the purpose of core identification.

**Filler** : Non-hygroscopic material

**Binder tape and Separator tape** : Non-hygroscopic tape

**Shield (for CVV-S cable)** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC)

#### TECHNICAL DATA

**Classification** : Maximum conductor temperature 70°C  
 : Circuit voltage no exceeding 600 Volts

**AC Testing voltage** : 2,000 Volts

**Reference standard** : THAI YAZAKI STANDARD

#### APPLICATION

For supervisory electrical equipment, station control circuits, outdoor, suitable installation in the dry or wet cable trenches.

| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 2              | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 9.0                              | 39.0                                           | 0.0130                                           | 80                              | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 9.5                              | 26.0                                           | 0.0114                                           | 89                              | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 9.5                              | 19.5                                           | 0.0104                                           | 100                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.0                             | 13.3                                           | 0.0089                                           | 112                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.2                              | 11.5                             | 7.98                                           | 0.0081                                           | 154                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.2                              | 13.0                             | 4.95                                           | 0.0076                                           | 212                             | 300/D                  |
| 3              | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 15.0                             | 3.30                                           | 0.0061                                           | 293                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 9.0                              | 39.0                                           | 0.0130                                           | 91                              | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 9.5                              | 26.0                                           | 0.0114                                           | 103                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 10.0                             | 19.5                                           | 0.0104                                           | 115                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 13.3                                           | 0.0089                                           | 132                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.2                              | 11.5                             | 7.98                                           | 0.0081                                           | 184                             | 300/D                  |
| 4              | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 14.0                             | 4.95                                           | 0.0076                                           | 274                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 15.5                             | 3.30                                           | 0.0061                                           | 370                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.0                             | 39.0                                           | 0.0130                                           | 101                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 26.0                                           | 0.0114                                           | 117                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 19.5                                           | 0.0104                                           | 138                             | 300/D                  |
|                | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 11.0                             | 13.3                                           | 0.0089                                           | 159                             | 300/D                  |
| 5              | 2.5                                                | Flexible       | 0.7                                  | 1.2                              | 12.5                             | 7.98                                           | 0.0081                                           | 223                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 15.0                             | 4.95                                           | 0.0076                                           | 334                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 17.0                             | 3.30                                           | 0.0061                                           | 462                             | 300/D                  |
|                | 0.5                                                | Flexible       | 0.6                                  | 1.2                              | 10.5                             | 39.0                                           | 0.0130                                           | 118                             | 300/D                  |
|                | 0.75                                               | Flexible       | 0.6                                  | 1.2                              | 11.0                             | 26.0                                           | 0.0114                                           | 138                             | 300/D                  |
|                | 1                                                  | Flexible       | 0.6                                  | 1.2                              | 11.5                             | 19.5                                           | 0.0104                                           | 158                             | 300/D                  |
| 6              | 1.5                                                | Flexible       | 0.6                                  | 1.2                              | 12.0                             | 13.3                                           | 0.0089                                           | 189                             | 300/D                  |
|                | 2.5                                                | Flexible       | 0.7                                  | 1.4                              | 14.0                             | 7.98                                           | 0.0081                                           | 280                             | 300/D                  |
|                | 4                                                  | Flexible       | 0.8                                  | 1.4                              | 16.5                             | 4.95                                           | 0.0076                                           | 402                             | 300/D                  |
|                | 6                                                  | Flexible       | 0.8                                  | 1.4                              | 18.5                             | 3.30                                           | 0.0061                                           | 557                             | 300/D                  |

D = Packing in drum

# CVV-S

## 600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE

| Number of core | Normal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|---------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 6              | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 11.5                             | 39.0                                           | 0.0130                                           | 134                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.2                              | 12.0                             | 26.0                                           | 0.0114                                           | 158                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.2                              | 12.0                             | 19.5                                           | 0.0104                                           | 182                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.0                             | 13.3                                           | 0.0089                                           | 214                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 15.0                             | 7.98                                           | 0.0081                                           | 326                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 18.0                             | 4.95                                           | 0.0076                                           | 473                             | 300/D                  |
| 7              | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 11.5                             | 39.0                                           | 0.0130                                           | 142                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.2                              | 12.0                             | 26.0                                           | 0.0114                                           | 168                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.2                              | 12.0                             | 19.5                                           | 0.0104                                           | 194                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.0                             | 13.3                                           | 0.0089                                           | 229                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 15.0                             | 7.98                                           | 0.0081                                           | 351                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 18.0                             | 4.95                                           | 0.0076                                           | 513                             | 300/D                  |
| 8              | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 12.0                             | 39.0                                           | 0.0130                                           | 161                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.2                              | 12.5                             | 26.0                                           | 0.0114                                           | 191                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.2                              | 13.0                             | 19.5                                           | 0.0104                                           | 223                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 13.3                                           | 0.0089                                           | 276                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 16.5                             | 7.98                                           | 0.0081                                           | 405                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 19.5                             | 4.95                                           | 0.0076                                           | 594                             | 300/D                  |
| 9              | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 12.5                             | 39.0                                           | 0.0130                                           | 174                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 26.0                                           | 0.0114                                           | 207                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 14.0                             | 19.5                                           | 0.0104                                           | 254                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 13.3                                           | 0.0089                                           | 300                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 17.5                             | 7.98                                           | 0.0081                                           | 454                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 20.5                             | 4.95                                           | 0.0076                                           | 663                             | 300/D                  |
| 10             | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 39.0                                           | 0.0130                                           | 191                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 26.0                                           | 0.0114                                           | 249                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 15.0                             | 19.5                                           | 0.0104                                           | 288                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 13.3                                           | 0.0089                                           | 340                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 18.5                             | 7.98                                           | 0.0081                                           | 500                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 22.0                             | 4.95                                           | 0.0076                                           | 732                             | 300/D                  |
| 11             | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 39.0                                           | 0.0130                                           | 200                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 26.0                                           | 0.0114                                           | 253                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 15.0                             | 19.5                                           | 0.0104                                           | 295                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 13.3                                           | 0.0089                                           | 351                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 18.5                             | 7.98                                           | 0.0081                                           | 525                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 22.0                             | 4.95                                           | 0.0076                                           | 767                             | 300/D                  |
| 12             | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 39.0                                           | 0.0130                                           | 215                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 26.0                                           | 0.0114                                           | 277                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 19.5                                           | 0.0104                                           | 323                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 17.0                             | 13.3                                           | 0.0089                                           | 382                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 19.5                             | 7.98                                           | 0.0081                                           | 568                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 23.0                             | 4.95                                           | 0.0076                                           | 855                             | 300/D                  |
| 13             | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 39.0                                           | 0.0130                                           | 227                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 14.5                             | 26.0                                           | 0.0114                                           | 294                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 19.5                                           | 0.0104                                           | 343                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 13.3                                           | 0.0089                                           | 405                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 20.0                             | 7.98                                           | 0.0081                                           | 603                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 24.0                             | 4.95                                           | 0.0076                                           | 915                             | 300/D                  |
| 14             | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 39.0                                           | 0.0130                                           | 247                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16.0                             | 26.0                                           | 0.0114                                           | 297                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 19.5                                           | 0.0104                                           | 349                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 13.3                                           | 0.0089                                           | 416                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 20.0                             | 7.98                                           | 0.0081                                           | 626                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.4                              | 24.0                             | 4.95                                           | 0.0076                                           | 939                             | 300/D                  |
| 15             | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 39.0                                           | 0.0130                                           | 267                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16.0                             | 26.0                                           | 0.0114                                           | 327                             | 300/D                  |
| 16             | 0.5                                               | Flexible       | 0.6                                  | 1.2                              | 13.5                             | 39.0                                           | 0.0130                                           | 287                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16.0                             | 26.0                                           | 0.0114                                           | 347                             | 300/D                  |

**Remark :** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
 Deep of laying (For cable laid direct in ground) 0.8 m  
 Shield bonded at single point

## 600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE

| Number of core | Normal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ-km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------|---------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 15             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 39.0                                           | 0.0130                                           | 260                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 26.0                                           | 0.0114                                           | 317                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 17.0                             | 19.5                                           | 0.0104                                           | 372                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 18.0                             | 13.3                                           | 0.0089                                           | 444                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 21.0                             | 7.98                                           | 0.0081                                           | 672                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 26.0                             | 4.95                                           | 0.0076                                           | 1061                            | 300/D                  |
| 16             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 15.5                             | 39.0                                           | 0.0130                                           | 273                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 26.0                                           | 0.0114                                           | 329                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 17.0                             | 19.5                                           | 0.0104                                           | 387                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 18.5                             | 13.3                                           | 0.0089                                           | 464                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 21.0                             | 7.98                                           | 0.0081                                           | 702                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 26.5                             | 4.95                                           | 0.0076                                           | 1108                            | 300/D                  |
| 17             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 39.0                                           | 0.0130                                           | 291                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 26.0                                           | 0.0114                                           | 362                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 18.0                             | 19.5                                           | 0.0104                                           | 424                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 13.3                                           | 0.0089                                           | 505                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 22.5                             | 7.98                                           | 0.0081                                           | 771                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 27.5                             | 4.95                                           | 0.0076                                           | 1202                            | 300/D                  |
| 18             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 39.0                                           | 0.0130                                           | 1707                            | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 26.0                                           | 0.0114                                           | 300                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 18.0                             | 19.5                                           | 0.0104                                           | 363                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 13.3                                           | 0.0089                                           | 428                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 22.5                             | 7.98                                           | 0.0081                                           | 514                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 27.5                             | 4.95                                           | 0.0076                                           | 780                             | 300/D                  |
| 19             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 39.0                                           | 0.0130                                           | 1219                            | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 26.0                                           | 0.0114                                           | 1727                            | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 18.0                             | 19.5                                           | 0.0104                                           | 307                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 13.3                                           | 0.0089                                           | 372                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 22.5                             | 7.98                                           | 0.0081                                           | 440                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 27.5                             | 4.95                                           | 0.0076                                           | 529                             | 300/D                  |
| 20             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 39.0                                           | 0.0130                                           | 805                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 26.0                                           | 0.0114                                           | 1258                            | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 18.0                             | 19.5                                           | 0.0104                                           | 1785                            | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 20.0                             | 13.3                                           | 0.0089                                           | 319                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 23.0                             | 7.98                                           | 0.0081                                           | 387                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 28.5                             | 4.95                                           | 0.0076                                           | 458                             | 300/D                  |
| 21             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 39.0                                           | 0.0130                                           | 553                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 26.0                                           | 0.0114                                           | 847                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 18.0                             | 19.5                                           | 0.0104                                           | 1330                            | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 20.0                             | 13.3                                           | 0.0089                                           | 1888                            | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.4                              | 23.5                             | 7.98                                           | 0.0081                                           | 333                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 29.0                             | 4.95                                           | 0.0076                                           | 405                             | 300/D                  |
| 22             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 16.5                             | 39.0                                           | 0.0130                                           | 480                             | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 17.5                             | 26.0                                           | 0.0114                                           | 579                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 18.0                             | 19.5                                           | 0.0104                                           | 630                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 21.0                             | 13.3                                           | 0.0089                                           | 883                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 25.5                             | 7.98                                           | 0.0081                                           | 1385                            | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 30.5                             | 4.95                                           | 0.0076                                           | 1967                            | 300/D                  |
| 23             | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 18.0                             | 39.0                                           | 0.0130                                           | 2085                            | 300/D                  |
|                | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 19.0                             | 26.0                                           | 0.0114                                           | 360                             | 300/D                  |
|                | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 19.5                             | 19.5                                           | 0.0104                                           | 439                             | 300/D                  |
|                | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 21.0                             | 13.3                                           | 0.0089                                           | 522                             | 300/D                  |
|                | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 25.5                             | 7.98                                           | 0.0081                                           | 630                             | 300/D                  |
|                | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 30.5                             | 4.95                                           | 0.0076                                           | 1017                            | 300/D                  |
|                | 6                                                 | Flexible       | 0.8                                  | 1.8                              | 35.0                             | 3.30                                           | 0.0061                                           | 1512                            | 300/D                  |
|                | 6                                                 | Flexible       | 0.8                                  | 1.8                              | 35.0                             | 3.30                                           | 0.0061                                           | 2154                            | 300/D                  |

D = Packing in drum

**600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE**

| Number of core | Normal cross sectional area | Conductor type | Insulation thickness nominal | Sheath thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Insulation resistance at 70°C minimum | Cable weight approx. | Standard Length |
|----------------|-----------------------------|----------------|------------------------------|--------------------------|--------------------------|--------------------------------------|---------------------------------------|----------------------|-----------------|
|                | (mm <sup>2</sup> )          |                | (mm)                         | (mm)                     | (mm)                     | (Ω/km)                               | (MΩ-km)                               | (kg/km)              | (m)             |
| 24             | 0.5                         | Flexible       | 0.6                          | 1.4                      | 18.5                     | 39.0                                 | 0.0130                                | 379                  | 300/D           |
|                | 0.75                        | Flexible       | 0.6                          | 1.4                      | 20.0                     | 26.0                                 | 0.0114                                | 461                  | 300/D           |
|                | 1                           | Flexible       | 0.6                          | 1.4                      | 20.5                     | 19.5                                 | 0.0104                                | 546                  | 300/D           |
|                | 1.5                         | Flexible       | 0.6                          | 1.4                      | 22.0                     | 13.3                                 | 0.0089                                | 660                  | 300/D           |
|                | 2.5                         | Flexible       | 0.7                          | 1.8                      | 26.5                     | 7.98                                 | 0.0081                                | 1062                 | 300/D           |
|                | 4                           | Flexible       | 0.8                          | 1.8                      | 32.0                     | 4.95                                 | 0.0076                                | 1579                 | 300/D           |
| 25             | 6                           | Flexible       | 0.8                          | 2.2                      | 37.5                     | 3.30                                 | 0.0061                                | 2316                 | 300/D           |
|                | 0.5                         | Flexible       | 0.6                          | 1.4                      | 18.5                     | 39.0                                 | 0.0130                                | 388                  | 300/D           |
|                | 0.75                        | Flexible       | 0.6                          | 1.4                      | 20.0                     | 26.0                                 | 0.0114                                | 473                  | 300/D           |
|                | 1                           | Flexible       | 0.6                          | 1.4                      | 20.5                     | 19.5                                 | 0.0104                                | 560                  | 300/D           |
|                | 1.5                         | Flexible       | 0.6                          | 1.4                      | 22.0                     | 13.3                                 | 0.0089                                | 679                  | 300/D           |
|                | 2.5                         | Flexible       | 0.7                          | 1.8                      | 26.5                     | 7.98                                 | 0.0081                                | 1093                 | 300/D           |
| 26             | 4                           | Flexible       | 0.8                          | 1.8                      | 32.0                     | 4.95                                 | 0.0076                                | 1628                 | 300/D           |
|                | 6                           | Flexible       | 0.8                          | 2.2                      | 37.5                     | 3.30                                 | 0.0061                                | 2389                 | 300/D           |
|                | 0.5                         | Flexible       | 0.6                          | 1.4                      | 18.5                     | 39.0                                 | 0.0130                                | 397                  | 300/D           |
|                | 0.75                        | Flexible       | 0.6                          | 1.4                      | 20.0                     | 26.0                                 | 0.0114                                | 485                  | 300/D           |
|                | 1                           | Flexible       | 0.6                          | 1.4                      | 20.5                     | 19.5                                 | 0.0104                                | 576                  | 300/D           |
|                | 1.5                         | Flexible       | 0.6                          | 1.4                      | 22.0                     | 13.3                                 | 0.0089                                | 699                  | 300/D           |
| 27             | 2.5                         | Flexible       | 0.7                          | 1.8                      | 26.5                     | 7.98                                 | 0.0081                                | 1124                 | 300/D           |
|                | 4                           | Flexible       | 0.8                          | 1.8                      | 32.0                     | 4.95                                 | 0.0076                                | 1678                 | 300/D           |
|                | 6                           | Flexible       | 0.8                          | 2.2                      | 37.5                     | 3.30                                 | 0.0061                                | 2465                 | 300/D           |
|                | 0.5                         | Flexible       | 0.6                          | 1.4                      | 19.0                     | 39.0                                 | 0.0130                                | 407                  | 300/D           |
|                | 0.75                        | Flexible       | 0.6                          | 1.4                      | 20.5                     | 26.0                                 | 0.0114                                | 497                  | 300/D           |
|                | 1                           | Flexible       | 0.6                          | 1.4                      | 21.0                     | 19.5                                 | 0.0104                                | 592                  | 300/D           |
| 28             | 1.5                         | Flexible       | 0.6                          | 1.4                      | 22.5                     | 13.3                                 | 0.0089                                | 717                  | 300/D           |
|                | 2.5                         | Flexible       | 0.7                          | 1.8                      | 27.5                     | 7.98                                 | 0.0081                                | 1153                 | 300/D           |
|                | 4                           | Flexible       | 0.8                          | 1.8                      | 33.0                     | 4.95                                 | 0.0076                                | 1725                 | 300/D           |
|                | 6                           | Flexible       | 0.8                          | 2.2                      | 38.5                     | 3.30                                 | 0.0061                                | 2531                 | 300/D           |
|                | 0.5                         | Flexible       | 0.6                          | 1.4                      | 19.5                     | 39.0                                 | 0.0130                                | 432                  | 300/D           |
|                | 0.75                        | Flexible       | 0.6                          | 1.4                      | 21.0                     | 26.0                                 | 0.0114                                | 529                  | 300/D           |
| 29             | 1                           | Flexible       | 0.6                          | 1.4                      | 21.5                     | 19.5                                 | 0.0104                                | 629                  | 300/D           |
|                | 1.5                         | Flexible       | 0.6                          | 1.4                      | 23.5                     | 13.3                                 | 0.0089                                | 778                  | 300/D           |
|                | 2.5                         | Flexible       | 0.7                          | 1.8                      | 28.5                     | 7.98                                 | 0.0081                                | 1228                 | 300/D           |
|                | 4                           | Flexible       | 0.8                          | 1.8                      | 34.0                     | 4.95                                 | 0.0076                                | 1835                 | 300/D           |
|                | 6                           | Flexible       | 0.8                          | 2.2                      | 40.0                     | 3.30                                 | 0.0061                                | 2690                 | 300/D           |
|                | 0.5                         | Flexible       | 0.6                          | 1.4                      | 19.5                     | 39.0                                 | 0.0130                                | 430                  | 300/D           |
| 30             | 0.75                        | Flexible       | 0.6                          | 1.4                      | 21.0                     | 26.0                                 | 0.0114                                | 528                  | 300/D           |
|                | 1                           | Flexible       | 0.6                          | 1.4                      | 21.5                     | 19.5                                 | 0.0104                                | 628                  | 300/D           |
|                | 1.5                         | Flexible       | 0.6                          | 1.4                      | 23.5                     | 13.3                                 | 0.0089                                | 777                  | 300/D           |
|                | 2.5                         | Flexible       | 0.7                          | 1.8                      | 28.5                     | 7.98                                 | 0.0081                                | 1229                 | 300/D           |
|                | 4                           | Flexible       | 0.8                          | 1.8                      | 34.0                     | 4.95                                 | 0.0076                                | 1841                 | 300/D           |
|                | 6                           | Flexible       | 0.8                          | 2.2                      | 40.0                     | 3.30                                 | 0.0061                                | 2704                 | 300/D           |
| 31             | 0.5                         | Flexible       | 0.6                          | 1.4                      | 19.5                     | 39.0                                 | 0.0130                                | 440                  | 300/D           |
|                | 0.75                        | Flexible       | 0.6                          | 1.4                      | 21.0                     | 26.0                                 | 0.0114                                | 540                  | 300/D           |
|                | 1                           | Flexible       | 0.6                          | 1.4                      | 21.5                     | 19.5                                 | 0.0104                                | 644                  | 300/D           |
|                | 1.5                         | Flexible       | 0.6                          | 1.4                      | 23.5                     | 13.3                                 | 0.0089                                | 796                  | 300/D           |
|                | 2.5                         | Flexible       | 0.7                          | 1.8                      | 28.5                     | 7.98                                 | 0.0081                                | 1260                 | 300/D           |
|                | 4                           | Flexible       | 0.8                          | 1.8                      | 34.0                     | 4.95                                 | 0.0076                                | 1892                 | 300/D           |
| 32             | 6                           | Flexible       | 0.8                          | 2.2                      | 40.0                     | 3.30                                 | 0.0061                                | 2779                 | 300/D           |
|                | 0.5                         | Flexible       | 0.6                          | 1.4                      | 20.5                     | 39.0                                 | 0.0130                                | 468                  | 300/D           |
|                | 0.75                        | Flexible       | 0.6                          | 1.4                      | 21.5                     | 26.0                                 | 0.0114                                | 574                  | 300/D           |
|                | 1                           | Flexible       | 0.6                          | 1.4                      | 22.5                     | 19.5                                 | 0.0104                                | 686                  | 300/D           |
|                | 1.5                         | Flexible       | 0.6                          | 1.4                      | 24.5                     | 13.3                                 | 0.0089                                | 846                  | 300/D           |
|                | 2.5                         | Flexible       | 0.7                          | 1.8                      | 29.5                     | 7.98                                 | 0.0081                                | 1338                 | 300/D           |
| 33             | 4                           | Flexible       | 0.8                          | 1.8                      | 35.0                     | 4.95                                 | 0.0076                                | 2006                 | 300/D           |
|                | 6                           | Flexible       | 0.8                          | 2.2                      | 41.5                     | 3.30                                 | 0.0061                                | 2945                 | 300/D           |
|                | 0.5                         | Flexible       | 0.6                          | 1.4                      | 20.5                     | 39.0                                 | 0.0130                                | 465                  | 300/D           |
|                | 0.75                        | Flexible       | 0.6                          | 1.4                      | 21.5                     | 26.0                                 | 0.0114                                | 573                  | 300/D           |
|                | 1                           | Flexible       | 0.6                          | 1.4                      | 22.5                     | 19.5                                 | 0.0104                                | 685                  | 300/D           |
|                | 1.5                         | Flexible       | 0.6                          | 1.4                      | 24.5                     | 13.3                                 | 0.0089                                | 845                  | 300/D           |
| 34             | 2.5                         | Flexible       | 0.7                          | 1.8                      | 29.5                     | 7.98                                 | 0.0081                                | 1339                 | 300/D           |
|                | 4                           | Flexible       | 0.8                          | 1.8                      | 35.0                     | 4.95                                 | 0.0076                                | 2012                 | 300/D           |
|                | 6                           | Flexible       | 0.8                          | 2.2                      | 41.5                     | 3.30                                 | 0.0061                                | 2958                 | 300/D           |

**B**

**600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE**

| Number of cores | Normal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|---------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 33              | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 20.5                             | 39.0                                           | 0.0130                                           | 475                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 21.5                             | 26.0                                           | 0.0114                                           | 585                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 19.5                                           | 0.0104                                           | 700                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.4                              | 24.5                             | 13.3                                           | 0.0089                                           | 865                             | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 29.5                             | 7.98                                           | 0.0081                                           | 1370                            | 300/D                  |
|                 | 4                                                 | Flexible       | 0.8                                  | 1.8                              | 35.0                             | 4.95                                           | 0.0076                                           | 2063                            | 300/D                  |
| 34              | 6                                                 | Flexible       | 0.8                                  | 2.2                              | 41.5                             | 3.30                                           | 0.0061                                           | 3034                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 21.0                             | 39.0                                           | 0.0130                                           | 504                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 26.0                                           | 0.0114                                           | 619                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 23.0                             | 19.5                                           | 0.0104                                           | 752                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 13.3                                           | 0.0089                                           | 964                             | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 30.5                             | 7.98                                           | 0.0081                                           | 1449                            | 300/D                  |
| 35              | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 37.5                             | 4.95                                           | 0.0076                                           | 2241                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 21.0                             | 39.0                                           | 0.0130                                           | 501                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 26.0                                           | 0.0114                                           | 617                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 23.0                             | 19.5                                           | 0.0104                                           | 752                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 13.3                                           | 0.0089                                           | 964                             | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 30.5                             | 7.98                                           | 0.0081                                           | 1449                            | 300/D                  |
| 36              | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 37.5                             | 4.95                                           | 0.0076                                           | 2248                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 21.0                             | 39.0                                           | 0.0130                                           | 511                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 26.0                                           | 0.0114                                           | 629                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 23.0                             | 19.5                                           | 0.0104                                           | 767                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 13.3                                           | 0.0089                                           | 983                             | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 30.5                             | 7.98                                           | 0.0081                                           | 1481                            | 300/D                  |
| 37              | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 37.5                             | 4.95                                           | 0.0076                                           | 2298                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 21.0                             | 39.0                                           | 0.0130                                           | 518                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 26.0                                           | 0.0114                                           | 640                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 23.0                             | 19.5                                           | 0.0104                                           | 780                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 13.3                                           | 0.0089                                           | 1000                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 30.5                             | 7.98                                           | 0.0081                                           | 1507                            | 300/D                  |
| 38              | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 37.5                             | 4.95                                           | 0.0076                                           | 2341                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 21.5                             | 39.0                                           | 0.0130                                           | 535                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 23.0                             | 26.0                                           | 0.0114                                           | 661                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 19.5                                           | 0.0104                                           | 804                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 13.3                                           | 0.0089                                           | 1032                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 31.0                             | 7.98                                           | 0.0081                                           | 1556                            | 300/D                  |
| 39              | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 38.0                             | 4.95                                           | 0.0076                                           | 2418                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22.0                             | 39.0                                           | 0.0130                                           | 547                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 23.0                             | 26.0                                           | 0.0114                                           | 675                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 24.0                             | 19.5                                           | 0.0104                                           | 823                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 27.0                             | 13.3                                           | 0.0089                                           | 1056                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 31.5                             | 7.98                                           | 0.0081                                           | 1593                            | 300/D                  |
| 40              | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 39.0                             | 4.95                                           | 0.0076                                           | 2475                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22.0                             | 39.0                                           | 0.0130                                           | 554                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 23.0                             | 26.0                                           | 0.0114                                           | 685                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.4                              | 24.0                             | 19.5                                           | 0.0104                                           | 836                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 27.0                             | 13.3                                           | 0.0089                                           | 1072                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 31.5                             | 7.98                                           | 0.0081                                           | 1619                            | 300/D                  |
| 41              | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 39.0                             | 4.95                                           | 0.0076                                           | 2520                            | 300/D                  |
|                 | 0.5                                               | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 39.0                                           | 0.0130                                           | 575                             | 300/D                  |
|                 | 0.75                                              | Flexible       | 0.6                                  | 1.4                              | 24.0                             | 26.0                                           | 0.0114                                           | 723                             | 300/D                  |
|                 | 1                                                 | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 19.5                                           | 0.0104                                           | 918                             | 300/D                  |
|                 | 1.5                                               | Flexible       | 0.6                                  | 1.8                              | 28.0                             | 13.3                                           | 0.0089                                           | 1112                            | 300/D                  |
|                 | 2.5                                               | Flexible       | 0.7                                  | 1.8                              | 32.5                             | 7.98                                           | 0.0081                                           | 1677                            | 300/D                  |
|                 | 4                                                 | Flexible       | 0.8                                  | 2.2                              | 40.0                             | 4.95                                           | 0.0076                                           | 2604                            | 300/D                  |

D = Packing in drum

## CVV-S

### 600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MQ/km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------|------------------------|
| 42              | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 39.0                                           | 0.0130                                           | 584                             | 300/D                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 24.0                             | 26.0                                           | 0.0114                                           | 736                             | 300/D                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 19.5                                           | 0.0104                                           | 933                             | 300/D                  |
|                 | 1.5                                                | Flexible       | 0.6                                  | 1.8                              | 28.0                             | 13.3                                           | 0.0089                                           | 1130                            | 300/D                  |
|                 | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 32.5                             | 7.98                                           | 0.0081                                           | 1708                            | 300/D                  |
| 43              | 4                                                  | Flexible       | 0.8                                  | 2.2                              | 40.0                             | 4.95                                           | 0.0076                                           | 2654                            | 300/D                  |
|                 | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 22.5                             | 39.0                                           | 0.0130                                           | 591                             | 300/D                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 1.4                              | 24.0                             | 26.0                                           | 0.0114                                           | 745                             | 300/D                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 19.5                                           | 0.0104                                           | 945                             | 300/D                  |
|                 | 1.5                                                | Flexible       | 0.6                                  | 1.8                              | 28.0                             | 13.3                                           | 0.0089                                           | 1146                            | 300/D                  |
| 44              | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 32.5                             | 7.98                                           | 0.0081                                           | 1736                            | 300/D                  |
|                 | 4                                                  | Flexible       | 0.8                                  | 2.2                              | 40.0                             | 4.95                                           | 0.0076                                           | 2701                            | 300/D                  |
|                 | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 39.0                                           | 0.0130                                           | 609                             | 300/D                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 26.0                                           | 0.0114                                           | 816                             | 300/D                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 19.5                                           | 0.0104                                           | 970                             | 300/D                  |
| 45              | 1.5                                                | Flexible       | 0.6                                  | 1.8                              | 29.0                             | 13.3                                           | 0.0089                                           | 1178                            | 300/D                  |
|                 | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 34.0                             | 7.98                                           | 0.0081                                           | 1782                            | 300/D                  |
|                 | 4                                                  | Flexible       | 0.8                                  | 2.2                              | 41.0                             | 4.95                                           | 0.0076                                           | 2600                            | 300/D                  |
|                 | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 39.0                                           | 0.0130                                           | 618                             | 300/D                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 26.0                                           | 0.0114                                           | 828                             | 300/D                  |
| 46              | 1                                                  | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 19.5                                           | 0.0104                                           | 986                             | 300/D                  |
|                 | 1.5                                                | Flexible       | 0.6                                  | 1.8                              | 29.0                             | 13.3                                           | 0.0089                                           | 1197                            | 300/D                  |
|                 | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 34.0                             | 7.98                                           | 0.0081                                           | 1813                            | 300/D                  |
|                 | 4                                                  | Flexible       | 0.8                                  | 2.2                              | 41.0                             | 4.95                                           | 0.0076                                           | 2600                            | 300/D                  |
|                 | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 39.0                                           | 0.0130                                           | 628                             | 300/D                  |
| 47              | 0.75                                               | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 26.0                                           | 0.0114                                           | 841                             | 300/D                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 19.5                                           | 0.0104                                           | 1001                            | 300/D                  |
|                 | 1.5                                                | Flexible       | 0.6                                  | 1.8                              | 29.0                             | 13.3                                           | 0.0089                                           | 1217                            | 300/D                  |
|                 | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 34.0                             | 7.98                                           | 0.0081                                           | 1844                            | 300/D                  |
|                 | 4                                                  | Flexible       | 0.8                                  | 2.2                              | 41.0                             | 4.95                                           | 0.0076                                           | 2700                            | 300/D                  |
| 48              | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 23.5                             | 39.0                                           | 0.0130                                           | 637                             | 300/D                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 1.8                              | 26.0                             | 26.0                                           | 0.0114                                           | 853                             | 300/D                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 19.5                                           | 0.0104                                           | 1016                            | 300/D                  |
|                 | 1.5                                                | Flexible       | 0.6                                  | 1.8                              | 29.0                             | 13.3                                           | 0.0089                                           | 1236                            | 300/D                  |
|                 | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 34.0                             | 7.98                                           | 0.0081                                           | 1876                            | 300/D                  |
| 49              | 4                                                  | Flexible       | 0.8                                  | 2.2                              | 41.0                             | 4.95                                           | 0.0076                                           | 2700                            | 300/D                  |
|                 | 0.5                                                | Flexible       | 0.6                                  | 1.4                              | 24.0                             | 39.0                                           | 0.0130                                           | 659                             | 300/D                  |
|                 | 0.75                                               | Flexible       | 0.6                                  | 1.8                              | 26.5                             | 26.0                                           | 0.0114                                           | 866                             | 300/D                  |
|                 | 1                                                  | Flexible       | 0.6                                  | 1.8                              | 27.0                             | 19.5                                           | 0.0104                                           | 1034                            | 300/D                  |
|                 | 1.5                                                | Flexible       | 0.6                                  | 1.8                              | 29.5                             | 13.3                                           | 0.0089                                           | 1256                            | 300/D                  |
| 50              | 2.5                                                | Flexible       | 0.7                                  | 1.8                              | 34.5                             | 7.98                                           | 0.0081                                           | 1905                            | 300/D                  |

D = Packing in drum

This table show only flexible stranded conductor. If you want to have solid or concentric conductor type, please contact with our sales department for CW-S. The overall diameter of cable and cable weight shall be change a little bit more.

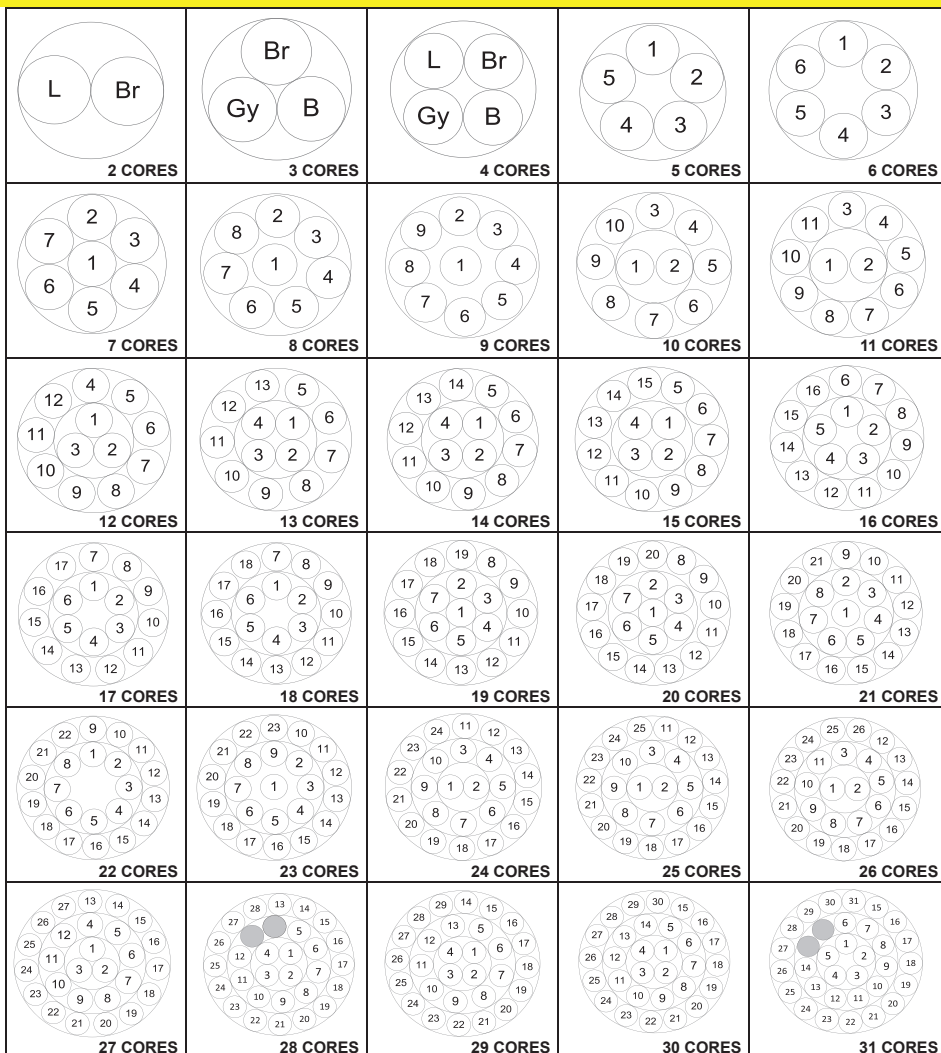
\*Remark : Special protection can be produce.

## CVV or CVV-S

600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH CONTROL CABLE

600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE

### ARRANGEMENT OF CORES FOR CW or CW-S



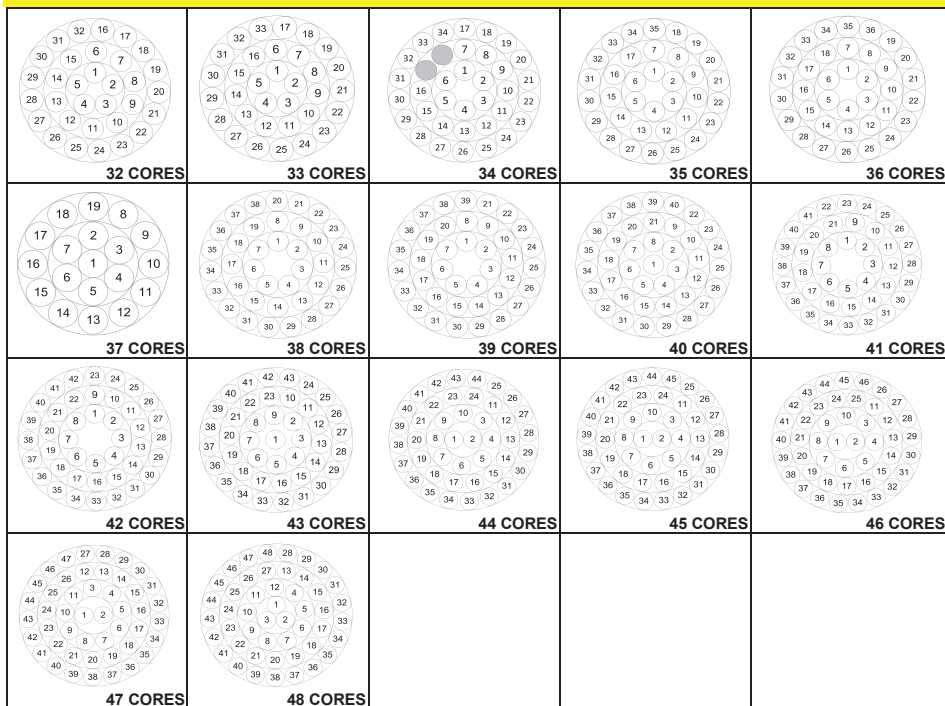
NOTE : Fillers are necessary to fill the cable a substantially circular cross section.  
(If the stranded cores be circle enough, fillers shall not be necessary)

## CVV or CVV-S

600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH CONTROL CABLE

600 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH SHIELD CONTROL CABLE

### ARRANGEMENT OF CORES FOR CW or CW-S



**NOTE :** Fillers are necessary to fill the cable a substantially circular cross section.  
(If the stranded cores be circle enough, fillers shall not be necessary)

**B**



## CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire

**Insulation** : Polyvinyl chloride (PVC)

**Insulation color** : Black

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 60°C

**AC Testing voltage** : 1,000 Volts

**Reference standard** : TIS 118-2522

### Remark :

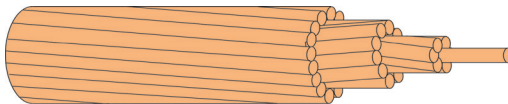
Nowadays the wires are produced according to two kinds of Standard. But such the Ministerial Regulations shall come into force upon their publication in Government Gazette, the production must be in the way of THAI INDUSTRIAL STANDARD.

## APPLICATION

For Automobile

| Nominal cross sectional area | Number and diameter of wires | Conductor diameter approx. | Insulation thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Continuous current rating in free air at 40°C maximum | Cable weight approx. | Standard Length |
|------------------------------|------------------------------|----------------------------|------------------------------|--------------------------|--------------------------------------|-------------------------------------------------------|----------------------|-----------------|
| (mm <sup>2</sup> )           | (No./mm)                     | (mm)                       | (mm)                         | (mm)                     | (Ω/km)                               | (A)                                                   | (kg/km)              | (m)             |
| 0.5                          | 16/0.20                      | 0.95                       | 0.6                          | 2.2                      | 37.1                                 | 11                                                    | 9                    | 100/C           |
| 0.5                          | 7/0.30                       | 0.95                       | 0.6                          | 2.2                      | 37.1                                 | 11                                                    | 9                    | 100/C           |
| 0.75                         | 24/0.20                      | 1.15                       | 0.6                          | 2.4                      | 24.7                                 | 14                                                    | 11                   | 100/C           |
| 0.85                         | 12/0.30                      | 1.20                       | 0.6                          | 2.4                      | 22.0                                 | 15                                                    | 12                   | 100/C           |
| 1                            | 32/0.20                      | 1.30                       | 0.6                          | 2.6                      | 18.5                                 | 16                                                    | 14                   | 100/C           |
| 1.25                         | 40/0.20                      | 1.50                       | 0.6                          | 2.7                      | 14.8                                 | 19                                                    | 17                   | 100/C           |
| 1.25                         | 18/0.30                      | 1.50                       | 0.6                          | 2.7                      | 14.7                                 | 19                                                    | 17                   | 100/C           |
| 1.5                          | 30/0.25                      | 1.60                       | 0.6                          | 2.8                      | 12.7                                 | 20                                                    | 19                   | 100/C           |
| 2                            | 28/0.30                      | 1.90                       | 0.6                          | 3.1                      | 9.42                                 | 25                                                    | 24                   | 100/C           |
| 2.5                          | 50/0.25                      | 2.10                       | 0.7                          | 3.5                      | 7.60                                 | 28                                                    | 30                   | 100/C           |
| 3                            | 44/0.30                      | 2.30                       | 0.7                          | 3.7                      | 6.00                                 | 32                                                    | 37                   | 100/C           |
| 4                            | 56/0.30                      | 2.60                       | 0.8                          | 4.2                      | 4.71                                 | 38                                                    | 47                   | 100/C           |
| 5                            | 70/0.30                      | 3.0                        | 0.8                          | 4.6                      | 3.77                                 | 44                                                    | 57                   | 100/C           |
| 6                            | 84/0.30                      | 3.2                        | 0.9                          | 5.0                      | 3.14                                 | 49                                                    | 69                   | 100/C           |
| 8                            | 63/0.40                      | 3.7                        | 0.9                          | 5.5                      | 2.31                                 | 59                                                    | 88                   | 100/C           |
| 10                           | 84/0.40                      | 4.2                        | 1.1                          | 6.4                      | 1.82                                 | 69                                                    | 114                  | 100/C           |
| 16                           | 126/0.40                     | 5.8                        | 1.1                          | 8.0                      | 1.16                                 | 95                                                    | 173                  | 100/C           |
| 25                           | 196/0.60                     | 7.0                        | 1.4                          | 9.8                      | 0.770                                | 123                                                   | 261                  | 100/C           |
| 35                           | 280/0.40                     | 8.5                        | 1.4                          | 11.3                     | 0.524                                | 158                                                   | 366                  | 100/C           |
| 50                           | 399/0.40                     | 10.9                       | 1.6                          | 14.1                     | 0.357                                | 207                                                   | 537                  | 500/D           |
| 70                           | 361/0.50                     | 12.6                       | 2.0                          | 16.6                     | 0.268                                | 250                                                   | 727                  | 500/D           |
| 95                           | 475/0.50                     | 14.1                       | 2.0                          | 18.1                     | 0.193                                | 305                                                   | 971                  | 500/D           |

C : Packing in Coil  
D : Packing in Drum



### CABLE STRUCTURE

**Conductor** : Hard drawn copper wires, concentric stranded conductor

### TECHNICAL DATA

**Reference standard** : TIS 64-2517

### APPLICATION

For grounding wire

| Nominal cross sectional area | Number and diameter of wires | Conductor diameter approx. | Conductor resistance at 20°C maximum | Breaking strength | Continuous current rating in free air at 40°C maximum | Cable weight approx. | Standard Length |
|------------------------------|------------------------------|----------------------------|--------------------------------------|-------------------|-------------------------------------------------------|----------------------|-----------------|
| (mm <sup>2</sup> )           | (No./mm)                     | (mm)                       | (Ω/km)                               | (kgf)             | (A)                                                   | (kg/km)              | (m)             |
| 10                           | 7/1.35                       | 4.05                       | 1.80548                              | 438               | 90                                                    | 90                   | 2000/D          |
| 16                           | 7/1.70                       | 5.10                       | 1.13857                              | 694               | 125                                                   | 143                  | 2000/D          |
| 25                           | 7/2.14                       | 6.42                       | 0.71851                              | 1,076             | 160                                                   | 226                  | 2000/D          |
| 35                           | 7/2.52                       | 7.56                       | 0.51815                              | 1,459             | 200                                                   | 314                  | 2000/D          |
| 50                           | 7/3.02                       | 9.06                       | 0.35896                              | 2,095             | 250                                                   | 451                  | 2000/D          |
| 50                           | 19/1.78                      | 8.90                       | 0.38252                              | 2,021             | 250                                                   | 427                  | 2000/D          |
| 70                           | 19/2.14                      | 10.70                      | 0.26466                              | 2,921             | 310                                                   | 617                  | 2000/D          |
| 95                           | 19/2.52                      | 12.60                      | 0.19183                              | 3,961             | 380                                                   | 855                  | 2000/D          |
| 120                          | 19/2.85                      | 14.25                      | 0.14922                              | 5,067             | 440                                                   | 1094                 | 1000/D          |
| 150                          | 37/2.25                      | 15.75                      | 0.12384                              | 6,289             | 510                                                   | 1330                 | 1000/D          |
| 185                          | 37/2.52                      | 17.64                      | 0.09873                              | 7,713             | 585                                                   | 1668                 | 1000/D          |
| 240                          | 61/2.25                      | 20.25                      | 0.07528                              | 10,369            | 700                                                   | 2205                 | 500/D           |
| 300                          | 61/2.52                      | 22.68                      | 0.06002                              | 12,717            | 800                                                   | 2766                 | 500/D           |
| 400                          | 61/2.85                      | 25.65                      | 0.04692                              | 16,266            | 900                                                   | 3538                 | 500/D           |
| 500                          | 61/3.20                      | 28.80                      | 0.03703                              | 20,506            | 1110                                                  | 4460                 | 500/D           |

C: Packing in Coil  
D: Packing in Drum



### CABLE STRUCTURE

**Conductor** : Annealed copper wires, concentric stranded conductor

### TECHNICAL DATA

**Reference standard** : IEC 60228 (Same as TIS 2427-2552)

### APPLICATION

Conductor for insulated cables and wires, grounded electrical system.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Number and diameter of wires<br>(No./mm) | Conductor diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Cable weight approx.<br>(kg/km) | Standard Length<br>(m) |
|----------------------------------------------------|----------------|------------------------------------------|------------------------------------|------------------------------------------------|---------------------------------|------------------------|
| 1                                                  | Non-compacted  | 7/0.43                                   | 1.29                               | 18.1                                           | 9                               | 2000/D                 |
| 1.5                                                | Non-compacted  | 7/0.53                                   | 1.59                               | 12.1                                           | 14                              | 2000/D                 |
| 2.5                                                | Non-compacted  | 7/0.67                                   | 2.01                               | 7.41                                           | 22                              | 2000/D                 |
| 4                                                  | Non-compacted  | 7/0.85                                   | 2.55                               | 4.61                                           | 36                              | 2000/D                 |
| 6                                                  | Non-compacted  | 7/1.04                                   | 3.12                               | 3.08                                           | 55                              | 2000/D                 |
| 10                                                 | Non-compacted  | 7/1.33                                   | 4.10                               | 1.83                                           | 90                              | 2000/D                 |
| 16                                                 | Non-compacted  | 7/1.70                                   | 5.10                               | 1.15                                           | 150                             | 2000/D                 |
| 25                                                 | Non-compacted  | 7/2.14                                   | 6.26                               | 0.727                                          | 220                             | 2000/D                 |
| 35                                                 | Non-compacted  | 19/1.53                                  | 7.65                               | 0.524                                          | 320                             | 2000/D                 |
| 50                                                 | Non-compacted  | 19/1.75                                  | 8.73                               | 0.387                                          | 410                             | 2000/D                 |
| 70                                                 | Non-compacted  | 19/2.14                                  | 10.70                              | 0.268                                          | 620                             | 2000/D                 |
| 95                                                 | Non-compacted  | 19/2.52                                  | 12.60                              | 0.193                                          | 850                             | 2000/D                 |
| 120                                                | Non-compacted  | 37/2.03                                  | 14.21                              | 0.153                                          | 1080                            | 1000/D                 |
| 150                                                | Non-compacted  | 37/2.25                                  | 15.75                              | 0.124                                          | 1330                            | 1000/D                 |
| 185                                                | Non-compacted  | 37/2.52                                  | 17.64                              | 0.0991                                         | 1670                            | 1000/D                 |
| 240                                                | Non-compacted  | 61/2.25                                  | 20.25                              | 0.0754                                         | 2200                            | 500/D                  |
| 300                                                | Non-compacted  | 61/2.52                                  | 22.68                              | 0.0601                                         | 2750                            | 500/D                  |
| 400                                                | Non-compacted  | 61/2.85                                  | 25.65                              | 0.0470                                         | 3520                            | 500/D                  |
| 500                                                | Non-compacted  | 61/3.20                                  | 28.80                              | 0.0366                                         | 4440                            | 500/D                  |

D : Packing in Drum

# Aluminium Conductor Cables

## Building Wires and Cables

|        |                                                                                    |    |
|--------|------------------------------------------------------------------------------------|----|
| THWA   | 750 V 70°C ALUMINIUM CONDUCTOR PVC INSULATED, SINGLE CORE (TIS 293-2541)           | C1 |
| THWA-C | 750 V 70°C COMPACTED ALUMINIUM CONDUCTOR PVC INSULATED, SINGLE CORE (TIS 293-2541) | C2 |

## Low Voltage Power Cables

|                      |                                                                                                                                                    |     |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|-----|
| FD-0.6/1KV-AL-CV     | 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT POWER CABLE                                     | C3  |
| FD-0.6/1KV-AL-CV-AWA | 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH ALUMINIUM WIRE ARMORED FLAME RETARDANT POWER CABLE        | C8  |
| FD-0.6/1KV-AL-CV-SWA | 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE | C9  |
| FD-0.6/1KV-AL-CV-STA | 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED STEEL TAPE ARMOUR FLAME RETARDANT POWER CABLE                   | C12 |

C

## High Voltage Power Cables

|              |                                                                     |     |
|--------------|---------------------------------------------------------------------|-----|
| 24KV-OC      | 24kV 90°C PARTIAL INSULATED CABLE<br>(ICEA S-66-524, ICEA S-93-639) | C15 |
| 33KV-OC      | 33kV 90°C PARTIAL INSULATED CABLE<br>(ICEA S-66-524, ICEA S-93-639) | C16 |
| 15KV-CC      | 15kV 90°C SPACED AERIAL CABLE<br>(ICEA S-93-639)                    | C17 |
| 25KV-CC (T1) | 25kV 90°C SPACED AERIAL CABLE<br>(TIS 2341-2564, ICEA S-93-639)     | C18 |
| 35KV-CC (T3) | 35kV 90°C SPACED AERIAL CABLE<br>(TIS 2341-2564 , ICEA S-93-639)    | C19 |

## Bare Conductor

|      |                                                       |     |
|------|-------------------------------------------------------|-----|
| AAC  | ALL ALUMINIUM STRANDED CONDUCTOR<br>(TIS 85-2548)     | C20 |
| ACSR | ALUMINIUM CONDUCTOR STEEL REINFORCED<br>(TIS 85-2548) | C21 |

C

# 750V 70°C ALUMINIUM CONDUCTOR PVC INSULATED, SINGLE CORE


 TIS 293-2541

## CABLE STRUCTURE

**Conductor** : Solid or Stranded hard drawn aluminium wires

**Insulation** : Black polyvinyl chloride (PVC)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 70 °C  
: Circuit voltage not exceeding 750 Volts

**AC Testing voltage** : 2,500 Volts

**Reference standard** : TIS 293-2541, Table 1

## APPLICATION

For low voltage overhead distribution line

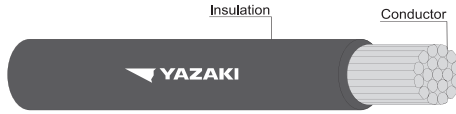
| Nominal cross sectional area | Number and diameter of wires | Insulation thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Insulation resistance at 70°C minimum | Breaking strength of conductor minimum | Continuous current rating in free air at 40°C maximum (A)                         | Cable weight approx. | Standard length |
|------------------------------|------------------------------|------------------------------|--------------------------|--------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------------------------------------------------|----------------------|-----------------|
| (mm <sup>2</sup> )           | (No./mm)                     | (mm)                         | (mm)                     | (Ω/km)                               | (MΩ·km)                               | (N)                                    |  | (kg/km)              | (m)             |
| 10                           | 1/3.49                       | 1.1                          | 6.0                      | 3.08                                 | 0.0078                                | 1,562                                  | 52                                                                                | 51                   | 100/C           |
| 10                           | 7/1.32                       | 1.1                          | 6.5                      | 3.08                                 | 0.0070                                | 1,769                                  | 52                                                                                | 57                   | 100/C           |
| 16                           | 1/4.43                       | 1.1                          | 7.0                      | 1.91                                 | 0.0064                                | 2,445                                  | 70                                                                                | 72                   | 100/C           |
| 16                           | 7/1.68                       | 1.1                          | 8.0                      | 1.91                                 | 0.0058                                | 2,781                                  | 70                                                                                | 82                   | 100/C           |
| 25                           | 7/2.12                       | 1.3                          | 9.5                      | 1.20                                 | 0.0055                                | 4,241                                  | 95                                                                                | 126                  | 100/C           |
| 35                           | 7/2.49                       | 1.3                          | 10.5                     | 0.868                                | 0.0048                                | 5,703                                  | 117                                                                               | 162                  | 100/C           |
| 50                           | 7/2.90                       | 1.5                          | 12.5                     | 0.641                                | 0.0047                                | 7,423                                  | 143                                                                               | 220                  | 100/C           |
| 50                           | 19/1.76                      | 1.5                          | 12.5                     | 0.641                                | 0.0047                                | 8,114                                  | 143                                                                               | 214                  | 100/C           |
| 70                           | 19/2.12                      | 1.5                          | 14.5                     | 0.443                                | 0.0040                                | 11,487                                 | 185                                                                               | 289                  | 100/C           |
| 95                           | 19/2.49                      | 1.7                          | 16.5                     | 0.320                                | 0.0038                                | 15,470                                 | 226                                                                               | 394                  | 100/C           |
| 120                          | 19/2.80                      | 1.7                          | 18.0                     | 0.253                                | 0.0035                                | 18,810                                 | 264                                                                               | 478                  | 500/D           |
| 120                          | 37/2.01                      | 1.7                          | 18.0                     | 0.253                                | 0.0034                                | 20,114                                 | 264                                                                               | 475                  | 500/D           |
| 150                          | 37/2.23                      | 1.9                          | 20.0                     | 0.206                                | 0.0035                                | 24,704                                 | 302                                                                               | 587                  | 500/D           |
| 185                          | 37/2.50                      | 2.1                          | 22.5                     | 0.164                                | 0.0034                                | 30,187                                 | 352                                                                               | 729                  | 500/D           |
| 240                          | 61/2.23                      | 2.3                          | 25.5                     | 0.125                                | 0.0033                                | 38,568                                 | 421                                                                               | 941                  | 500/D           |
| 300                          | 61/2.49                      | 2.5                          | 28.5                     | 0.100                                | 0.0032                                | 46,901                                 | 487                                                                               | 1166                 | 500/D           |
| 400                          | 61/2.82                      | 2.7                          | 31.5                     | 0.0778                               | 0.0031                                | 57,948                                 | 574                                                                               | 1469                 | 500/D           |
| 500                          | 61/3.20                      | 3.1                          | 36.0                     | 0.0605                               | 0.0031                                | 73,194                                 | 675                                                                               | 1902                 | 500/D           |

C : Packing in coil

D : Packing in drum

| Nominal cross sectional area | Number and diameter of wires | A.C. Resistance R | Inductance L | Reactance XL | Impedance Z |
|------------------------------|------------------------------|-------------------|--------------|--------------|-------------|
| (mm <sup>2</sup> )           | (No./mm)                     | (Ω/km)            | (mH/km)      | (Ω/km)       | (Ω/km)      |
| 10                           | 1/3.49                       | 3.7006            | 0.4819       | 0.1514       | 3.7037      |
| 10                           | 7/1.32                       | 3.7006            | 0.4868       | 0.1529       | 3.7038      |
| 16                           | 1/4.43                       | 2.2949            | 0.4650       | 0.1461       | 2.2996      |
| 16                           | 7/1.68                       | 2.2949            | 0.4698       | 0.1476       | 2.2996      |
| 25                           | 7/2.12                       | 1.4419            | 0.4637       | 0.1457       | 1.4492      |
| 35                           | 7/2.49                       | 1.0430            | 0.4539       | 0.1426       | 1.0527      |
| 50                           | 7/2.90                       | 0.7703            | 0.4553       | 0.1430       | 0.7835      |
| 50                           | 19/1.76                      | 0.7703            | 0.4459       | 0.1401       | 0.7829      |
| 70                           | 19/2.12                      | 0.5325            | 0.4359       | 0.1370       | 0.5498      |
| 95                           | 19/2.49                      | 0.3847            | 0.4340       | 0.1363       | 0.4082      |
| 120                          | 19/2.80                      | 0.3043            | 0.4280       | 0.1345       | 0.3327      |
| 120                          | 37/2.01                      | 0.3043            | 0.4255       | 0.1337       | 0.3324      |
| 150                          | 37/2.23                      | 0.2479            | 0.4258       | 0.1338       | 0.2817      |
| 185                          | 37/2.50                      | 0.1976            | 0.4248       | 0.1334       | 0.2384      |
| 240                          | 61/2.23                      | 0.1509            | 0.4150       | 0.1304       | 0.1994      |
| 300                          | 61/2.49                      | 0.1210            | 0.4201       | 0.1320       | 0.1791      |
| 400                          | 61/2.82                      | 0.0946            | 0.4175       | 0.1311       | 0.1617      |
| 500                          | 61/3.20                      | 0.0741            | 0.4184       | 0.1314       | 0.1509      |

## 750V 70°C COMPACTED ALUMINIUM CONDUCTOR PVC INSULATED, SINGLE CORE

 TIS 293-2541


## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium wires

**Insulation** : Black Polyvinyl chloride (PVC)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 70°C  
: Circuit voltage not exceeding 750 Volts

**AC Testing voltage** : 2,500 Volts

**Reference standard** : TIS 293-2541, Table 2

## APPLICATION

For low voltage overhead distribution line

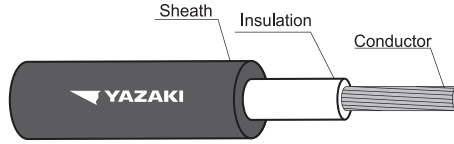
| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Conductor diameter approx.<br>(mm) | Insulation thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 70°C minimum<br>(MΩ·km) | Breaking strength of conductor minimum<br>(N) | Continuous current rating in free air at 40°C maximum (A)<br> | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|----------------------------------------------------|----------------|------------------------------------|--------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|-----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|------------------------|
| 10                                                 | Compacted      | 3.72                               | 1.1                                  | 6.5                              | 3.08                                           | 0.0084                                           | 1,768                                         | 52                                                                                                                                             | 55                              | 100/C                  |
| 16                                                 | Compacted      | 4.69                               | 1.1                                  | 7.5                              | 1.91                                           | 0.0068                                           | 2,734                                         | 69                                                                                                                                             | 80                              | 100/C                  |
| 25                                                 | Compacted      | 5.90                               | 1.3                                  | 9.0                              | 1.20                                           | 0.0064                                           | 4,120                                         | 93                                                                                                                                             | 120                             | 100/C                  |
| 35                                                 | Compacted      | 6.95                               | 1.3                                  | 10.0                             | 0.868                                          | 0.0056                                           | 5,591                                         | 115                                                                                                                                            | 160                             | 100/C                  |
| 50                                                 | Compacted      | 8.01                               | 1.5                                  | 12.0                             | 0.641                                          | 0.0059                                           | 7,313                                         | 141                                                                                                                                            | 210                             | 100/C                  |
| 70                                                 | Compacted      | 9.73                               | 1.5                                  | 13.5                             | 0.443                                          | 0.0050                                           | 10,420                                        | 178                                                                                                                                            | 280                             | 100/C                  |
| 95                                                 | Compacted      | 11.40                              | 1.7                                  | 15.5                             | 0.320                                          | 0.0047                                           | 14,098                                        | 220                                                                                                                                            | 380                             | 100/C                  |
| 120                                                | Compacted      | 12.95                              | 1.7                                  | 17.0                             | 0.253                                          | 0.0042                                           | 18,518                                        | 258                                                                                                                                            | 460                             | 100/C                  |
| 150                                                | Compacted      | 14.27                              | 1.9                                  | 19.0                             | 0.206                                          | 0.0042                                           | 22,457                                        | 294                                                                                                                                            | 560                             | 500/D                  |
| 185                                                | Compacted      | 15.98                              | 2.1                                  | 21.0                             | 0.164                                          | 0.0042                                           | 28,974                                        | 342                                                                                                                                            | 710                             | 500/D                  |
| 240                                                | Compacted      | 18.47                              | 2.3                                  | 24.0                             | 0.125                                          | 0.0040                                           | 37,506                                        | 410                                                                                                                                            | 920                             | 500/D                  |
| 300                                                | Compacted      | 20.68                              | 2.5                                  | 26.5                             | 0.100                                          | 0.0038                                           | 45,642                                        | 475                                                                                                                                            | 1140                            | 500/D                  |
| 400                                                | Compacted      | 23.39                              | 2.7                                  | 29.5                             | 0.0778                                         | 0.0036                                           | 56,992                                        | 560                                                                                                                                            | 1440                            | 500/D                  |
| 500                                                | Compacted      | 26.67                              | 3.1                                  | 34.0                             | 0.0605                                         | 0.0037                                           | 72,195                                        | 659                                                                                                                                            | 1870                            | 500/D                  |

C : Packing in coil  
D : Packing in drum

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|----------------------------------------------------|--------------------------------|----------------------------|---------------------------|--------------------------|
| 10                                                 | 3.7006                         | 0.4930                     | 0.1549                    | 3.7039                   |
| 16                                                 | 2.2949                         | 0.4734                     | 0.1487                    | 2.2997                   |
| 25                                                 | 1.4419                         | 0.4676                     | 0.1469                    | 1.4493                   |
| 35                                                 | 1.0430                         | 0.4584                     | 0.1440                    | 1.0529                   |
| 50                                                 | 0.7703                         | 0.4617                     | 0.1451                    | 0.7838                   |
| 70                                                 | 0.5325                         | 0.4414                     | 0.1387                    | 0.5502                   |
| 95                                                 | 0.3847                         | 0.4377                     | 0.1375                    | 0.4086                   |
| 120                                                | 0.3043                         | 0.4321                     | 0.1358                    | 0.3332                   |
| 150                                                | 0.2479                         | 0.4319                     | 0.1357                    | 0.2826                   |
| 185                                                | 0.1976                         | 0.4290                     | 0.1348                    | 0.2392                   |
| 240                                                | 0.1509                         | 0.4261                     | 0.1339                    | 0.2017                   |
| 300                                                | 0.1210                         | 0.4244                     | 0.1333                    | 0.1801                   |
| 400                                                | 0.0946                         | 0.4206                     | 0.1321                    | 0.1625                   |
| 500                                                | 0.0741                         | 0.4217                     | 0.1325                    | 0.1518                   |

**0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT POWER CABLE**

IEC 60502-1

**CABLE STRUCTURE**

**Conductor** : Compacted stranded hard drawn aluminium

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : Natural (Translucent)

**Sheath** : Black flame retardant polyvinyl chloride (PVC/ST2)

**TECHNICAL DATA**

**Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 1,200 Volts

**Rated voltage** : 600 Volts between Line to Earth  
: 1,000 Volts between Line to Line

**AC Testing voltage** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1  
IEC 60332-3-24 (Cat.C)

**APPLICATION**

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

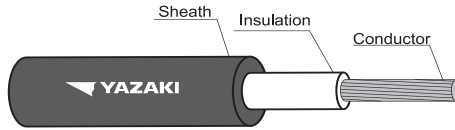
| Number of core | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Continuous current rating in free air at 40°C maximum (A)                                   |                                                                                               |                                                                                              | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------|
|                |                                                    |                |                                      |                                  |                                  |                                                |                                                  | Spaced<br> | Touching<br> | Trefoil<br> |                                                            |                                 |                        |
| 1              | 10                                                 | Compacted      | 0.7                                  | 1.4                              | 8.5                              | 3.08                                           | 1,250                                            | 72                                                                                          | 55                                                                                            | 54                                                                                           | 64                                                         | 83                              | 500/D                  |
|                | 16                                                 | Compacted      | 0.7                                  | 1.4                              | 9.5                              | 1.91                                           | 1,000                                            | 95                                                                                          | 74                                                                                            | 72                                                                                           | 82                                                         | 109                             | 500/D                  |
|                | 25                                                 | Compacted      | 0.9                                  | 1.4                              | 11.5                             | 1.20                                           | 1,050                                            | 128                                                                                         | 100                                                                                           | 97                                                                                           | 107                                                        | 153                             | 500/D                  |
|                | 35                                                 | Compacted      | 0.9                                  | 1.4                              | 12.5                             | 0.868                                          | 900                                              | 156                                                                                         | 122                                                                                           | 119                                                                                          | 128                                                        | 191                             | 500/D                  |
|                | 50                                                 | Compacted      | 1.0                                  | 1.4                              | 13.5                             | 0.641                                          | 850                                              | 189                                                                                         | 149                                                                                           | 145                                                                                          | 151                                                        | 240                             | 500/D                  |
|                | 70                                                 | Compacted      | 1.1                                  | 1.4                              | 15.5                             | 0.443                                          | 800                                              | 240                                                                                         | 190                                                                                           | 184                                                                                          | 185                                                        | 318                             | 500/D                  |
|                | 95                                                 | Compacted      | 1.1                                  | 1.5                              | 17.5                             | 0.320                                          | 650                                              | 295                                                                                         | 236                                                                                           | 228                                                                                          | 221                                                        | 417                             | 500/D                  |
|                | 120                                                | Compacted      | 1.2                                  | 1.6                              | 19.5                             | 0.253                                          | 650                                              | 345                                                                                         | 277                                                                                           | 268                                                                                          | 252                                                        | 521                             | 500/D                  |
|                | 150                                                | Compacted      | 1.4                                  | 1.8                              | 21.5                             | 0.206                                          | 700                                              | 393                                                                                         | 317                                                                                           | 308                                                                                          | 282                                                        | 643                             | 500/D                  |
|                | 185                                                | Compacted      | 1.6                                  | 2.1                              | 24.5                             | 0.164                                          | 700                                              | 458                                                                                         | 371                                                                                           | 360                                                                                          | 321                                                        | 824                             | 500/D                  |
|                | 240                                                | Compacted      | 1.7                                  | 2.3                              | 28.0                             | 0.125                                          | 650                                              | 548                                                                                         | 446                                                                                           | 432                                                                                          | 373                                                        | 1058                            | 500/D                  |
|                | 300                                                | Compacted      | 1.8                                  | 2.4                              | 30.5                             | 0.100                                          | 600                                              | 633                                                                                         | 518                                                                                           | 501                                                                                          | 420                                                        | 1285                            | 500/D                  |
|                | 400                                                | Compacted      | 2.0                                  | 2.7                              | 34.0                             | 0.0778                                         | 600                                              | 745                                                                                         | 612                                                                                           | 591                                                                                          | 481                                                        | 1644                            | 500/D                  |
|                | 500                                                | Compacted      | 2.2                                  | 3.0                              | 38.5                             | 0.0605                                         | 600                                              | 878                                                                                         | 724                                                                                           | 698                                                                                          | 550                                                        | 2107                            | 500/D                  |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

**0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT POWER CABLE**

IEC 60502-1

**CABLE STRUCTURE**

**Conductor** : Compacted stranded hard drawn aluminium

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core Identification** : Natural (Translucent)

**Sheath** : Black flame retardant polyvinyl chloride (PVC/ST2)

**TECHNICAL DATA**

**Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 1,200 Volts

**Rated voltage** : 600 Volts between Line to Earth  
: 1,000 Volts between Line to Line

**AC Testing voltage** : 3,500 Volts

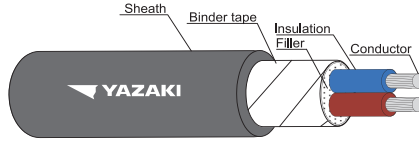
**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1  
IEC 60332-3-24 (Cat.C)

**APPLICATION**

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C.Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance z (Ω/km) |          |         |
|----------------|-------------------------------------------------|-------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                                 | Space                   | Touching | Trefoil | Space                | Touching | Trefoil | Space               | Touching | Trefoil | Space              | Touching | Trefoil |
| C              | 10                                              | 3.9489                  | 3.9489   | 3.9489  | 0.5529               | 0.4143   | 0.3681  | 0.1737              | 0.1302   | 0.1156  | 3.9527             | 3.9510   | 3.9506  |
|                | 16                                              | 2.4488                  | 2.4489   | 2.4489  | 0.5267               | 0.3881   | 0.3419  | 0.1655              | 0.1219   | 0.1074  | 2.4544             | 2.4519   | 2.4512  |
|                | 25                                              | 1.5386                  | 1.5386   | 1.5386  | 0.5141               | 0.3755   | 0.3292  | 0.1615              | 0.1180   | 0.1034  | 1.5470             | 1.5431   | 1.5421  |
|                | 35                                              | 1.1129                  | 1.1130   | 1.1130  | 0.5002               | 0.3616   | 0.3154  | 0.1571              | 0.1136   | 0.0991  | 1.1240             | 1.1188   | 1.1174  |
|                | 50                                              | 0.8219                  | 0.8220   | 0.8220  | 0.4921               | 0.3535   | 0.3072  | 0.1546              | 0.1110   | 0.0965  | 0.8364             | 0.8295   | 0.8277  |
|                | 70                                              | 0.5681                  | 0.5682   | 0.5683  | 0.4707               | 0.3321   | 0.2859  | 0.1479              | 0.1043   | 0.0898  | 0.5871             | 0.5777   | 0.5753  |
|                | 95                                              | 0.4105                  | 0.4106   | 0.4107  | 0.4635               | 0.3248   | 0.2786  | 0.1456              | 0.1020   | 0.0875  | 0.4356             | 0.4231   | 0.4199  |
|                | 120                                             | 0.3247                  | 0.3248   | 0.3250  | 0.4576               | 0.3190   | 0.2728  | 0.1438              | 0.1002   | 0.0857  | 0.3551             | 0.3399   | 0.3361  |
|                | 150                                             | 0.2645                  | 0.2647   | 0.2648  | 0.4571               | 0.3185   | 0.2723  | 0.1436              | 0.1001   | 0.0855  | 0.3010             | 0.2830   | 0.2783  |
|                | 185                                             | 0.2107                  | 0.2110   | 0.2112  | 0.4526               | 0.3139   | 0.2677  | 0.1422              | 0.0986   | 0.0841  | 0.2542             | 0.2329   | 0.2273  |
|                | 240                                             | 0.1609                  | 0.1612   | 0.1615  | 0.4470               | 0.3083   | 0.2621  | 0.1404              | 0.0969   | 0.0823  | 0.2135             | 0.1881   | 0.1813  |
|                | 300                                             | 0.1290                  | 0.1294   | 0.1298  | 0.4432               | 0.3046   | 0.2584  | 0.1392              | 0.0957   | 0.0812  | 0.1898             | 0.1610   | 0.1531  |
| 1              | 400                                             | 0.1008                  | 0.1013   | 0.1018  | 0.4394               | 0.3008   | 0.2546  | 0.1381              | 0.0945   | 0.0800  | 0.1709             | 0.1386   | 0.1295  |
|                | 500                                             | 0.0789                  | 0.0796   | 0.0802  | 0.4365               | 0.2979   | 0.2517  | 0.1371              | 0.0936   | 0.0791  | 0.1582             | 0.1229   | 0.1126  |

# 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT POWER CABLE



IEC 60502-1



## CABLE STRUCTURE

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded hard drawn aluminium            |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Core identification</b> | : Blue, Brown                                        |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Binder tape</b>         | : Non-hygroscopic tape                               |
| <b>Sheath</b>              | : Black flame retardant polyvinyl chloride (PVC/ST2) |

## TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1<br>IEC 60332-3-24 (Cat.C)                     |

## APPLICATION

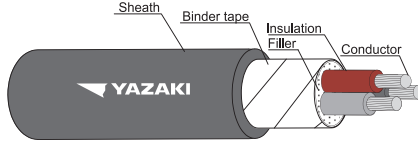
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ-km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------|
| 2               | 10                                                 | Compacted      | 0.7                                  | 1.9                              | 16.0                             | 3.08                                           | 1,250                                            | 61                                                           | 77                                                         | 222                             | 500/D                  |
|                 | 16                                                 | Compacted      | 0.7                                  | 2.1                              | 18.5                             | 1.91                                           | 1,000                                            | 82                                                           | 100                                                        | 308                             | 500/D                  |
|                 | 25                                                 | Compacted      | 0.9                                  | 2.9                              | 23.5                             | 1.20                                           | 1,050                                            | 110                                                          | 130                                                        | 522                             | 500/D                  |
|                 | 35                                                 | Compacted      | 0.9                                  | 3.0                              | 26.0                             | 0.868                                          | 900                                              | 134                                                          | 154                                                        | 643                             | 500/D                  |
|                 | 50                                                 | Compacted      | 1.0                                  | 3.2                              | 29.0                             | 0.641                                          | 850                                              | 164                                                          | 180                                                        | 820                             | 500/D                  |
|                 | 70                                                 | Compacted      | 1.1                                  | 3.6                              | 33.5                             | 0.443                                          | 800                                              | 208                                                          | 220                                                        | 1117                            | 500/D                  |
|                 | 95                                                 | Compacted      | 1.1                                  | 4.0                              | 38.0                             | 0.320                                          | 650                                              | 254                                                          | 365                                                        | 1446                            | 500/D                  |
|                 | 120                                                | Compacted      | 1.2                                  | 4.0                              | 41.5                             | 0.253                                          | 650                                              | 296                                                          | 300                                                        | 1735                            | 500/D                  |
|                 | 150                                                | Compacted      | 1.4                                  | 4.0                              | 45.0                             | 0.206                                          | 700                                              | 338                                                          | 335                                                        | 2042                            | 500/D                  |
|                 | 185                                                | Compacted      | 1.6                                  | 4.0                              | 49.5                             | 0.164                                          | 700                                              | 392                                                          | 380                                                        | 2468                            | 500/D                  |
|                 | 240                                                | Compacted      | 1.7                                  | 4.0                              | 55.0                             | 0.125                                          | 650                                              | 464                                                          | 440                                                        | 3053                            | 500/D                  |
|                 | 300                                                | Compacted      | 1.8                                  | 4.0                              | 60.0                             | 0.100                                          | 600                                              | 531                                                          | 496                                                        | 3635                            | 500/D                  |
|                 | 400                                                | Compacted      | 2.0                                  | 4.0                              | 66.5                             | 0.0778                                         | 600                                              | 619                                                          | 565                                                        | 4476                            | 500/D                  |

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance R<br>(Ω/km) | Inductance L<br>(mH/km) | Reactance XL<br>(Ω/km) | Impedance Z<br>(Ω/km) |
|-----------------|----------------------------------------------------|-----------------------------|-------------------------|------------------------|-----------------------|
| 2               | 10                                                 | 3.9489                      | 0.2774                  | 0.0871                 | 3.9499                |
|                 | 16                                                 | 2.4489                      | 0.2619                  | 0.0823                 | 2.4503                |
|                 | 25                                                 | 1.5386                      | 0.2637                  | 0.0829                 | 1.5409                |
|                 | 35                                                 | 1.1130                      | 0.2567                  | 0.0807                 | 1.1159                |
|                 | 50                                                 | 0.8220                      | 0.2551                  | 0.0801                 | 0.8259                |
|                 | 70                                                 | 0.5683                      | 0.2409                  | 0.0757                 | 0.5733                |
|                 | 95                                                 | 0.4107                      | 0.2337                  | 0.0734                 | 0.4172                |
|                 | 120                                                | 0.3249                      | 0.2325                  | 0.0731                 | 0.3331                |
|                 | 150                                                | 0.2648                      | 0.2337                  | 0.0734                 | 0.2748                |
|                 | 185                                                | 0.2111                      | 0.2333                  | 0.0733                 | 0.2235                |
|                 | 240                                                | 0.1614                      | 0.2300                  | 0.0723                 | 0.1769                |
|                 | 300                                                | 0.1297                      | 0.2278                  | 0.0716                 | 0.1481                |
|                 | 400                                                | 0.1016                      | 0.2260                  | 0.0710                 | 0.1240                |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

**0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT POWER CABLE**


IEC 60502-1

**CABLE STRUCTURE**

**Conductor** : Compacted stranded hard drawn aluminium

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : Brown, Black, Grey

**Filler** : Non-hygroscopic material

**Binder tape** : Non-hygroscopic tape

**Sheath** : Black flame retardant polyvinyl chloride (PVC/ST2)

**TECHNICAL DATA**

**Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 1,200 Volts

**Rated voltage** : 600 Volts between Line to Earth  
: 1,000 Volts between Line to Line

**AC Testing voltage** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1  
IEC 60332-3-24 (Cat.C)

**APPLICATION**

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

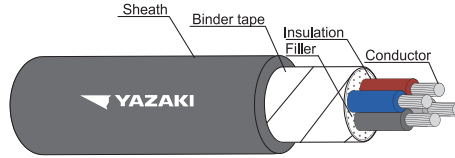
| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MQ·km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------|
| 3               | 10                                                 | Compacted      | 0.7                                  | 2.0                              | 17.0                             | 3.08                                           | 1,250                                            | 51                                                           | 65                                                         | 271                             | 500/D                  |
|                 | 16                                                 | Compacted      | 0.7                                  | 2.2                              | 19.5                             | 1.91                                           | 1,000                                            | 68                                                           | 84                                                         | 378                             | 500/D                  |
|                 | 25                                                 | Compacted      | 0.9                                  | 2.6                              | 24.0                             | 1.20                                           | 1,050                                            | 91                                                           | 110                                                        | 566                             | 500/D                  |
|                 | 35                                                 | Compacted      | 0.9                                  | 2.7                              | 26.5                             | 0.868                                          | 900                                              | 113                                                          | 130                                                        | 701                             | 500/D                  |
|                 | 50                                                 | Compacted      | 1.0                                  | 2.8                              | 29.5                             | 0.641                                          | 850                                              | 136                                                          | 154                                                        | 891                             | 500/D                  |
|                 | 70                                                 | Compacted      | 1.1                                  | 3.0                              | 34.5                             | 0.443                                          | 800                                              | 172                                                          | 188                                                        | 1203                            | 500/D                  |
|                 | 95                                                 | Compacted      | 1.1                                  | 3.3                              | 38.5                             | 0.320                                          | 650                                              | 210                                                          | 225                                                        | 1569                            | 500/D                  |
|                 | 120                                                | Compacted      | 1.2                                  | 3.8                              | 43.5                             | 0.253                                          | 650                                              | 248                                                          | 255                                                        | 2010                            | 500/D                  |
|                 | 150                                                | Compacted      | 1.4                                  | 4.0                              | 47.5                             | 0.206                                          | 700                                              | 283                                                          | 285                                                        | 2435                            | 500/D                  |
|                 | 185                                                | Compacted      | 1.6                                  | 4.0                              | 52.5                             | 0.164                                          | 700                                              | 329                                                          | 325                                                        | 2948                            | 500/D                  |
|                 | 240                                                | Compacted      | 1.7                                  | 4.0                              | 58.5                             | 0.125                                          | 650                                              | 389                                                          | 375                                                        | 3673                            | 500/D                  |
|                 | 300                                                | Compacted      | 1.8                                  | 4.0                              | 64.0                             | 0.100                                          | 600                                              | 446                                                          | 420                                                        | 4407                            | 500/D                  |
|                 | 400                                                | Compacted      | 2.0                                  | 4.0                              | 71.0                             | 0.0778                                         | 600                                              | 519                                                          | 480                                                        | 5446                            | 500/D                  |

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C.Resistance R<br>(Ω/km) | Inductance L<br>(mH/km) | Reactance XL<br>(Ω/km) | Impedance Z<br>(Ω/km) |
|-----------------|----------------------------------------------------|----------------------------|-------------------------|------------------------|-----------------------|
| 3               | 10                                                 | 3.9489                     | 0.2774                  | 0.0871                 | 3.9499                |
|                 | 16                                                 | 2.4489                     | 0.2619                  | 0.0823                 | 2.4503                |
|                 | 25                                                 | 1.5386                     | 0.2637                  | 0.0829                 | 1.5409                |
|                 | 35                                                 | 1.1130                     | 0.2567                  | 0.0807                 | 1.1159                |
|                 | 50                                                 | 0.8220                     | 0.2551                  | 0.0801                 | 0.8259                |
|                 | 70                                                 | 0.5683                     | 0.2409                  | 0.0757                 | 0.5733                |
|                 | 95                                                 | 0.4107                     | 0.2337                  | 0.0734                 | 0.4172                |
|                 | 120                                                | 0.3249                     | 0.2325                  | 0.0731                 | 0.3331                |
|                 | 150                                                | 0.2648                     | 0.2337                  | 0.0734                 | 0.2748                |
|                 | 185                                                | 0.2111                     | 0.2333                  | 0.0733                 | 0.2235                |
|                 | 240                                                | 0.1614                     | 0.2300                  | 0.0723                 | 0.1769                |
|                 | 300                                                | 0.1297                     | 0.2278                  | 0.0716                 | 0.1481                |
|                 | 400                                                | 0.1016                     | 0.2260                  | 0.0710                 | 0.1240                |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

# 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED FLAME RETARDANT POWER CABLE



IEC 60502-1



## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : Blue, Brown, Black, Grey

**Filler** : Non-hygroscopic material

**Binder tape** : Non-hygroscopic tape

**Sheath** : Black flame retardant polyvinyl chloride (PVC/ST2)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 1,200 Volts

**Rated voltage** : 600 Volts between Line to Earth  
: 1,000 Volts between Line to Line

**AC Testing voltage** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1  
IEC 60332-3-24 (Cat.C)

## APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

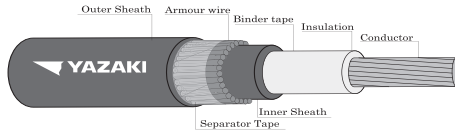
| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ·km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length (m) |
|-----------------|-------------------------------------------------|-----------------------------------|-------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 4               | 10                                              | Compacted 0.7                     | 2.3                           | 19.0                          | 3.08                                        | 1,250                                         | 51                                                        | 65                                                      | 352                          | 500/D               |
|                 | 16                                              | Compacted 0.7                     | 2.5                           | 21.5                          | 1.91                                        | 1,000                                         | 68                                                        | 84                                                      | 486                          | 500/D               |
|                 | 25                                              | Compacted 0.9                     | 3.0                           | 27.0                          | 1.20                                        | 1,050                                         | 91                                                        | 110                                                     | 750                          | 500/D               |
|                 | 35                                              | Compacted 0.9                     | 3.2                           | 30.0                          | 0.868                                       | 900                                           | 113                                                       | 130                                                     | 948                          | 500/D               |
|                 | 50                                              | Compacted 1.0                     | 3.4                           | 33.5                          | 0.641                                       | 850                                           | 136                                                       | 154                                                     | 1211                         | 500/D               |
|                 | 70                                              | Compacted 1.1                     | 3.7                           | 39.0                          | 0.443                                       | 800                                           | 172                                                       | 188                                                     | 1636                         | 500/D               |
|                 | 95                                              | Compacted 1.1                     | 4.0                           | 43.5                          | 0.320                                       | 650                                           | 210                                                       | 225                                                     | 2128                         | 500/D               |
|                 | 120                                             | Compacted 1.2                     | 4.0                           | 48.0                          | 0.253                                       | 650                                           | 248                                                       | 255                                                     | 2589                         | 500/D               |
|                 | 150                                             | Compacted 1.4                     | 4.0                           | 52.0                          | 0.206                                       | 700                                           | 283                                                       | 285                                                     | 3080                         | 500/D               |
|                 | 185                                             | Compacted 1.6                     | 4.0                           | 58.0                          | 0.164                                       | 700                                           | 329                                                       | 325                                                     | 3751                         | 500/D               |
|                 | 240                                             | Compacted 1.7                     | 4.0                           | 64.5                          | 0.125                                       | 650                                           | 389                                                       | 375                                                     | 4700                         | 500/D               |
|                 | 300                                             | Compacted 1.8                     | 4.0                           | 70.5                          | 0.100                                       | 600                                           | 446                                                       | 420                                                     | 5662                         | 500/D               |
|                 | 400                                             | Compacted 2.0                     | 4.0                           | 78.0                          | 0.0778                                      | 600                                           | 519                                                       | 480                                                     | 7041                         | 300/D               |

| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|-----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 4               | 10                                              | 3.9489                   | 0.2774               | 0.0871              | 3.9499             |
|                 | 16                                              | 2.4489                   | 0.2619               | 0.0823              | 2.4503             |
|                 | 25                                              | 1.5386                   | 0.2637               | 0.0829              | 1.5409             |
|                 | 35                                              | 1.1130                   | 0.2567               | 0.0807              | 1.1159             |
|                 | 50                                              | 0.8220                   | 0.2551               | 0.0801              | 0.8259             |
|                 | 70                                              | 0.5683                   | 0.2409               | 0.0757              | 0.5733             |
|                 | 95                                              | 0.4107                   | 0.2337               | 0.0734              | 0.4172             |
|                 | 120                                             | 0.3249                   | 0.2325               | 0.0731              | 0.3331             |
|                 | 150                                             | 0.2648                   | 0.2337               | 0.0734              | 0.2748             |
|                 | 185                                             | 0.2111                   | 0.2333               | 0.0733              | 0.2235             |
|                 | 240                                             | 0.1614                   | 0.2300               | 0.0723              | 0.1769             |
|                 | 300                                             | 0.1297                   | 0.2278               | 0.0716              | 0.1481             |
|                 | 400                                             | 0.1016                   | 0.2260               | 0.0710              | 0.1240             |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

# 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH ALUMINIUM WIRE ARMORED FLAME RETARDANT POWER CABLE



IEC 60502-1



## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium

**Insulation** : Cross-Linked polyethylene (XLPE)  
**Insulation color** : Natural (Translucent)

**Inner sheath** : Black polyvinyl chloride (PVC)

**Aarmor** : Aluminium wires

**Outer sheath** : Black flame retardant polyvinyl chloride (PVC/ST2)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 1,200 Volts

**Rated voltage** : 600 Volts between Line to Earth  
: 1,000 Volts between Line to Line

**AC Testing voltage** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1  
IEC 60332-3-24 (Cat.C)

## APPLICATION

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area<br><br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br><br>(mm) | Inner sheath thickness approx.<br><br>(mm) | Dia. Of inner sheath approx.<br><br>(mm) | Diameter of steel wire armor nominal<br><br>(mm) | Outer sheath thickness nominal<br><br>(mm) | Overall diameter approx.<br><br>(mm) | Conductor resistance at 20°C maximum<br><br>(Ω/km) | Insulation resistance at 20°C minimum<br><br>(MΩ·km) | Continuous current rating in free air at 40°C maximum<br>(A)                                |                                                                                               |                                                                                              | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br><br>(kg/km) | Standard length<br><br>(m) |
|----------------|--------------------------------------------------------|----------------|------------------------------------------|--------------------------------------------|------------------------------------------|--------------------------------------------------|--------------------------------------------|--------------------------------------|----------------------------------------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------|-------------------------------------|----------------------------|
|                |                                                        |                |                                          |                                            |                                          |                                                  |                                            |                                      |                                                    |                                                      | Spaced<br> | Touching<br> | Trefoil<br> |                                                            |                                     |                            |
|                |                                                        |                |                                          |                                            |                                          |                                                  |                                            |                                      |                                                    |                                                      |                                                                                             |                                                                                               |                                                                                              |                                                            |                                     |                            |
| 1              | 10                                                     | Compacted      | 0.7                                      | 1.2                                        | 8.5                                      | 1.25                                             | 1.8                                        | 15.0                                 | 3.08                                               | 1,250                                                | 80                                                                                          | 66                                                                                            | 64                                                                                           | 96                                                         | 264                                 | 500/D                      |
|                | 16                                                     | Compacted      | 0.7                                      | 1.2                                        | 9.0                                      | 1.25                                             | 1.8                                        | 16.0                                 | 1.91                                               | 1,000                                                | 105                                                                                         | 86                                                                                            | 84                                                                                           | 125                                                        | 305                                 | 500/D                      |
|                | 25                                                     | Compacted      | 0.9                                      | 1.2                                        | 11.0                                     | 1.25                                             | 1.8                                        | 17.5                                 | 1.20                                               | 1,050                                                | 139                                                                                         | 114                                                                                           | 111                                                                                          | 161                                                        | 376                                 | 500/D                      |
|                | 35                                                     | Compacted      | 0.9                                      | 1.2                                        | 12.0                                     | 1.25                                             | 1.8                                        | 18.5                                 | 0.868                                              | 900                                                  | 169                                                                                         | 139                                                                                           | 135                                                                                          | 194                                                        | 433                                 | 500/D                      |
|                | 50                                                     | Compacted      | 1.0                                      | 1.2                                        | 13.5                                     | 1.25                                             | 1.8                                        | 20.0                                 | 0.641                                              | 850                                                  | 202                                                                                         | 167                                                                                           | 162                                                                                          | 229                                                        | 503                                 | 500/D                      |
|                | 70                                                     | Compacted      | 1.1                                      | 1.2                                        | 15.0                                     | 1.25                                             | 1.8                                        | 22.0                                 | 0.443                                              | 800                                                  | 253                                                                                         | 209                                                                                           | 203                                                                                          | 281                                                        | 615                                 | 500/D                      |
|                | 95                                                     | Compacted      | 1.1                                      | 1.2                                        | 17.0                                     | 1.60                                             | 1.8                                        | 24.0                                 | 0.320                                              | 650                                                  | 312                                                                                         | 258                                                                                           | 251                                                                                          | 339                                                        | 779                                 | 500/D                      |
|                | 120                                                    | Compacted      | 1.2                                      | 1.2                                        | 18.5                                     | 1.60                                             | 1.8                                        | 26.0                                 | 0.253                                              | 650                                                  | 362                                                                                         | 300                                                                                           | 291                                                                                          | 387                                                        | 904                                 | 500/D                      |
|                | 150                                                    | Compacted      | 1.4                                      | 1.2                                        | 20.5                                     | 1.60                                             | 1.8                                        | 27.5                                 | 0.206                                              | 700                                                  | 410                                                                                         | 341                                                                                           | 331                                                                                          | 432                                                        | 1035                                | 500/D                      |
|                | 185                                                    | Compacted      | 1.6                                      | 1.2                                        | 22.5                                     | 2.00                                             | 1.9                                        | 31.0                                 | 0.164                                              | 700                                                  | 479                                                                                         | 400                                                                                           | 388                                                                                          | 492                                                        | 1314                                | 500/D                      |
|                | 240                                                    | Compacted      | 1.7                                      | 1.2                                        | 25.5                                     | 2.00                                             | 2.0                                        | 34.0                                 | 0.125                                              | 650                                                  | 569                                                                                         | 476                                                                                           | 461                                                                                          | 573                                                        | 1588                                | 500/D                      |
|                | 300                                                    | Compacted      | 1.8                                      | 1.2                                        | 27.5                                     | 2.00                                             | 2.1                                        | 37.0                                 | 0.100                                              | 600                                                  | 655                                                                                         | 550                                                                                           | 532                                                                                          | 648                                                        | 1874                                | 500/D                      |
|                | 400                                                    | Compacted      | 2.0                                      | 1.2                                        | 31.0                                     | 2.00                                             | 2.2                                        | 40.0                                 | 0.0778                                             | 600                                                  | 766                                                                                         | 644                                                                                           | 624                                                                                          | 741                                                        | 2264                                | 500/D                      |
|                | 500                                                    | Compacted      | 2.2                                      | 1.2                                        | 34.5                                     | 2.00                                             | 2.3                                        | 44.0                                 | 0.0605                                             | 600                                                  | 897                                                                                         | 756                                                                                           | 731                                                                                          | 848                                                        | 2744                                | 500/D                      |

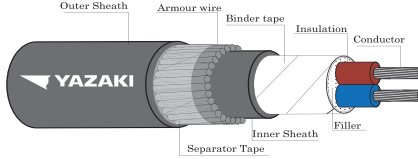
| Number of core | Nominal cross sectional area (mm <sup>2</sup> ) | A.C.Resistance R (Ω/km) |          |         | Inductance L (mH/km) |          |         | Reactance XL (Ω/km) |          |         | Impedance Z (Ω/km) |          |         |
|----------------|-------------------------------------------------|-------------------------|----------|---------|----------------------|----------|---------|---------------------|----------|---------|--------------------|----------|---------|
|                |                                                 | Space                   | Touching | Trefoil | Space                | Touching | Trefoil | Space               | Touching | Trefoil | Space              | Touching | Trefoil |
| 1              | 10                                              | 3.9489                  | 3.9489   | 3.9489  | 0.6639               | 0.5252   | 0.4790  | 0.2086              | 0.1650   | 0.1505  | 3.9544             | 3.9523   | 3.9518  |
|                | 16                                              | 2.4488                  | 2.4488   | 2.4489  | 0.6293               | 0.4907   | 0.4445  | 0.1977              | 0.1542   | 0.1396  | 2.4568             | 2.4537   | 2.4528  |
|                | 25                                              | 1.5386                  | 1.5386   | 1.5386  | 0.6040               | 0.4654   | 0.4191  | 0.1897              | 0.1462   | 0.1317  | 1.5502             | 1.5455   | 1.5442  |
|                | 35                                              | 1.1129                  | 1.1130   | 1.1130  | 0.5835               | 0.4449   | 0.3986  | 0.1833              | 0.1398   | 0.1252  | 1.1279             | 1.1217   | 1.1200  |
|                | 50                                              | 0.8219                  | 0.8220   | 0.8220  | 0.5687               | 0.4301   | 0.3838  | 0.1787              | 0.1351   | 0.1206  | 0.8411             | 0.8330   | 0.8308  |
|                | 70                                              | 0.5681                  | 0.5682   | 0.5682  | 0.5393               | 0.4007   | 0.3544  | 0.1694              | 0.1259   | 0.1114  | 0.5929             | 0.5819   | 0.5790  |
|                | 95                                              | 0.4105                  | 0.4106   | 0.4106  | 0.5278               | 0.3891   | 0.3429  | 0.1658              | 0.1223   | 0.1077  | 0.4427             | 0.4284   | 0.4245  |
|                | 120                                             | 0.3247                  | 0.3247   | 0.3248  | 0.5167               | 0.3781   | 0.3319  | 0.1623              | 0.1188   | 0.1043  | 0.3630             | 0.3458   | 0.3411  |
|                | 150                                             | 0.2645                  | 0.2646   | 0.2647  | 0.5101               | 0.3715   | 0.3252  | 0.1602              | 0.1167   | 0.1022  | 0.3092             | 0.2892   | 0.2837  |
|                | 185                                             | 0.2107                  | 0.2108   | 0.2110  | 0.5082               | 0.3695   | 0.3233  | 0.1596              | 0.1161   | 0.1016  | 0.2644             | 0.2407   | 0.2341  |
|                | 240                                             | 0.1608                  | 0.1610   | 0.1612  | 0.4960               | 0.3573   | 0.3111  | 0.1558              | 0.1123   | 0.0977  | 0.2239             | 0.1963   | 0.1885  |
|                | 300                                             | 0.1289                  | 0.1292   | 0.1294  | 0.4894               | 0.3507   | 0.3045  | 0.1537              | 0.1102   | 0.0957  | 0.2007             | 0.1698   | 0.1609  |
|                | 400                                             | 0.1007                  | 0.1011   | 0.1014  | 0.4836               | 0.3450   | 0.2987  | 0.1519              | 0.1084   | 0.0939  | 0.1823             | 0.1482   | 0.1381  |
|                | 500                                             | 0.0788                  | 0.0793   | 0.0797  | 0.4760               | 0.3373   | 0.2911  | 0.1495              | 0.1060   | 0.0915  | 0.1690             | 0.1324   | 0.1213  |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W

Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

# 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE



IEC 60502-1



## CABLE STRUCTURE

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded hard drawn aluminium            |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Core identification</b> | : Blue, Brown                                        |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Binder tape</b>         | : Non-hygroscopic tape                               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                     |
| <b>Armour</b>              | : Galvanized steel wires                             |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2) |

## TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1<br>IEC 60332-3-24 (Cat.C)                     |

## APPLICATION

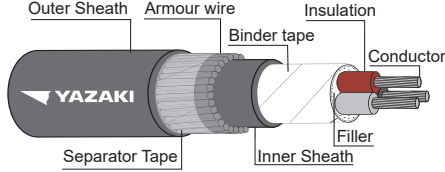
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of cores | Nominal cross sectional area<br>(mm²) | Conductor type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Dia. Of inner sheath approx.<br>(mm) | Diameter of steel wire armor nominal<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|-----------------|---------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------------------|----------------------------------------------|----------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------|
| 2               | 10                                    | Compacted      | 0.7                                  | 1.2                                    | 14.5                                 | 1.25                                         | 1.8                                    | 21.0                             | 3.08                                           | 1,250                                            | 64                                                           | 72                                                         | 696                             | 500/D                  |
|                 | 16                                    | Compacted      | 0.7                                  | 1.2                                    | 16.0                                 | 1.60                                         | 1.8                                    | 23.5                             | 1.91                                           | 1,000                                            | 86                                                           | 94                                                         | 963                             | 500/D                  |
|                 | 25                                    | Compacted      | 0.9                                  | 1.2                                    | 19.5                                 | 1.60                                         | 1.8                                    | 27.0                             | 1.20                                           | 1,050                                            | 114                                                          | 121                                                        | 1206                            | 500/D                  |
|                 | 35                                    | Compacted      | 0.9                                  | 1.2                                    | 22.0                                 | 1.60                                         | 1.9                                    | 29.5                             | 0.868                                          | 900                                              | 141                                                          | 146                                                        | 1395                            | 500/D                  |
|                 | 50                                    | Compacted      | 1.0                                  | 1.2                                    | 24.5                                 | 1.60                                         | 1.9                                    | 32.0                             | 0.641                                          | 850                                              | 169                                                          | 172                                                        | 1629                            | 500/D                  |
|                 | 70                                    | Compacted      | 1.1                                  | 1.2                                    | 28.5                                 | 2.00                                         | 2.1                                    | 37.5                             | 0.443                                          | 800                                              | 213                                                          | 211                                                        | 2280                            | 500/D                  |
|                 | 95                                    | Compacted      | 1.1                                  | 1.2                                    | 31.5                                 | 2.00                                         | 2.2                                    | 41.0                             | 0.320                                          | 650                                              | 260                                                          | 252                                                        | 2673                            | 500/D                  |
|                 | 120                                   | Compacted      | 1.2                                  | 1.2                                    | 35.0                                 | 2.00                                         | 2.4                                    | 45.0                             | 0.253                                          | 650                                              | 302                                                          | 286                                                        | 3122                            | 500/D                  |
|                 | 150                                   | Compacted      | 1.4                                  | 1.3                                    | 39.0                                 | 2.50                                         | 2.5                                    | 50.0                             | 0.206                                          | 700                                              | 344                                                          | 320                                                        | 4037                            | 500/D                  |
|                 | 185                                   | Compacted      | 1.6                                  | 1.4                                    | 43.5                                 | 2.50                                         | 2.7                                    | 55.0                             | 0.164                                          | 700                                              | 396                                                          | 362                                                        | 4773                            | 500/D                  |
|                 | 240                                   | Compacted      | 1.7                                  | 1.5                                    | 49.5                                 | 2.50                                         | 2.9                                    | 61.5                             | 0.125                                          | 650                                              | 469                                                          | 419                                                        | 5736                            | 500/D                  |
|                 | 300                                   | Compacted      | 1.8                                  | 1.6                                    | 54.5                                 | 2.50                                         | 3.1                                    | 67.0                             | 0.100                                          | 600                                              | 537                                                          | 472                                                        | 6676                            | 500/D                  |
|                 | 400                                   | Compacted      | 2.0                                  | 1.7                                    | 61.0                                 | 2.50                                         | 3.3                                    | 74.0                             | 0.0778                                         | 600                                              | 622                                                          | 536                                                        | 7711                            | 300/D                  |

| Number of cores | Nominal cross sectional area<br>(mm²) | A.C. Resistance<br>R<br>(Ω/km) | Inductance<br>L<br>(mH/km) | Reactance<br>XL<br>(Ω/km) | Impedance<br>Z<br>(Ω/km) |
|-----------------|---------------------------------------|--------------------------------|----------------------------|---------------------------|--------------------------|
| 2               | 10                                    | 3.9489                         | 0.2774                     | 0.0871                    | 3.9499                   |
|                 | 16                                    | 2.4489                         | 0.2619                     | 0.0823                    | 2.4503                   |
|                 | 25                                    | 1.5386                         | 0.2637                     | 0.0829                    | 1.5409                   |
|                 | 35                                    | 1.1130                         | 0.2567                     | 0.0807                    | 1.1159                   |
|                 | 50                                    | 0.8220                         | 0.2551                     | 0.0801                    | 0.8259                   |
|                 | 70                                    | 0.5683                         | 0.2409                     | 0.0757                    | 0.5733                   |
|                 | 95                                    | 0.4107                         | 0.2337                     | 0.0734                    | 0.4172                   |
|                 | 120                                   | 0.3249                         | 0.2325                     | 0.0731                    | 0.3331                   |
|                 | 150                                   | 0.2648                         | 0.2337                     | 0.0734                    | 0.2748                   |
|                 | 185                                   | 0.2111                         | 0.2333                     | 0.0733                    | 0.2235                   |
|                 | 240                                   | 0.1614                         | 0.2300                     | 0.0723                    | 0.1769                   |
|                 | 300                                   | 0.1297                         | 0.2278                     | 0.0716                    | 0.1481                   |
|                 | 400                                   | 0.1016                         | 0.2274                     | 0.0714                    | 0.1242                   |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

**0.6/1 kV 90 °C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE**


IEC 60502-1

**CABLE STRUCTURE**

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded hard drawn aluminium            |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Core identification</b> | : Brown, Black, Grey                                 |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Binder tape</b>         | : Non-hygroscopic tape                               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                     |
| <b>Armor</b>               | : Galvanized steel wires                             |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2) |

**TECHNICAL DATA**

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1<br>IEC 60332-3-24 (Cat.C)                     |

**APPLICATION**

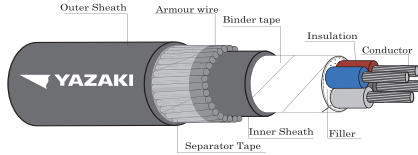
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of cores | Nominal cross sectional area | Conductor type | Insulation thickness nominal | Inner sheath thickness approx. | Dia. of inner sheath approx. | Diameter of steel wire armor nominal | Outer sheath thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Insulation resistance at 20°C minimum | Continuous current rating in free air at 40°C maximum | Continuous current rating in ground at 30°C maximum | Cable weight approx. | Standard length |
|-----------------|------------------------------|----------------|------------------------------|--------------------------------|------------------------------|--------------------------------------|--------------------------------|--------------------------|--------------------------------------|---------------------------------------|-------------------------------------------------------|-----------------------------------------------------|----------------------|-----------------|
|                 | (mm²)                        |                | (mm)                         | (mm)                           | (mm)                         | (mm)                                 | (mm)                           | (mm)                     | (Ω/km)                               | (MΩ·km)                               | (A)                                                   | (A)                                                 | (kg/km)              | (m)             |
| 3               | 10                           | Compacted      | 0.7                          | 1.2                            | 15.0                         | 1.25                                 | 1.8                            | 22.0                     | 3.08                                 | 1,250                                 | 55                                                    | 61                                                  | 761                  | 500/D           |
|                 | 16                           | Compacted      | 0.7                          | 1.2                            | 17.0                         | 1.60                                 | 1.8                            | 24.5                     | 1.91                                 | 1,000                                 | 73                                                    | 79                                                  | 1061                 | 500/D           |
|                 | 25                           | Compacted      | 0.9                          | 1.2                            | 21.0                         | 1.60                                 | 1.8                            | 28.5                     | 1.20                                 | 1,050                                 | 97                                                    | 102                                                 | 1317                 | 500/D           |
|                 | 35                           | Compacted      | 0.9                          | 1.2                            | 23.5                         | 1.60                                 | 1.9                            | 31.0                     | 0.868                                | 900                                   | 120                                                   | 123                                                 | 1562                 | 500/D           |
|                 | 50                           | Compacted      | 1.0                          | 1.2                            | 26.0                         | 2.00                                 | 2.0                            | 35.0                     | 0.641                                | 850                                   | 144                                                   | 145                                                 | 2073                 | 500/D           |
|                 | 70                           | Compacted      | 1.1                          | 1.2                            | 30.5                         | 2.00                                 | 2.2                            | 39.5                     | 0.443                                | 800                                   | 181                                                   | 177                                                 | 2586                 | 500/D           |
|                 | 95                           | Compacted      | 1.1                          | 1.2                            | 33.5                         | 2.00                                 | 2.3                            | 43.0                     | 0.320                                | 650                                   | 221                                                   | 212                                                 | 3054                 | 500/D           |
|                 | 120                          | Compacted      | 1.2                          | 1.3                            | 38.0                         | 2.50                                 | 2.5                            | 49.0                     | 0.253                                | 650                                   | 258                                                   | 242                                                 | 4062                 | 500/D           |
|                 | 150                          | Compacted      | 1.4                          | 1.4                            | 42.0                         | 2.50                                 | 2.6                            | 53.0                     | 0.206                                | 700                                   | 292                                                   | 269                                                 | 4679                 | 500/D           |
|                 | 185                          | Compacted      | 1.6                          | 1.5                            | 47.0                         | 2.50                                 | 2.8                            | 59.0                     | 0.164                                | 700                                   | 336                                                   | 304                                                 | 5554                 | 500/D           |
|                 | 240                          | Compacted      | 1.7                          | 1.6                            | 53.5                         | 2.50                                 | 3.0                            | 65.5                     | 0.125                                | 650                                   | 397                                                   | 351                                                 | 6689                 | 500/D           |
|                 | 300                          | Compacted      | 1.8                          | 1.7                            | 58.5                         | 2.50                                 | 3.2                            | 71.5                     | 0.100                                | 600                                   | 454                                                   | 394                                                 | 7848                 | 300/D           |
|                 | 400                          | Compacted      | 2.0                          | 1.8                            | 66.0                         | 3.15                                 | 3.5                            | 80.5                     | 0.0778                               | 600                                   | 524                                                   | 444                                                 | 10320                | 200/D           |

| Number of cores | Nominal cross sectional area | A.C. Resistance R | Inductance L | Reactance XL | Impedance Z |
|-----------------|------------------------------|-------------------|--------------|--------------|-------------|
|                 | (mm²)                        | (Ω/km)            | (mH/km)      | (Ω/km)       | (Ω/km)      |
| 3               | 10                           | 3.9489            | 0.2774       | 0.0871       | 3.9499      |
|                 | 16                           | 2.4489            | 0.2619       | 0.0823       | 2.4503      |
|                 | 25                           | 1.5387            | 0.2637       | 0.0829       | 1.5409      |
|                 | 35                           | 1.1131            | 0.2567       | 0.0807       | 1.1160      |
|                 | 50                           | 0.8221            | 0.2551       | 0.0801       | 0.8260      |
|                 | 70                           | 0.5684            | 0.2409       | 0.0757       | 0.5734      |
|                 | 95                           | 0.4109            | 0.2337       | 0.0734       | 0.4174      |
|                 | 120                          | 0.3251            | 0.2325       | 0.0731       | 0.3332      |
|                 | 150                          | 0.2650            | 0.2337       | 0.0734       | 0.2750      |
|                 | 185                          | 0.2114            | 0.2333       | 0.0733       | 0.2237      |
|                 | 240                          | 0.1618            | 0.2300       | 0.0723       | 0.1772      |
|                 | 300                          | 0.1301            | 0.2278       | 0.0716       | 0.1485      |
|                 | 400                          | 0.1022            | 0.2274       | 0.0714       | 0.1247      |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

**0.6/1 kV 90 °C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED, WITH GALVANIZED STEEL WIRE ARMORED FLAME RETARDANT POWER CABLE**


IEC 60502-1

**CABLE STRUCTURE**

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded hard drawn aluminium            |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Core identification</b> | : Blue, Brown, Black, Grey                           |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Binder tape</b>         | : Non-hygroscopic tape                               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                     |
| <b>Armor</b>               | : Galvanized steel wires                             |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2) |

**TECHNICAL DATA**

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1<br>IEC 60332-3-24 (Cat.C)                     |

**APPLICATION**

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal (mm) | Inner sheath thickness approx. (mm) | Dia. of inner sheath approx. (mm) | Diameter of steel wire armor nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MQ-km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length (m) |
|-----------------|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|-------------------------------------------|-------------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 4               | 10                                              | Compacted      | 0.7                               | 1.2                                 | 16.5                              | 1.60                                      | 1.8                                 | 24.0                          | 3.08                                        | 1,250                                         | 55                                                        | 61                                                      | 989                          | 500/D               |
|                 | 16                                              | Compacted      | 0.7                               | 1.2                                 | 19.0                              | 1.60                                      | 1.8                                 | 26.0                          | 1.91                                        | 1,000                                         | 73                                                        | 79                                                      | 1195                         | 500/D               |
|                 | 25                                              | Compacted      | 0.9                               | 1.2                                 | 23.0                              | 1.60                                      | 1.9                                 | 30.5                          | 1.20                                        | 1,050                                         | 97                                                        | 102                                                     | 1536                         | 500/D               |
|                 | 35                                              | Compacted      | 0.9                               | 1.2                                 | 25.5                              | 1.60                                      | 2.0                                 | 33.5                          | 0.868                                       | 900                                           | 120                                                       | 123                                                     | 1805                         | 500/D               |
|                 | 50                                              | Compacted      | 1.0                               | 1.2                                 | 29.0                              | 2.00                                      | 2.1                                 | 38.0                          | 0.641                                       | 850                                           | 144                                                       | 145                                                     | 2405                         | 500/D               |
|                 | 70                                              | Compacted      | 1.1                               | 1.2                                 | 33.5                              | 2.00                                      | 2.3                                 | 43.0                          | 0.443                                       | 800                                           | 181                                                       | 177                                                     | 3019                         | 500/D               |
|                 | 95                                              | Compacted      | 1.1                               | 1.3                                 | 37.5                              | 2.50                                      | 2.5                                 | 48.5                          | 0.320                                       | 650                                           | 221                                                       | 212                                                     | 4084                         | 500/D               |
|                 | 120                                             | Compacted      | 1.2                               | 1.4                                 | 42.0                              | 2.50                                      | 2.6                                 | 53.5                          | 0.253                                       | 650                                           | 258                                                       | 242                                                     | 4789                         | 500/D               |
|                 | 150                                             | Compacted      | 1.4                               | 1.5                                 | 46.5                              | 2.50                                      | 2.8                                 | 58.5                          | 0.206                                       | 700                                           | 292                                                       | 269                                                     | 5610                         | 500/D               |
|                 | 185                                             | Compacted      | 1.6                               | 1.6                                 | 52.5                              | 2.50                                      | 3.0                                 | 64.5                          | 0.164                                       | 700                                           | 336                                                       | 304                                                     | 6633                         | 500/D               |
|                 | 240                                             | Compacted      | 1.7                               | 1.7                                 | 59.5                              | 2.50                                      | 3.2                                 | 72.0                          | 0.125                                       | 650                                           | 397                                                       | 351                                                     | 8063                         | 300/D               |
|                 | 300                                             | Compacted      | 1.8                               | 1.8                                 | 65.5                              | 3.15                                      | 3.5                                 | 80.0                          | 0.100                                       | 600                                           | 454                                                       | 394                                                     | 10383                        | 300/D               |
|                 | 400                                             | Compacted      | 2.0                               | 2.0                                 | 73.5                              | 3.15                                      | 3.8                                 | 89.0                          | 0.0778                                      | 600                                           | 524                                                       | 444                                                     | 12521                        | 200/D               |

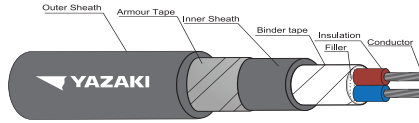
| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|-----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 4               | 10                                              | 3.9489                   | 0.2774               | 0.0871              | 3.9499             |
|                 | 16                                              | 2.4489                   | 0.2619               | 0.0823              | 2.4503             |
|                 | 25                                              | 1.5387                   | 0.2637               | 0.0829              | 1.5409             |
|                 | 35                                              | 1.1131                   | 0.2567               | 0.0807              | 1.1160             |
|                 | 50                                              | 0.8221                   | 0.2551               | 0.0801              | 0.8260             |
|                 | 70                                              | 0.5684                   | 0.2409               | 0.0757              | 0.5734             |
|                 | 95                                              | 0.4109                   | 0.2337               | 0.0734              | 0.4174             |
|                 | 120                                             | 0.3251                   | 0.2325               | 0.0731              | 0.3332             |
|                 | 150                                             | 0.2650                   | 0.2337               | 0.0734              | 0.2750             |
|                 | 185                                             | 0.2114                   | 0.2333               | 0.0733              | 0.2237             |
|                 | 240                                             | 0.1618                   | 0.2300               | 0.0723              | 0.1772             |
|                 | 300                                             | 0.1301                   | 0.2278               | 0.0716              | 0.1485             |
|                 | 400                                             | 0.1022                   | 0.2274               | 0.0714              | 0.1247             |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

**0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED STEEL TAPE ARMOUR FLAME RETARDANT POWER CABLE**

IEC 60502-1

**CABLE STRUCTURE**

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded hard drawn aluminium            |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Core identification</b> | : Blue, Brown                                        |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Binder tape</b>         | : Non-hygroscopic tape                               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                     |
| <b>Armor</b>               | : 2 Layers galvanized steel tape                     |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2) |

**TECHNICAL DATA**

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1<br>IEC 60332-3-24 (Cat.C)                     |

**APPLICATION**

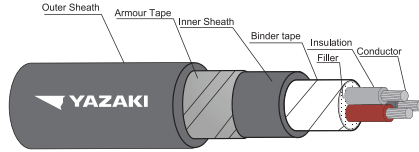
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal (mm) | Inner sheath thickness approx. (mm) | Dia. of inner sheath approx. (mm) | Armor thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MΩ.km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length (m) |
|-----------------|-------------------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|------------------------------|-------------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 2               | 10                                              | Compacted      | 0.7                               | 1.2                                 | 14.5                              | 0.2                          | 1.8                                 | 19.5                          | 3.08                                        | 1,250                                         | 63                                                        | 71                                                      | 492                          | 500/D               |
|                 | 16                                              | Compacted      | 0.7                               | 1.2                                 | 16.0                              | 0.2                          | 1.8                                 | 21.5                          | 1.91                                        | 1,000                                         | 84                                                        | 93                                                      | 597                          | 500/D               |
|                 | 25                                              | Compacted      | 0.9                               | 1.2                                 | 19.5                              | 0.2                          | 1.8                                 | 25.0                          | 1.20                                        | 1,050                                         | 111                                                       | 120                                                     | 780                          | 500/D               |
|                 | 35                                              | Compacted      | 0.9                               | 1.2                                 | 22.0                              | 0.2                          | 1.8                                 | 27.0                          | 0.868                                       | 900                                           | 136                                                       | 144                                                     | 911                          | 500/D               |
|                 | 50                                              | Compacted      | 1.0                               | 1.2                                 | 24.5                              | 0.2                          | 1.9                                 | 30.0                          | 0.641                                       | 850                                           | 164                                                       | 170                                                     | 1106                         | 500/D               |
|                 | 70                                              | Compacted      | 1.1                               | 1.2                                 | 28.5                              | 0.2                          | 2.0                                 | 34.0                          | 0.443                                       | 800                                           | 207                                                       | 208                                                     | 1402                         | 500/D               |
|                 | 95                                              | Compacted      | 1.1                               | 1.2                                 | 31.5                              | 0.5                          | 2.1                                 | 38.5                          | 0.320                                       | 650                                           | 256                                                       | 250                                                     | 1936                         | 500/D               |
|                 | 120                                             | Compacted      | 1.2                               | 1.2                                 | 35.0                              | 0.5                          | 2.3                                 | 42.5                          | 0.253                                       | 650                                           | 297                                                       | 285                                                     | 2319                         | 500/D               |
|                 | 150                                             | Compacted      | 1.4                               | 1.3                                 | 39.0                              | 0.5                          | 2.4                                 | 46.0                          | 0.206                                       | 700                                           | 337                                                       | 318                                                     | 2726                         | 500/D               |
|                 | 185                                             | Compacted      | 1.6                               | 1.4                                 | 43.5                              | 0.5                          | 2.6                                 | 51.5                          | 0.164                                       | 700                                           | 388                                                       | 359                                                     | 3300                         | 500/D               |
|                 | 240                                             | Compacted      | 1.7                               | 1.5                                 | 49.5                              | 0.5                          | 2.8                                 | 57.5                          | 0.125                                       | 650                                           | 461                                                       | 417                                                     | 4082                         | 500/D               |
|                 | 300                                             | Compacted      | 1.8                               | 1.6                                 | 54.5                              | 0.5                          | 2.9                                 | 63.0                          | 0.100                                       | 600                                           | 530                                                       | 470                                                     | 4821                         | 500/D               |
|                 | 400                                             | Compacted      | 2.0                               | 1.7                                 | 61.0                              | 0.5                          | 3.2                                 | 70.5                          | 0.0778                                      | 600                                           | 615                                                       | 535                                                     | 5943                         | 500/D               |

| Number of cores | Nominal cross sectional area (mm <sup>2</sup> ) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|-----------------|-------------------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 2               | 10                                              | 3.9489                   | 0.2774               | 0.0871              | 3.9499             |
|                 | 16                                              | 2.4489                   | 0.2619               | 0.0823              | 2.4503             |
|                 | 25                                              | 1.5386                   | 0.2637               | 0.0829              | 1.5409             |
|                 | 35                                              | 1.1130                   | 0.2567               | 0.0807              | 1.1159             |
|                 | 50                                              | 0.8220                   | 0.2551               | 0.0801              | 0.8259             |
|                 | 70                                              | 0.5683                   | 0.2409               | 0.0757              | 0.5733             |
|                 | 95                                              | 0.4107                   | 0.2337               | 0.0734              | 0.4172             |
|                 | 120                                             | 0.3249                   | 0.2325               | 0.0731              | 0.3331             |
|                 | 150                                             | 0.2648                   | 0.2337               | 0.0734              | 0.2748             |
|                 | 185                                             | 0.2111                   | 0.2333               | 0.0733              | 0.2235             |
|                 | 240                                             | 0.1614                   | 0.2300               | 0.0723              | 0.1769             |
|                 | 300                                             | 0.1297                   | 0.2278               | 0.0716              | 0.1481             |
|                 | 400                                             | 0.1016                   | 0.2274               | 0.0714              | 0.1242             |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

**0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED STEEL TAPE ARMOUR FLAME RETARDANT POWER CABLE**


IEC 60502-1

**CABLE STRUCTURE**

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded hard drawn aluminium            |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Core identification</b> | : Brown, Black, Grey                                 |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Binder tape</b>         | : Non-hygroscopic tape                               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                     |
| <b>Armor</b>               | : 2 Layers galvanized steel tape                     |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2) |

**TECHNICAL DATA**

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1<br>IEC 60332-3-24 (Cat.C)                     |

**APPLICATION**

For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Inner sheath thickness approx.<br>(mm) | Dia. of inner sheath approx.<br>(mm) | Armor thickness nominal<br>(mm) | Outer sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 20°C minimum<br>(MΩ·km) | Continuous current rating in free air at 40°C maximum<br>(A) | Continuous current rating in ground at 30°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|-----------------|----------------------------------------------------|----------------|--------------------------------------|----------------------------------------|--------------------------------------|---------------------------------|----------------------------------------|----------------------------------|------------------------------------------------|--------------------------------------------------|--------------------------------------------------------------|------------------------------------------------------------|---------------------------------|------------------------|
| 3               | 10                                                 | Compacted      | 0.7                                  | 1.2                                    | 15.0                                 | 0.2                             | 1.8                                    | 20.5                             | 3.08                                           | 1,250                                            | 53                                                           | 60                                                         | 549                             | 500/D                  |
|                 | 16                                                 | Compacted      | 0.7                                  | 1.2                                    | 17.0                                 | 0.2                             | 1.8                                    | 22.5                             | 1.91                                           | 1,000                                            | 71                                                           | 78                                                         | 675                             | 500/D                  |
|                 | 25                                                 | Compacted      | 0.9                                  | 1.2                                    | 21.0                                 | 0.2                             | 1.8                                    | 26.0                             | 1.20                                           | 1,050                                            | 95                                                           | 101                                                        | 873                             | 500/D                  |
|                 | 35                                                 | Compacted      | 0.9                                  | 1.2                                    | 23.5                                 | 0.2                             | 1.8                                    | 28.5                             | 0.868                                          | 900                                              | 116                                                          | 121                                                        | 1030                            | 500/D                  |
|                 | 50                                                 | Compacted      | 1.0                                  | 1.2                                    | 26.0                                 | 0.2                             | 1.9                                    | 31.5                             | 0.641                                          | 850                                              | 140                                                          | 143                                                        | 1260                            | 500/D                  |
|                 | 70                                                 | Compacted      | 1.1                                  | 1.2                                    | 30.5                                 | 0.2                             | 2.1                                    | 36.5                             | 0.443                                          | 800                                              | 176                                                          | 176                                                        | 1620                            | 500/D                  |
|                 | 95                                                 | Compacted      | 1.1                                  | 1.2                                    | 33.5                                 | 0.5                             | 2.2                                    | 40.5                             | 0.320                                          | 650                                              | 217                                                          | 211                                                        | 2248                            | 500/D                  |
|                 | 120                                                | Compacted      | 1.2                                  | 1.3                                    | 38.0                                 | 0.5                             | 2.4                                    | 45.5                             | 0.253                                          | 650                                              | 252                                                          | 240                                                        | 2728                            | 500/D                  |
|                 | 150                                                | Compacted      | 1.4                                  | 1.4                                    | 42.0                                 | 0.5                             | 2.5                                    | 49.5                             | 0.206                                          | 700                                              | 287                                                          | 268                                                        | 3212                            | 500/D                  |
|                 | 185                                                | Compacted      | 1.6                                  | 1.5                                    | 47.0                                 | 0.5                             | 2.7                                    | 55.0                             | 0.164                                          | 700                                              | 331                                                          | 304                                                        | 3903                            | 500/D                  |
|                 | 240                                                | Compacted      | 1.7                                  | 1.6                                    | 53.5                                 | 0.5                             | 2.9                                    | 61.5                             | 0.125                                          | 650                                              | 393                                                          | 352                                                        | 4832                            | 500/D                  |
|                 | 300                                                | Compacted      | 1.8                                  | 1.7                                    | 58.5                                 | 0.5                             | 3.1                                    | 67.5                             | 0.100                                          | 600                                              | 451                                                          | 397                                                        | 5789                            | 500/D                  |
|                 | 400                                                | Compacted      | 2.0                                  | 1.8                                    | 66.0                                 | 0.5                             | 3.3                                    | 75.5                             | 0.0778                                         | 600                                              | 525                                                          | 453                                                        | 7087                            | 300/D                  |

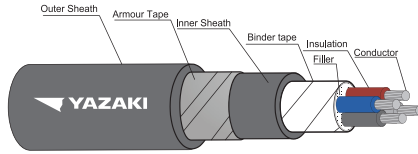
| Number of cores | Nominal cross sectional area<br>(mm <sup>2</sup> ) | A.C. Resistance R<br>(Ω/km) | Inductance L<br>(mH/km) | Reactance XL<br>(Ω/km) | Impedance Z<br>(Ω/km) |
|-----------------|----------------------------------------------------|-----------------------------|-------------------------|------------------------|-----------------------|
| 4               | 10                                                 | 3.9489                      | 0.2774                  | 0.0871                 | 3.9499                |
|                 | 16                                                 | 2.4489                      | 0.2619                  | 0.0823                 | 2.4503                |
|                 | 25                                                 | 1.5387                      | 0.2637                  | 0.0829                 | 1.5409                |
|                 | 35                                                 | 1.1131                      | 0.2567                  | 0.0807                 | 1.1160                |
|                 | 50                                                 | 0.8221                      | 0.2551                  | 0.0801                 | 0.8260                |
|                 | 70                                                 | 0.5684                      | 0.2409                  | 0.0757                 | 0.5734                |
|                 | 95                                                 | 0.4109                      | 0.2337                  | 0.0734                 | 0.4174                |
|                 | 120                                                | 0.3251                      | 0.2325                  | 0.0731                 | 0.3332                |
|                 | 150                                                | 0.2650                      | 0.2337                  | 0.0734                 | 0.2750                |
|                 | 185                                                | 0.2114                      | 0.2333                  | 0.0733                 | 0.2237                |
|                 | 240                                                | 0.1618                      | 0.2300                  | 0.0723                 | 0.1772                |
|                 | 300                                                | 0.1301                      | 0.2278                  | 0.0716                 | 0.1485                |
|                 | 400                                                | 0.1022                      | 0.2274                  | 0.0714                 | 0.1247                |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

# 0.6/1 kV 90°C ALUMINIUM CONDUCTOR CROSS-LINKED POLYETHYLENE INSULATED PVC SHEATHED STEEL TAPE ARMOUR FLAME RETARDANT POWER CABLE

IEC 60502-1



## CABLE STRUCTURE

|                            |                                                      |
|----------------------------|------------------------------------------------------|
| <b>Conductor</b>           | : Compacted stranded hard drawn aluminium            |
| <b>Insulation</b>          | : Cross-Linked polyethylene (XLPE)                   |
| <b>Core identification</b> | : Blue, Brown, Black, Grey                           |
| <b>Filler</b>              | : Non-hygroscopic material                           |
| <b>Binder tape</b>         | : Non-hygroscopic tape                               |
| <b>Inner sheath</b>        | : Black polyvinyl chloride (PVC)                     |
| <b>Armor</b>               | : 2 Layers galvanized steel tape                     |
| <b>Outer sheath</b>        | : Black flame retardant polyvinyl chloride (PVC/ST2) |

## TECHNICAL DATA

|                           |                                                                                     |
|---------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>     | : Maximum conductor temperature 90°C<br>: Circuit voltage not exceeding 1,200 Volts |
| <b>Rated voltage</b>      | : 600 Volts between Line to Earth<br>: 1,000 Volts between Line to Line             |
| <b>AC Testing voltage</b> | : 3,500 Volts                                                                       |
| <b>Reference standard</b> | : IEC 60502-1, IEC 60228, IEC 60332-1<br>IEC 60332-3-24 (Cat.C)                     |

## APPLICATION

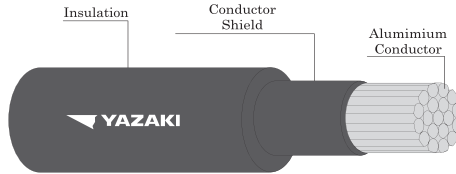
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of cores | Nominal cross sectional area (mm²) | Conductor type | Insulation thickness nominal (mm) | Inner sheath thickness approx. (mm) | Dia. of inner sheath approx. (mm) | Armor thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 20°C minimum (MQ-km) | Continuous current rating in free air at 40°C maximum (A) | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length (m) |
|-----------------|------------------------------------|----------------|-----------------------------------|-------------------------------------|-----------------------------------|------------------------------|-------------------------------------|-------------------------------|---------------------------------------------|-----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------|------------------------------|---------------------|
| 4               | 10                                 | Compacted      | 0.7                               | 1.2                                 | 16.5                              | 0.2                          | 1.8                                 | 22.0                          | 3.08                                        | 1,250                                         | 53                                                        | 60                                                      | 625                          | 500/D               |
|                 | 16                                 | Compacted      | 0.7                               | 1.2                                 | 19.0                              | 0.2                          | 1.8                                 | 24.0                          | 1.91                                        | 1,000                                         | 71                                                        | 78                                                      | 779                          | 500/D               |
|                 | 25                                 | Compacted      | 0.9                               | 1.2                                 | 23.0                              | 0.2                          | 1.8                                 | 28.5                          | 1.20                                        | 1,050                                         | 95                                                        | 101                                                     | 1032                         | 500/D               |
|                 | 35                                 | Compacted      | 0.9                               | 1.2                                 | 25.5                              | 0.2                          | 1.9                                 | 31.0                          | 0.868                                       | 900                                           | 116                                                       | 121                                                     | 1248                         | 500/D               |
|                 | 50                                 | Compacted      | 1.0                               | 1.2                                 | 29.0                              | 0.2                          | 2.0                                 | 34.5                          | 0.641                                       | 850                                           | 140                                                       | 143                                                     | 1531                         | 500/D               |
|                 | 70                                 | Compacted      | 1.1                               | 1.2                                 | 33.5                              | 0.5                          | 2.2                                 | 40.5                          | 0.443                                       | 800                                           | 176                                                       | 176                                                     | 2237                         | 500/D               |
|                 | 95                                 | Compacted      | 1.1                               | 1.3                                 | 37.5                              | 0.5                          | 2.4                                 | 45.0                          | 0.320                                       | 650                                           | 217                                                       | 211                                                     | 2790                         | 500/D               |
|                 | 120                                | Compacted      | 1.2                               | 1.4                                 | 42.0                              | 0.5                          | 2.5                                 | 49.5                          | 0.253                                       | 650                                           | 252                                                       | 240                                                     | 3374                         | 500/D               |
|                 | 150                                | Compacted      | 1.4                               | 1.5                                 | 46.5                              | 0.5                          | 2.7                                 | 54.5                          | 0.206                                       | 700                                           | 287                                                       | 268                                                     | 4030                         | 500/D               |
|                 | 185                                | Compacted      | 1.6                               | 1.6                                 | 52.5                              | 0.5                          | 2.9                                 | 61.0                          | 0.164                                       | 700                                           | 331                                                       | 304                                                     | 4893                         | 500/D               |
|                 | 240                                | Compacted      | 1.7                               | 1.7                                 | 59.5                              | 0.5                          | 3.1                                 | 68.5                          | 0.125                                       | 650                                           | 393                                                       | 352                                                     | 6094                         | 500/D               |
|                 | 300                                | Compacted      | 1.8                               | 1.8                                 | 65.5                              | 0.5                          | 3.3                                 | 75.0                          | 0.100                                       | 600                                           | 451                                                       | 397                                                     | 7293                         | 300/D               |
|                 | 400                                | Compacted      | 2.0                               | 2.0                                 | 73.5                              | 0.5                          | 3.6                                 | 83.5                          | 0.0778                                      | 600                                           | 525                                                       | 453                                                     | 9054                         | 300/D               |

| Number of cores | Nominal cross sectional area (mm²) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|-----------------|------------------------------------|--------------------------|----------------------|---------------------|--------------------|
| 4               | 10                                 | 3.9489                   | 0.2774               | 0.0871              | 3.9499             |
|                 | 16                                 | 2.4489                   | 0.2619               | 0.0823              | 2.4503             |
|                 | 25                                 | 1.5387                   | 0.2637               | 0.0829              | 1.5409             |
|                 | 35                                 | 1.1131                   | 0.2567               | 0.0807              | 1.1160             |
|                 | 50                                 | 0.8221                   | 0.2551               | 0.0801              | 0.8260             |
|                 | 70                                 | 0.5684                   | 0.2409               | 0.0757              | 0.5734             |
|                 | 95                                 | 0.4109                   | 0.2337               | 0.0734              | 0.4174             |
|                 | 120                                | 0.3251                   | 0.2325               | 0.0731              | 0.3332             |
|                 | 150                                | 0.2650                   | 0.2337               | 0.0734              | 0.2750             |
|                 | 185                                | 0.2114                   | 0.2333               | 0.0733              | 0.2237             |
|                 | 240                                | 0.1618                   | 0.2300               | 0.0723              | 0.1772             |
|                 | 300                                | 0.1301                   | 0.2278               | 0.0716              | 0.1485             |
|                 | 400                                | 0.1022                   | 0.2274               | 0.0714              | 0.1247             |

**Remark:** Thermal resistivity of soil 1.2 K.m/W or °C.m/W  
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

**24KV 90°C PARTIAL INSULATED CABLE**

 ICEA S-66-524  
 ICEA S-93-639

**CABLE STRUCTURE**

- Conductor** : Compact round stranded hard drawn aluminium wires
- Conductor screen** : Semi-Conductive Cross-linked polyethylene (XLPE) compound cross-linked
- Insulation** : Black Cross-linked polyethylene (XLPE)

**TECHNICAL DATA**

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 24,000 Volts
- AC Testing voltage** : 11,000 Volts
- Reference standard** : ICEA S-66-524, ICEA S-93-639

**APPLICATION**

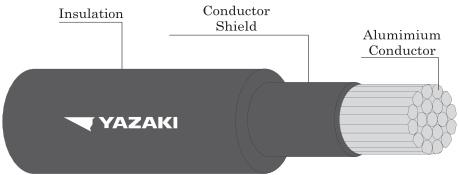
For aerial power transmission and distribution line.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Number of wire minimum<br>(No.) | Diameter of conductor Approx.<br>(mm) | Insulation thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 15.6°C minimum<br>(MΩ·km) | Breaking strength of conductor minimum<br>(N) | Continuous current rating in free air at 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|----------------------------------------------------|---------------------------------|---------------------------------------|--------------------------------------|----------------------------------|------------------------------------------------|----------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------|---------------------------------|------------------------|
| 35                                                 | 6                               | 7.05                                  | 1.8                                  | 12.0                             | 0.868                                          | 900                                                | 5,591                                         | 140                                                          | 170                             | 1000/D                 |
| 50                                                 | 6                               | 8.11                                  | 2.2                                  | 14.0                             | 0.641                                          | 880                                                | 7,313                                         | 170                                                          | 220                             | 1000/D                 |
| 70                                                 | 12                              | 9.73                                  | 2.1                                  | 15.0                             | 0.443                                          | 800                                                | 10,420                                        | 215                                                          | 290                             | 1000/D                 |
| 95                                                 | 15                              | 11.43                                 | 2.5                                  | 18.0                             | 0.320                                          | 750                                                | 14,098                                        | 270                                                          | 400                             | 1000/D                 |
| 120                                                | 15                              | 13.05                                 | 2.6                                  | 19.5                             | 0.253                                          | 700                                                | 18,518                                        | 310                                                          | 490                             | 1000/D                 |
| 150                                                | 15                              | 14.37                                 | 2.6                                  | 21.0                             | 0.206                                          | 650                                                | 22,457                                        | 355                                                          | 550                             | 1000/D                 |
| 185                                                | 30                              | 16.08                                 | 2.55                                 | 23.0                             | 0.164                                          | 600                                                | 28,974                                        | 410                                                          | 700                             | 1000/D                 |

D : Packing in drum

**C**

33KV 90°C PARTIAL INSULATED CABLE



ICEA S-66-524  
ICEA S-93-639

CABLE STRUCTURE

- Conductor** : Compact round stranded hard drawn aluminium wires
- Conductor screen** : Semi-Conductive Cross-linked polyethylene (XLPE) compound
- Insulation** : Black Cross-linked polyethylene (XLPE)

TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 33,000 Volts
- AC Testing voltage** : 17,000 Volts
- Reference standard** : ICEA S-66-524, ICEA S-93-639

APPLICATION

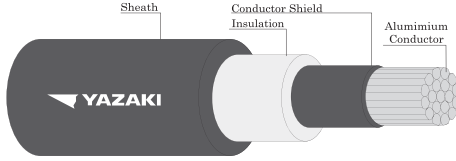
For aerial power transmission and distribution line.

| Nominal cross sectional area | Number of wire minimum | Diameter of conductor Approx. | Insulation thickness nominal | Overall diameter approx. | Conductor resistance at 20°C maximum | Insulation resistance at 15.6°C minimum | Breaking strength of conductor minimum | Continuous current rating in free air at 40°C maximum | Cable weight approx. | Standard length |
|------------------------------|------------------------|-------------------------------|------------------------------|--------------------------|--------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------------------|----------------------|-----------------|
| (mm²)                        | (No.)                  | (mm)                          | (mm)                         | (mm)                     | (Ω/km)                               | (MΩ·km)                                 | (N)                                    | (A)                                                   | (kg/km)              | (m)             |
| 35                           | 6                      | 7.05                          | 3.0                          | 14.5                     | 0.868                                | 1,350                                   | 5,591                                  | 145                                                   | 220                  | 1000/D          |
| 50                           | 6                      | 8.11                          | 3.2                          | 16.5                     | 0.641                                | 1,300                                   | 7,313                                  | 175                                                   | 280                  | 1000/D          |
| 70                           | 12                     | 9.73                          | 3.2                          | 18.0                     | 0.443                                | 1,200                                   | 10,420                                 | 220                                                   | 350                  | 1000/D          |
| 95                           | 15                     | 11.43                         | 3.5                          | 20.0                     | 0.320                                | 1,100                                   | 14,098                                 | 270                                                   | 460                  | 1000/D          |
| 120                          | 15                     | 13.05                         | 3.6                          | 22.0                     | 0.253                                | 1,000                                   | 18,518                                 | 315                                                   | 550                  | 1000/D          |
| 150                          | 15                     | 14.37                         | 3.6                          | 23.0                     | 0.206                                | 950                                     | 22,457                                 | 360                                                   | 650                  | 1000/D          |
| 185                          | 30                     | 16.08                         | 3.9                          | 26.0                     | 0.164                                | 900                                     | 28,974                                 | 415                                                   | 800                  | 1000/D          |

D : Packing in drum

## 15KV 90°C SPACED AERIAL CABLE

ICEA S-93-639



## CABLE STRUCTURE

- Conductor** : Compact round stranded hard drawn aluminium wires
- Conductor screen** : Semi-Conductive Cross-linked polyethylene (XLPE) compound
- Insulation** : Cross-linked polyethylene (XLPE)
- Sheath** : Black Cross-linked polyethylene (XLPE)

## TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 15,000 Volts
- AC Testing voltage** : 27,000 Volts
- Reference standard** : ICEA S-93-639

## APPLICATION

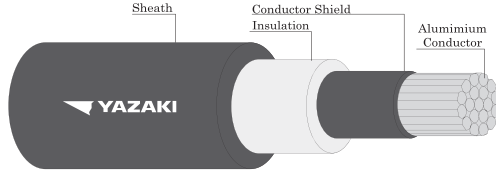
For aerial power transmission and distribution line.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Diameter of conductor Approx.<br>(mm) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 15.6°C minimum<br>(MΩ·km) | Breaking strength of conductor minimum<br>(N) | Continuous current rating in free air at 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|----------------------------------------------------|----------------|---------------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|----------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------|---------------------------------|------------------------|
| 35                                                 | Compacted      | 6.95                                  | 1.91                                 | 1.91                             | 16.5                             | 0.868                                          | 1,750                                              | 5,591                                         | 164                                                          | 255                             | 500/D                  |
| 50                                                 | Compacted      | 8.01                                  | 1.91                                 | 1.91                             | 18.0                             | 0.641                                          | 1,550                                              | 7,313                                         | 198                                                          | 305                             | 500/D                  |
| 70                                                 | Compacted      | 9.73                                  | 1.91                                 | 1.91                             | 19.5                             | 0.443                                          | 1,400                                              | 10,420                                        | 250                                                          | 385                             | 500/D                  |
| 95                                                 | Compacted      | 11.40                                 | 1.91                                 | 1.91                             | 21.5                             | 0.320                                          | 1,250                                              | 14,098                                        | 306                                                          | 477                             | 500/D                  |
| 120                                                | Compacted      | 12.95                                 | 1.91                                 | 1.91                             | 23.0                             | 0.253                                          | 1,150                                              | 18,518                                        | 355                                                          | 570                             | 500/D                  |
| 150                                                | Compacted      | 14.27                                 | 1.91                                 | 1.91                             | 24.0                             | 0.206                                          | 1,050                                              | 22,457                                        | 405                                                          | 662                             | 500/D                  |
| 185                                                | Compacted      | 15.98                                 | 1.91                                 | 1.91                             | 26.0                             | 0.164                                          | 980                                                | 28,974                                        | 468                                                          | 792                             | 500/D                  |
| 240                                                | Compacted      | 18.47                                 | 1.91                                 | 1.91                             | 28.5                             | 0.125                                          | 850                                                | 37,506                                        | 560                                                          | 988                             | 500/D                  |

D : Packing in drum

C

## 25KV 90°C SPACED AERIAL CABLE



ICEA S-93-639

 TIS 2341-2564

## CABLE STRUCTURE

- Conductor** : Compact round stranded hard drawn aluminium wires
- Conductor screen** : Semi-Conductive Cross-linked polyethylene (XLPE) compound
- Insulation** : Cross-linked polyethylene (XLPE)
- Sheath** : Black Cross-linked polyethylene (XLPE)

## TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 25,000 Volts
- AC Testing voltage** : 38,000 Volts
- Reference standard** : ICEA S-93-639, TIS 2341-2564

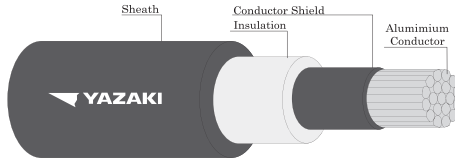
## APPLICATION

For aerial power transmission and distribution line.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Diameter of conductor Approx.<br>(mm) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 15.6°C minimum<br>(MΩ-km) | Breaking strength of conductor minimum<br>(N) | Continuous current rating in free air at 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|----------------------------------------------------|----------------|---------------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|----------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------|---------------------------------|------------------------|
| 35                                                 | Compacted      | 6.6 - 7.5                             | 3.18                                 | 3.18                             | 19.9 - 21.5                      | 0.868                                          | 2,500                                              | 5,591                                         | 165                                                          | 390                             | 500/D                  |
| 50                                                 | Compacted      | 7.7 - 8.6                             | 3.18                                 | 3.18                             | 22.0 - 24.0                      | 0.641                                          | 2,250                                              | 7,313                                         | 199                                                          | 440                             | 500/D                  |
| 70                                                 | Compacted      | 9.3 - 10.2                            | 3.18                                 | 3.18                             | 23.0 - 25.0                      | 0.443                                          | 2,050                                              | 10,420                                        | 250                                                          | 550                             | 500/D                  |
| 95                                                 | Compacted      | 11.0 - 12.0                           | 3.18                                 | 3.18                             | 25.0 - 27.0                      | 0.320                                          | 1,850                                              | 14,098                                        | 305                                                          | 650                             | 500/D                  |
| 120                                                | Compacted      | 12.5 - 13.5                           | 3.18                                 | 3.18                             | 26.5 - 28.7                      | 0.253                                          | 1,700                                              | 18,518                                        | 353                                                          | 750                             | 500/D                  |
| 150                                                | Compacted      | 13.9 - 15.0                           | 3.18                                 | 3.18                             | 28.0 - 30.2                      | 0.206                                          | 1,600                                              | 22,457                                        | 402                                                          | 850                             | 500/D                  |
| 185                                                | Compacted      | 15.5 - 16.8                           | 3.18                                 | 3.18                             | 29.4 - 31.7                      | 0.164                                          | 1,450                                              | 28,974                                        | 464                                                          | 1000                            | 500/D                  |
| 240                                                | Compacted      | 17.8 - 19.2                           | 3.18                                 | 3.18                             | 32.1 - 34.4                      | 0.125                                          | 1,300                                              | 37,506                                        | 553                                                          | 1200                            | 500/D                  |

D : Packing in drum

## 35KV 90°C SPACED AERIAL CABLE



ICEA S-93-639

 TIS 2341-2564

## CABLE STRUCTURE

- Conductor** : Compact round stranded hard drawn aluminium wires
- Conductor screen** : Semi-Conductive Cross-linked polyethylene (XLPE) compound
- Insulation** : Cross-linked polyethylene (XLPE)
- Sheath** : Black Cross-linked polyethylene (XLPE)

## TECHNICAL DATA

- Classification** : Maximum conductor temperature 90°C  
: Circuit voltage not exceeding 35,000 Volts
- AC Testing voltage** : 49,000 Volts
- Reference standard** : ICEA S-93-639, TIS 2341-2564

## APPLICATION

For aerial power transmission and distribution line.

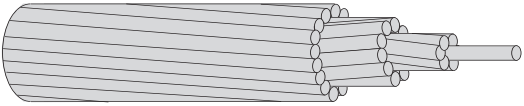
| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Diameter of conductor<br>Approx.<br>(mm) | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 15.6°C minimum<br>(MΩ-km) | Breaking strength of conductor minimum<br>(N) | Continuous current rating in free air at 40°C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |
|----------------------------------------------------|----------------|------------------------------------------|--------------------------------------|----------------------------------|----------------------------------|------------------------------------------------|----------------------------------------------------|-----------------------------------------------|--------------------------------------------------------------|---------------------------------|------------------------|
| 50                                                 | Compacted      | 7.7 - 8.6                                | 4.45                                 | 3.18                             | 26                               | 0.641                                          | 2,500                                              | 7,313                                         | 24.2 - 26.4                                                  | 550                             | 500/D                  |
| 70                                                 | Compacted      | 9.3 - 10.2                               | 4.45                                 | 3.18                             | 27                               | 0.443                                          | 2,300                                              | 10,420                                        | 25.6 - 27.8                                                  | 650                             | 500/D                  |
| 95                                                 | Compacted      | 11.0 - 12.0                              | 4.45                                 | 3.18                             | 29                               | 0.320                                          | 2,100                                              | 14,098                                        | 27.3 - 29.5                                                  | 750                             | 500/D                  |
| 120                                                | Compacted      | 12.5 - 13.5                              | 4.45                                 | 3.18                             | 31                               | 0.253                                          | 1,950                                              | 18,518                                        | 28.8 - 31.0                                                  | 850                             | 500/D                  |
| 150                                                | Compacted      | 13.9 - 15.0                              | 4.45                                 | 3.18                             | 32                               | 0.206                                          | 1,800                                              | 22,457                                        | 30.2 - 32.5                                                  | 950                             | 500/D                  |
| 185                                                | Compacted      | 15.5 - 16.8                              | 4.45                                 | 3.18                             | 34                               | 0.164                                          | 1,690                                              | 28,974                                        | 32.0 - 34.4                                                  | 1100                            | 500/D                  |
| 240                                                | Compacted      | 17.8 - 19.2                              | 4.45                                 | 3.18                             | 36                               | 0.125                                          | 1,500                                              | 37,506                                        | 34.0 - 36.8                                                  | 1300                            | 500/D                  |

D : Packing in drum

C

**ALL ALUMINIUM STRANDED CONDUCTOR**

 TIS 85-2548



**CABLE STRUCTURE**

**Conductor** : Concentric stranded hard drawn aluminium wires

**TECHNICAL DATA**

**Reference standard** : TIS 85-2548

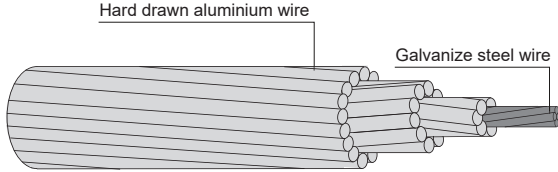
**APPLICATION**

For overhead transmission and distribution line.

| Nominal cross sectional area | Number and diameter of wires | Conductor diameter approx. | Conductor resistance at 20°C maximum | Breaking strength minimum | Continuous current rating in free air at 40°C maximum | Cable weight approx. | Standard length |
|------------------------------|------------------------------|----------------------------|--------------------------------------|---------------------------|-------------------------------------------------------|----------------------|-----------------|
| (mm <sup>2</sup> )           | (No./mm)                     | (mm)                       | (Ω/km)                               | (N)                       | (A)                                                   | (kg/km)              | (m)             |
| 10                           | 7/1.35                       | 4.05                       | 2.8633                               | 1950                      | 81                                                    | 27                   | 3000/D          |
| 16                           | 7/1.71                       | 5.13                       | 1.7896                               | 3040                      | 110                                                   | 44                   | 3000/D          |
| 25                           | 7/2.13                       | 6.42                       | 1.1453                               | 4500                      | 145                                                   | 69                   | 3000/D          |
| 35                           | 7/2.52                       | 7.56                       | 0.8200                               | 5737                      | 180                                                   | 95                   | 3000/D          |
| 40                           | 7/2.70                       | 8.10                       | 0.7158                               | 6800                      | 197                                                   | 109                  | 3000/D          |
| 50                           | 7/3.02                       | 9.06                       | 0.5710                               | 7894                      | 225                                                   | 137                  | 3000/D          |
| 63                           | 7/3.39                       | 10.17                      | 0.4545                               | 10390                     | 264                                                   | 173                  | 3000/D          |
| 70                           | 19/2.15                      | 10.75                      | 0.4171                               | 11816                     | 270                                                   | 189                  | 3000/D          |
| 95                           | 19/2.52                      | 12.60                      | 0.3036                               | 15543                     | 340                                                   | 259                  | 3000/D          |
| 100                          | 19/2.59                      | 12.95                      | 0.2877                               | 17000                     | 355                                                   | 274                  | 3000/D          |
| 120                          | 19/2.85                      | 14.25                      | 0.2374                               | 19416                     | 390                                                   | 332                  | 3000/D          |
| 125                          | 19/2.89                      | 14.45                      | 0.2302                               | 21250                     | 411                                                   | 341                  | 3000/D          |
| 150                          | 37/2.25                      | 15.75                      | 0.1960                               | 25201                     | 455                                                   | 404                  | 3000/D          |
| 160                          | 19/3.27                      | 16.35                      | 0.1798                               | 26400                     | 482                                                   | 437                  | 3000/D          |
| 185                          | 37/2.52                      | 17.64                      | 0.1563                               | 30252                     | 550                                                   | 507                  | 3000/D          |
| 200                          | 19/3.66                      | 18.30                      | 0.1439                               | 32000                     | 556                                                   | 547                  | 3000/D          |
| 240                          | 61/2.25                      | 20.25                      | 0.1192                               | 39371                     | 625                                                   | 670                  | 3000/D          |
| 250                          | 19/4.09                      | 20.45                      | 0.1151                               | 40000                     | 643                                                   | 683                  | 3000/D          |
| 300                          | 61/2.52                      | 22.68                      | 0.0950                               | 47265                     | 710                                                   | 841                  | 3000/D          |
| 315                          | 37/3.29                      | 23.03                      | 0.0916                               | 51970                     | 745                                                   | 864                  | 3000/D          |
| 400                          | 61/2.85                      | 25.65                      | 0.0743                               | 64000                     | 855                                                   | 1075                 | 3000/D          |
| 450                          | 37/3.94                      | 27.58                      | 0.0641                               | 72000                     | 938                                                   | 1240                 | 3000/D          |
| 500                          | 61/3.25                      | 29.25                      | 0.0571                               | 80000                     | 990                                                   | 1399                 | 3000/D          |
| 560                          | 37/4.39                      | 30.73                      | 0.0515                               | 89600                     | 1078                                                  | 1539                 | 2000/D          |
| 625                          | 91/2.96                      | 32.56                      | 0.0463                               | 95060                     | 1140                                                  | 1735                 | 2000/D          |
| 630                          | 61/3.63                      | 32.60                      | 0.0458                               | 100800                    | 1162                                                  | 1745                 | 2000/D          |
| 710                          | 61/3.85                      | 34.60                      | 0.0407                               | 113600                    | 1252                                                  | 1963                 | 2000/D          |

D : Packing in drum

## ALL ALUMINIUM CONDUCTOR STEEL REINFORCED


 TIS 85-2548

## CABLE STRUCTURE

**Conductor** : Hard drawn aluminium wire**Reference standard** : TIS 85-2548**Steel Core** : Galvanized steel (Zinc coated), solid and concentric stranded

## APPLICATION

For overhead transmission and distribution line.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Aluminium<br>Number<br>and approx.<br>diameter of wires<br>(No./mm) | Steel wire<br>Number<br>and approx.<br>diameter of wires<br>(No./mm) | Overall<br>conductor<br>diameter<br>approx.<br>(mm) | Conductor<br>resistance<br>at 20°C<br>maximum<br>(Ω/km) | Breaking<br>strength<br>minimum<br>(N) | Continuous<br>current rating in<br>free air at 40°C<br>maximum<br>(A) | Cable<br>weight<br>approx.<br>(kg/km) | Standard<br>length<br>(m) |
|----------------------------------------------------|---------------------------------------------------------------------|----------------------------------------------------------------------|-----------------------------------------------------|---------------------------------------------------------|----------------------------------------|-----------------------------------------------------------------------|---------------------------------------|---------------------------|
| 16/2.67                                            | 6/1.85                                                              | 1/1.84                                                               | 5.53                                                | 1.7934                                                  | 6080                                   | 90                                                                    | 65                                    | 4000/D                    |
| 25/4.17                                            | 6/2.30                                                              | 1/2.30                                                               | 6.91                                                | 1.1478                                                  | 9130                                   | 125                                                                   | 100                                   | 4000/D                    |
| 35/6.00                                            | 6/2.70                                                              | 1/2.70                                                               | 8.10                                                | 0.8352                                                  | 12405                                  | 145                                                                   | 138                                   | 3000/D                    |
| 40/6.67                                            | 6/2.91                                                              | 1/2.91                                                               | 8.74                                                | 0.7174                                                  | 14400                                  | 160                                                                   | 161                                   | 3000/D                    |
| 50/8.00                                            | 6/3.20                                                              | 1/3.20                                                               | 9.60                                                | 0.5945                                                  | 16827                                  | 170                                                                   | 195                                   | 3000/D                    |
| 50/30.0                                            | 12/2.33                                                             | 7/2.33                                                               | 11.70                                               | 0.5644                                                  | 42950                                  | 170                                                                   | 376                                   | 3000/D                    |
| 63/10.5                                            | 6/3.66                                                              | 1/3.66                                                               | 11.00                                               | 0.4555                                                  | 21630                                  | 269                                                                   | 255                                   | 3000/D                    |
| 70/12.0                                            | 26/1.85                                                             | 7/1.44                                                               | 11.70                                               | 0.4131                                                  | 26241                                  | 290                                                                   | 283                                   | 3000/D                    |
| 95/15.0                                            | 26/2.15                                                             | 7/1.67                                                               | 13.60                                               | 0.3058                                                  | 34958                                  | 350                                                                   | 382                                   | 3000/D                    |
| 95/55.0                                            | 12/3.20                                                             | 7/3.20                                                               | 16.00                                               | 0.2992                                                  | 78105                                  | 350                                                                   | 710                                   | 3000/D                    |
| 100/16.7                                           | 6/4.61                                                              | 1/4.61                                                               | 13.80                                               | 0.2869                                                  | 34330                                  | 363                                                                   | 405                                   | 3000/D                    |
| 120/20.0                                           | 26/2.44                                                             | 7/1.90                                                               | 15.50                                               | 0.2374                                                  | 44666                                  | 410                                                                   | 493                                   | 2000/D                    |
| 120/70.0                                           | 12/3.60                                                             | 7/3.60                                                               | 18.00                                               | 0.2364                                                  | 98393                                  | 410                                                                   | 899                                   | 2000/D                    |
| 125/6.94                                           | 18/2.97                                                             | 1/2.97                                                               | 14.90                                               | 0.2304                                                  | 29170                                  | 425                                                                   | 397                                   | 2000/D                    |
| 125/20.4                                           | 26/2.47                                                             | 7/1.92                                                               | 15.70                                               | 0.2310                                                  | 45690                                  | 425                                                                   | 504                                   | 2000/D                    |
| 125/30.0                                           | 30/2.33                                                             | 7/2.33                                                               | 16.10                                               | 0.2259                                                  | 56473                                  | 425                                                                   | 590                                   | 2000/D                    |
| 150/25.0                                           | 26/2.70                                                             | 7/2.10                                                               | 17.10                                               | 0.1939                                                  | 54060                                  | 470                                                                   | 603                                   | 2000/D                    |
| 160/8.89                                           | 18/3.36                                                             | 1/3.36                                                               | 16.80                                               | 0.1800                                                  | 36180                                  | 492                                                                   | 508                                   | 2000/D                    |
| 160/26.1                                           | 26/2.80                                                             | 7/2.18                                                               | 17.70                                               | 0.1805                                                  | 57690                                  | 492                                                                   | 649                                   | 2000/D                    |
| 170/40.0                                           | 30/2.70                                                             | 7/2.70                                                               | 18.90                                               | 0.1682                                                  | 75261                                  | 520                                                                   | 793                                   | 1500/D                    |
| 185/30.0                                           | 26/3.00                                                             | 7/2.33                                                               | 19.00                                               | 0.1571                                                  | 64896                                  | 535                                                                   | 744                                   | 1500/D                    |
| 200/11.1                                           | 18/3.76                                                             | 1/3.76                                                               | 18.80                                               | 0.1440                                                  | 44220                                  | 560                                                                   | 637                                   | 1500/D                    |
| 200/32.6                                           | 26/3.13                                                             | 7/2.43                                                               | 19.80                                               | 0.1444                                                  | 70130                                  | 560                                                                   | 810                                   | 1500/D                    |
| 210/35.0                                           | 26/3.20                                                             | 7/2.49                                                               | 20.30                                               | 0.1381                                                  | 73437                                  | 590                                                                   | 848                                   | 1500/D                    |
| 210/50.0                                           | 30/3.00                                                             | 7/3.00                                                               | 21.00                                               | 0.1383                                                  | 92078                                  | 610                                                                   | 979                                   | 1500/D                    |
| 230/30.0                                           | 24/3.50                                                             | 7/2.33                                                               | 21.00                                               | 0.1250                                                  | 71711                                  | 630                                                                   | 874                                   | 1500/D                    |
| 240/40.0                                           | 26/3.45                                                             | 7/2.68                                                               | 21.90                                               | 0.1188                                                  | 84724                                  | 645                                                                   | 984                                   | 1500/D                    |
| 250/24.6                                           | 22/3.80                                                             | 7/2.11                                                               | 21.60                                               | 0.1154                                                  | 68720                                  | 652                                                                   | 882                                   | 1500/D                    |
| 250/40.7                                           | 26/3.50                                                             | 7/2.72                                                               | 22.20                                               | 0.1155                                                  | 87670                                  | 652                                                                   | 1013                                  | 1500/D                    |
| 265/35.0                                           | 24/3.74                                                             | 7/2.49                                                               | 22.40                                               | 0.1095                                                  | 81458                                  | 680                                                                   | 998                                   | 1500/D                    |
| 300/50.0                                           | 26/3.86                                                             | 7/3.00                                                               | 24.50                                               | 0.0949                                                  | 104944                                 | 740                                                                   | 1233                                  | 1500/D                    |
| 305/40.0                                           | 54/2.68                                                             | 7/2.68                                                               | 24.10                                               | 0.0949                                                  | 97491                                  | 740                                                                   | 1158                                  | 1000/D                    |
| 315/21.8                                           | 45/3.00                                                             | 7/1.99                                                               | 23.90                                               | 0.0917                                                  | 79030                                  | 763                                                                   | 1052                                  | 1000/D                    |
| 315/51.3                                           | 26/3.93                                                             | 7/3.05                                                               | 24.90                                               | 0.0917                                                  | 106830                                 | 763                                                                   | 1277                                  | 1000/D                    |
| 380/50.0                                           | 54/3.00                                                             | 7/3.00                                                               | 27.00                                               | 0.0758                                                  | 120731                                 | 840                                                                   | 1451                                  | 1000/D                    |
| 400/27.7                                           | 45/3.36                                                             | 7/2.24                                                               | 26.90                                               | 0.0722                                                  | 98360                                  | 885                                                                   | 1322                                  | 1000/D                    |
| 400/51.9                                           | 54/3.07                                                             | 7/3.07                                                               | 27.60                                               | 0.0723                                                  | 123040                                 | 885                                                                   | 1519                                  | 1000/D                    |
| 435/55.0                                           | 54/3.20                                                             | 7/3.20                                                               | 28.80                                               | 0.0666                                                  | 134077                                 | 900                                                                   | 1651                                  | 1000/D                    |
| 450/31.1                                           | 45/3.57                                                             | 7/2.38                                                               | 28.50                                               | 0.0642                                                  | 107470                                 | 940                                                                   | 1493                                  | 1000/D                    |
| 450/58.3                                           | 54/3.26                                                             | 7/3.26                                                               | 29.30                                               | 0.0643                                                  | 138420                                 | 940                                                                   | 1713                                  | 1000/D                    |
| 490/65.0                                           | 54/3.40                                                             | 7/3.40                                                               | 30.60                                               | 0.0590                                                  | 150453                                 | 960                                                                   | 1864                                  | 1000/D                    |
| 500/34.6                                           | 45/3.76                                                             | 7/2.51                                                               | 30.10                                               | 0.0578                                                  | 119410                                 | 1014                                                                  | 1656                                  | 1000/D                    |
| 500/64.8                                           | 54/3.43                                                             | 7/3.43                                                               | 30.90                                               | 0.0578                                                  | 153800                                 | 1014                                                                  | 1897                                  | 1000/D                    |
| 550/70.0                                           | 54/3.60                                                             | 7/3.60                                                               | 32.40                                               | 0.0526                                                  | 167643                                 | 1020                                                                  | 2089                                  | 500/D                     |
| 560/38.7                                           | 45/3.98                                                             | 7/2.65                                                               | 31.80                                               | 0.0516                                                  | 133740                                 | 1099                                                                  | 1854                                  | 500/D                     |
| 560/70.9                                           | 54/3.63                                                             | 19/2.18                                                              | 32.70                                               | 0.0516                                                  | 172590                                 | 1099                                                                  | 2112                                  | 500/D                     |
| 630/43.6                                           | 45/4.22                                                             | 7/2.81                                                               | 33.80                                               | 0.0459                                                  | 150450                                 | 1140                                                                  | 2085                                  | 500/D                     |
| 630/79.8                                           | 54/3.86                                                             | 19/2.31                                                              | 34.70                                               | 0.0459                                                  | 191770                                 | 1140                                                                  | 2384                                  | 500/D                     |
| 680/85.0                                           | 54/4.00                                                             | 19/2.40                                                              | 36.00                                               | 0.0426                                                  | 206318                                 | 1150                                                                  | 2564                                  | 500/D                     |
| 710/49.1                                           | 45/4.48                                                             | 7/2.99                                                               | 35.90                                               | 0.0407                                                  | 169560                                 | 1240                                                                  | 2352                                  | 500/D                     |
| 710/89.9                                           | 54/4.09                                                             | 19/2.45                                                              | 36.80                                               | 0.0407                                                  | 216120                                 | 1240                                                                  | 2678                                  | 500/D                     |

D : Packing in drum

# Photovoltaic Solar Cable

|                |                                                                                                                             |    |
|----------------|-----------------------------------------------------------------------------------------------------------------------------|----|
| PV SOLAR CABLE | Flexible Tinned Copper Conductor, Low Smoke Halogen free Cross-linked Polyolefin Double Insulated, Photovoltaic Solar Cable | D1 |
|----------------|-----------------------------------------------------------------------------------------------------------------------------|----|

**Flexible Tinned Copper Conductor, Low Smoke Halogen free Cross-linked Polyolefin Double Insulated, Photovoltaic Solar Cable**

**CABLE STRUCTURE**

|                         |                                                  |
|-------------------------|--------------------------------------------------|
| <b>Conductor</b>        | : Flexible tinned annealed copper wire           |
| <b>Insulation</b>       | : Low smoke halogen free cross-linked polyolefin |
| <b>Insulation color</b> | : Black                                          |
| <b>Sheath</b>           | : Low smoke halogen free cross-linked polyolefin |
| <b>Sheath color</b>     | : Black or Red                                   |

**TECHNICAL DATA**

|                                              |                                                                                     |
|----------------------------------------------|-------------------------------------------------------------------------------------|
| <b>Classification</b>                        | : Maximum conductor temperature<br>90 °C                                            |
|                                              | : Max. permissible period conductor temperature of 120°C is limited to 20,000 hours |
| <b>Nominal A.C. voltage</b>                  | : 1,000/1,000 Volts                                                                 |
| <b>Nominal D.C. voltage</b>                  | : 1,500 Volts                                                                       |
| <b>A.C. Testing voltage</b>                  | : 6,500 Volts                                                                       |
| <b>D.C. Testing voltage</b>                  | : 15,000 Volts                                                                      |
| <b>Max. permitted operating d.c. voltage</b> | : 1,800 Volts                                                                       |
| <b>Reference standard</b>                    | : EN 50618                                                                          |

**APPLICATION**

PV Solar cable is intended for use at the direct current side & alternating current side of photovoltaic systems. They are suitable for applications in/at equipment with protective insulation and may be installed as fixed or freely suspended or free movable, indoor or outdoor. Installation in cable trays, conduits or in walls is permissible.

| Nominal cross sectional area<br>(mm <sup>2</sup> ) | Conductor type | Insulation thickness nominal<br>(mm) | Sheath thickness nominal<br>(mm) | Maximum Overall diameter approx.<br>(mm) | Conductor resistance at 20°C maximum<br>(Ω/km) | Insulation resistance at 90°C minimum<br>(MΩ·km) | Current rating in free air at 60 °C maximum<br>(A) | Cable weight approx.<br>(kg/km) | Standard length<br>(m) |                            |
|----------------------------------------------------|----------------|--------------------------------------|----------------------------------|------------------------------------------|------------------------------------------------|--------------------------------------------------|----------------------------------------------------|---------------------------------|------------------------|----------------------------|
| 4                                                  | Flexible       | 0.7                                  | 0.8                              | 5.9                                      | 5.09                                           | 0.58                                             | 41                                                 | 64                              | 100/C                  | 1000/D<br>2000/D<br>4000/D |
| 6                                                  | Flexible       | 0.7                                  | 0.8                              | 6.5                                      | 3.39                                           | 0.50                                             | 55                                                 | 84                              | 100/C                  | 1000/D<br>2000/D<br>4000/D |
| 10                                                 | Flexible       | 0.7                                  | 0.8                              | 7.6                                      | 1.95                                           | 0.42                                             | 70                                                 | 130                             | 100/C                  | 1000/D<br>2000/D<br>4000/D |

C = Packing in coil  
D = Packing in drum

**Table A.4 – Current rating conversion factors for different ambient temperatures**

| Ambient temperature °C | Conversion factor |
|------------------------|-------------------|
| up to 60               | 1.00              |
| 70                     | 0.92              |
| 80                     | 0.84              |
| 90                     | 0.75              |

# Electrical Insulation Tape

|     |                                             |    |
|-----|---------------------------------------------|----|
| VTA | RoHS PVC PLASTIC ELECTRICAL INSULATION TAPE | E1 |
|-----|---------------------------------------------|----|

# VTA

# TIS 386-2567

## RoHS PVC PLASTIC ELECTRICAL INSULATION TAPE



### SCOPE :

This specification covers RoHS PVC plastic electrical insulation tape to be used in electrical service at temperature 0 ~ 80°C. The tape shall be used for insulation of jointed splices of cables and wires. The tape must have good insulation properties, heat, weather, flame retardant and RoHS materials for environment, suitable for tropical country.

### STANDARD :

The RoHS PVC plastic electrical insulation tape shall be manufactured and tested in accordance with TIS 386-2567.

### Dimension

- 1) Thickness (mm) 0.125 ± 0.025, 0.18 ± 0.025
- 2) Width (mm) 19 ± 1.0
- 3) Length (m) 10 ± 1.0  
- 0

| PROPERTY AND REQUIREMENTS                                                                            | PACKING                                                                                                          |
|------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| 1) Electrolytic corrosion after 24h at 27 ± 2°C and 93 ± 2% relative humidity (Ω) ≥ 10 <sup>11</sup> | The RoHS PVC plastic electrical insulation tape shall be packing in paper core Cellophane and shrinkage wrapped. |
| 2) Penetration at elevated temperature (°C) ≥ 50                                                     |                                                                                                                  |
| 3) Flammability non-ignitable or self-extinguishing                                                  | 1) Dimension of each roll                                                                                        |
| 4) Thermal endurance no-crack                                                                        | : Diameter (cm) 5.8                                                                                              |
| 5) Tensile strength (N/10 mm width/mm thick.) ≥ 150                                                  | Width (cm) 1.9                                                                                                   |
| 6) Adhesion to steel (N/10 mm width/mm thick.) ≥ 1.8                                                 | 2) Weight of each roll (approx.)                                                                                 |
| 7) Adhesion to backing (N/10 mm width/mm thick.) ≥ 1.8                                               | : Net (kg) 0.036                                                                                                 |
| 8) Shear adhesion after immersion in water (N) ≥ 18.0                                                | Gross (kg) 0.037                                                                                                 |
| 9) Electric strength                                                                                 | 3) Number of roll in each package (Rolls) 10                                                                     |
| - after 24 hour at 27 ± 2°C                                                                          | 4) Number of package in one case (Package) 10                                                                    |
| and 65 ± 5% relative humidity (kV/mm) ≥ 40                                                           | 5) Dimension of each case : WxLxH (cm) 12.5x30x19.5                                                              |
| - after 24 hour at 27 ± 2°C                                                                          | 6) Gross weight of each case (approx.) (kg) 4                                                                    |
| and 93 ± 2% relative humidity (kV/mm) ≥ 35                                                           |                                                                                                                  |

E

## This image shows a full page of white paper with horizontal dotted lines, typical of primary school writing paper. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## **Thai-Yazaki Electric Wire Co., Ltd**

### **Head Office/Sale Office:**

10<sup>th</sup> Floor, O-NES Tower, Room No. 1003-1004  
6 Sukhumvit Soi 6, Klongtoey Sub-District, Klongtoey District, Bangkok, 10110 Thailand  
Tel: 0-26532550 Fax: 0-26532613  
Tax Identification No.0105505001539



Website

### **FACTORY :**

#### **PHRA PRADAENG FACTORY**

283 Moo 1, Suksawad Road, Bangplakot, Phrasamut-Chedi, Samuthprakarn 10290  
Tel.0-2463-0058

#### **WAT KAE FACTORY**

166 Moo 4, Soi Wat Khae Suk Sawat Rd., Pak Khlong Bang Pla Kot, Phra Samut Chedi,  
Samut Prakan 10290  
Tel.0-2425-8804

#### **SUARNABHUMI FACTORY**

99 Moo 4, Khlong Suan, Bang Bo, Samut Prakan 10560  
Tel.0-2300-9500, 0-2136-4856

Website: [www.thaiyazaki-electricwire.co.th](http://www.thaiyazaki-electricwire.co.th)

