YAZAKI

# TECHNICAL DATA

• 4th Edition •

MASCI

ISO 9000 QMS03196/800
TIS 18001 OHS07012/210
OHSAS 18001 OHSAS07009/130

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 2143-2546**
**TIS 386-2531**
**TIS 2341-2555**

**THAI-YAZAKI ELECTRIC WIRE COMPANY LIMITED**

# THAI-YAZAKI ELECTRIC WIRE CO., LTD.

## Technical Data

For
Electric Wires
and Cables

Publication : 4th Edition April 2021

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.


SALES OFFICE :
Two Pacific Place Building.
142 Sukhumvit Road, Klongtoey Subdistrict, Klongtoey District, Bangkok 10110, Thailand
Tel . 0-2653-2550 Fax . 0-2653-2613, 0-2653-2614

FACTORY :
283 Moo1 Suksawad Rd., Tambol Pak- Klong Bangplakot, Amphur Phrasamutchedi, Samutprakan 10290, Thailand
Tel . 0-2463-0058, 0-2463-4135-7
Fax : 0-2463-2477

# Index

## A Technical Data and General Information



## B Copper Conductor Cables

**Building Wires and Cables**

## C Aluminium Conductor Cables



## D Electrical Insulation Tape

# Technical Data and General Information



A

A

# Wire Gauges

YAZAKI

| Gauge | | | | Diameter | | Sectional Area | | | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|
| B.W.G. | A.W.G. | S.W.G. | mm.G | Mil | mm. | Cir.Mil | $in^2$ | $mm^2$ | lb/1,000 ft | kg/km |
| 5/0 | - | 7/0 | - | 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 | 22.18 | 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

YAZAKI

| Gauge | | | | Diameter | | Sectional Area | | | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|
| B.W.G. | A.W.G. | S.W.G. | mm.G | Mil | mm. | Cir.Mil | $in^2$ | $mm^2$ | 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 |

A

# Wire Gauges

YAZAKI

| Gauge | | | | Diameter | | Sectional Area | | | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|
| B.W.G. | A.W.G. | S.W.G. | mm.G | Mil | mm. | Cir.Mil | $in^2$ | $mm^2$ | 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

YAZAKI

| Gauge | | | | Diameter | | Sectional Area | | | Weight | |
|---|---|---|---|---|---|---|---|---|---|---|
| B.W.G. | A.W.G. | S.W.G. | mm.G | Mil | mm. | Cir.Mil | $in^2$ | $mm^2$ | 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

A

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

| Conductor Cross-swection area AWG/MCM (kcmil) | | Theoretical Cross-Section area mm² | Advised Cross-Section area mm² |
|---|---|---|---|
| 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 | 50 |
| | 1/0 | 53.40 | 50 |
| | 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 | = | $10^{12}$ | tera | T |
| | 1 | 000 | 000 | 000 | = | $10^{9}$ | giga | G |
| | | 1 | 000 | 000 | = | $10^{6}$ | mega | M |
| | | | 1 | 000 | = | $10^{3}$ | kilo | k |
| | | | | 100 | = | $10^{2}$ | hecto | h |
| | | | | 10 | = | $10^{1}$ | deca | da |
| | | | | 0.1 | = | $10^{-1}$ | deci | d |
| | | | | 0.01 | = | $10^{-2}$ | centi | c |
| | | | | 0.001 | = | $10^{-3}$ | milli | m |
| | | | 0.000 | 001 | = | $10^{-6}$ | micro | μ |
| | | 0.000 | 000 | 001 | = | $10^{-9}$ | nano | n |
| | 0.000 | 000 | 000 | 001 | = | $10^{-12}$ | pico | p |
| 0.000 | 000 | 000 | 000 | 001 | = | $10^{-15}$ | femto | f |
| 0.000 | 000 | 000 | 000 | 000 | = | $10^{-18}$ | atto | a |

YAZAKI

# 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 | ○ | △ | ○ | △ | ○ | ○ | × | Tap Water | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ | ◎ |
| Chloroform | × | × | × | × | △ | △ | × | Sea Water | ○ | ◎ | ◎ | ◎ | ◎ | ◎ | |
| Acetic Acid, conc. | ○ | △ | ○ | × | ○ | ○ | △ | Sulfuric Acid, conc. | × | × | × | △ | △ | △ | × |
| Acetic Acid, 10% | ○ | × | ○ | △ | ◎ | ◎ | ○ | Sulfuric Acid, 10% | ○ | ○ | ○ | ◎ | ○ | ○ | ○ |
| Ethyl Acetate | ○ | × | △ | × | ○ | ○ | ○ | Phosphoric Acid | ○ | △ | ○ | × | ◎ | ◎ | ○ |
| Carbon Tetrachloride | × | × | × | × | × | × | △ | Sodium Hydroxide, 10% | ○ | ○ | ○ | ○ | ○ | ○ | ◎ |
| Cyclohexane | △ | × | × | | △ | △ | | Freon | × | × | | ○ | ○ | ○ | |
| Dioctyl 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
× : Not Applicable
△ : Poor Resistance, care on use

A

# Properties Of Insulation And Jacket Materials

## General Comparison Data

| Material | | Polyvinyl Chloride | Low Density Polyethylene | Cross-liked Polyethylene | Polyisoprene | Styrene Butadiene Copolymer | Polyisprene | Chlorosulphonated Polyethylene |
|---|---|---|---|---|---|---|---|---|
| Designation | | **PVC** | **PE** | **XLPE** | **NR** | **SBR** | **CR** | **CSM** |
| Chemical structure | | $-(CH_2\text{-}\underset{Cl}{CH})_n-$ | $-(CH_2\text{-}CH_2)_n-$ | $\sim CH_2\text{-}\underset{\sim CH_2\text{-}CH\text{-}CH_2\sim}{CH}\text{-}CH_2\sim$ | $-(CH_2\text{-}\underset{CH_3}{C}\text{=}CH\text{-}CH_2)_n-$ | $-[(CH_2\text{-}CH\text{=}CH\text{-}CH_2)_x-(CH_2\text{-}\underset{C_6H_5}{CH})_y]_n-$ | $-(CH_2\text{-}\underset{Cl}{C}\text{=}CH\text{-}CH_2)_n-$ | $-[(CH_2)_x\text{-}CH\text{-}(CH_2)_y\ \underset{SO_2Cl}{CH}]_n-$ |
| 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 | $0.7 - 2.5 \times 10^{-4}$ | $1.6 - 1.8 \times 10^{-4}$ | $1.6 - 1.8 \times 10^{-4}$ | $1.8 \times 10^{-4}$ | $1.8 \times 10^{-4}$ | $1.9X10^{-4}$ | $1.8X10^{-4}$ |
| Thermal Conductivity Cal / cm• sec• | °C | $3.0 - 4.0 \times 10^{-4}$ | $8.0 \times 10^{-4}$ | $8.0 \times 10^{-4}$ | $5.1 \times 10^{-4}$ | $5.8 \times 10^{-4}$ | $5.6X10^{-4}$ | $6.3X10^{-4}$ |
| Specific Heat | Cal /°C• g | 0.3 - 0.5 | 0.55 | 0.55 | 0.52 | - | 0.52 | |
| Tensile Strength | kg / $mm^2$ | 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 | $10^{12} - 10^{15}$ | $>10^{16}$ | $>10^{16}$ | $10^{15}$ | $10^{14} - 10^{15}$ | $10^{10} - 10^{12}$ | $10^{13} - 10^{14}$ |
| 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 |
| Alcari 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 |

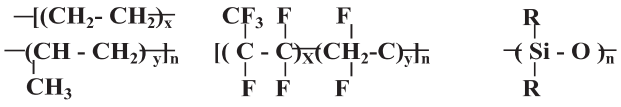
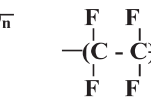
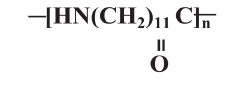
* Improved to "good" with mixture of carbon black.



YAZAKI

# Properties Of Insulation And Jacket Materials

## General Comparison Data (Continued)

| Material | | Ethylene Propylene Copolymer | Hexafluoropropylene Vinylidenefluoride Copolymer | Polyorganosiloxane | Polypropylene | Polytetra Fluoroethylene | Polychloro Trifluoroethylene | Polyamide |
|---|---|---|---|---|---|---|---|---|
| Designation | | **EPM, EPDM** | **FPM** | **Q** | **PP** | **PTFE** | **PCTFE** | **Nylon(12)** |
| Chemical structure | |  |  |  |  |  |  |  |
| Density | | 0.86 - 0.87 | 1.82 - 1.85 | 0.97 - 1.40 | 0.9 - 0.915 | 2.13 - 2.2 | 2.1 | 1.01 - 1.02 |
| Hardness (Shore) | | 40 - 85 | 60 - 90 | 50 - 85 | R85 - 110 | D50 - 65 | R110 - 115 | R100 - 110 |
| Max. Operating Temp. | °C | 90 | 200 | 180 | 80 | 260 | 180 | 90 |
| Emergency Temp. Rating | °C | | | | | | | |
| Short Circuit Temp. Rating | °C | | | | 150 | 310 | | 120 |
| Brittleness Temp. | °C | -40 ~ -60 | -44 ~ -60 | -70 ~ -100 | | < - 70 | < - 70 | - 70 |
| Softening Temp. | °C | | | | | | 210 | 170 - 180 |
| Thermal Expansion | /°C | | $1.6 \times 10^{-4}$ | $2.6 \times 10^{-4}$ | $6.0 - 8.5 \times 10^{-4}$ | $1.0 \times 10^{-5}$ | $4.5 - 7.0 \times 10^{-5}$ | $12 \times 10^{-5}$ |
| Thermal Conductivity Cal / cm•sec• | °C | | $5.5 \times 10^{-4}$ | $5.7 \times 10^{-4}$ | $2.8 \times 10^{-4}$ | $6 \times 10^{-4}$ | $6 \times 10^{-4}$ | $5.9 - 8.3 \times 10^{-4}$ |
| Specific Heat | Cal /°C•g | | | | 0.46 | 0.25 | 0.22 | 0.62 |
| Tensile Strength | kg / mm$^2$ | 0.5 - 1.5 | 1.5 - 2.5 | 0.3 - 1.0 | 2.0 - 4.0 | 1.4 - 2.1 | 2.8 - 3.5 | 5.0 - 6.0 |
| Elongation | % | 300 - 700 | 200 - 600 | 50 - 300 | 200 - 700 | 200 | 10 - 100 | 180 - 285 |
| Abrasion Resistance | | Good | Good | Fair | Excellent | Excellent | Excellent | Excellent |
| Voltage Breakdown | kv / mm | 20 - 35 | 24 | 20 - 40 | 20 - 32 | 15 - 30 | 10 - 20 | 20 - 30 |
| Volume Resistivity | Ω• cm | $10^{14} - 10^{15}$ | $10^{12} - 10^{14}$ | $10^{14} - 10^{15}$ | $>10^{16}$ | $>10^{18}$ | $1.2 - 10^{18}$ | $10^{14} - 10^{15}$ |
| Dielectric Constant | | 3 - 5 | 6 - 7 | 3 - 4 | 2.0 - 2.2 | 2.0 | 2.24 - 2.8 | 3.5 - 4.5 |
| Dissipation Factor (tan δ) | | 0.2 - 0.8 | | 0.1 - 1.0 | 0.0002 - 0.0006 | <0.0002 | 0.0012 - 0.0036 | 0.03 - 0.06 |
| Weathering | | Excellent | Good | Good | Inferior* | Excellent | Excellent | Inferior* |
| Ozone Resistance | | Excellent | Good | Excellent | Excellent | Excellent | Excellent | Good |
| Flame Resistance | | Burn | Self - Extinguish | Burn | Burn | No Burn | No Burn | Burn |
| Track Resistance | | Excellent | Fair | Excellent | Excellent | Excellent | Excellent | Good |
| Water Resistance | | Good | Excellent | Fair | Excellent | Excellent | Excellent | Excellent |
| Acid Resistance | | Excellent | Excellent | Poor | Excellent | Excellent | Excellentt | Good |
| Alcari Resistance | | Excellent | Excellent | Good | Excellent | Excellent | Excellent | Excellent |
| Oil Resistance | | Inferior* | Excellent | Fair | Excellent | Excellent | Excellent | Excellent |
| Solvent Resistance | | Poor | Excellent | Fair | Excellent | Excellent | Excellentt | Good |

* Improved to “good” with mixture of carbon black.



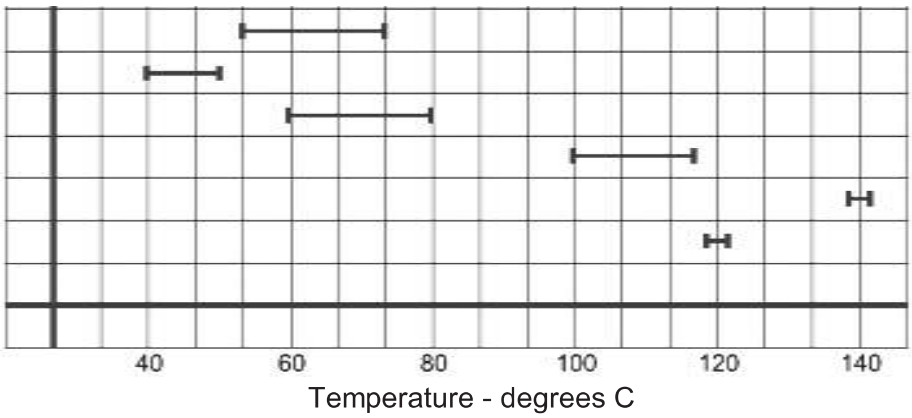
YAZAKI

# Properties of Insulation and Jacket Materials

## Thermal Properties

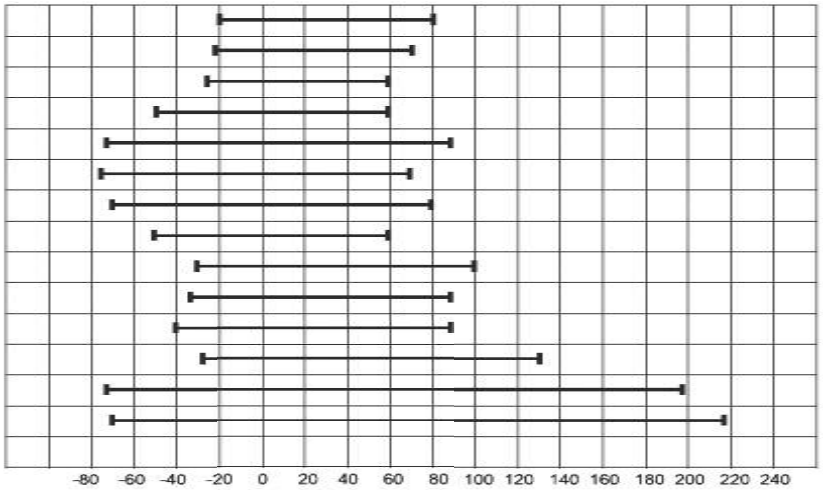
### Deflection temperature of plastics under load [ASTM D648]

Polyvinyle Choloride (Hard Type)
Low Density Polyethylene
High Density Polyethylene
Polypropylene
Polyamide
Polytetrafluoroethylene



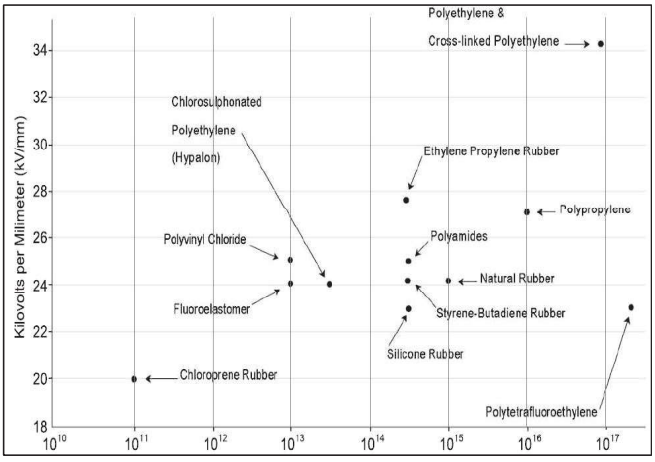

## Operating Temperature

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

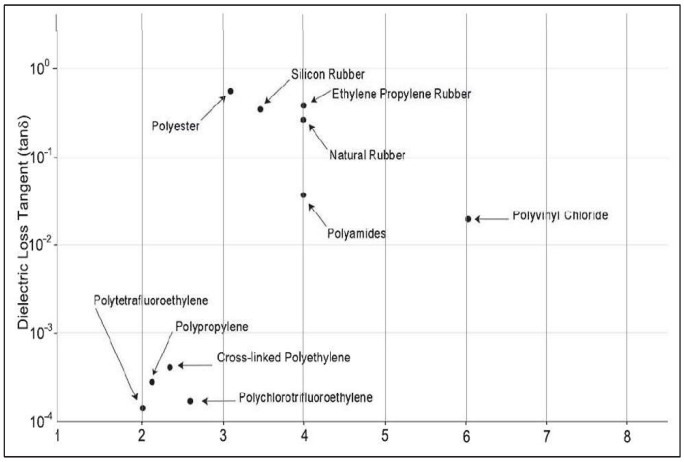



Polyvinyle Chloride, 80°C Grade
Polyvinyle Chloride, 75°C Grade
Polyvinyle Chloride, 60°C Grade
Cold Resisting Polyvinyle Chloride
Cross-Linked Polyethylene
Polyethylene
Nylon
Synthetic Natural Rubber
Chloroprene
Styrene-Butadiene Rubber
Ethylene-Propylene Rubber
Chlorosulphonated Polyethylene (Hypalon)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

## Electrical Properties




Volume Resistivity [Ω•cm]

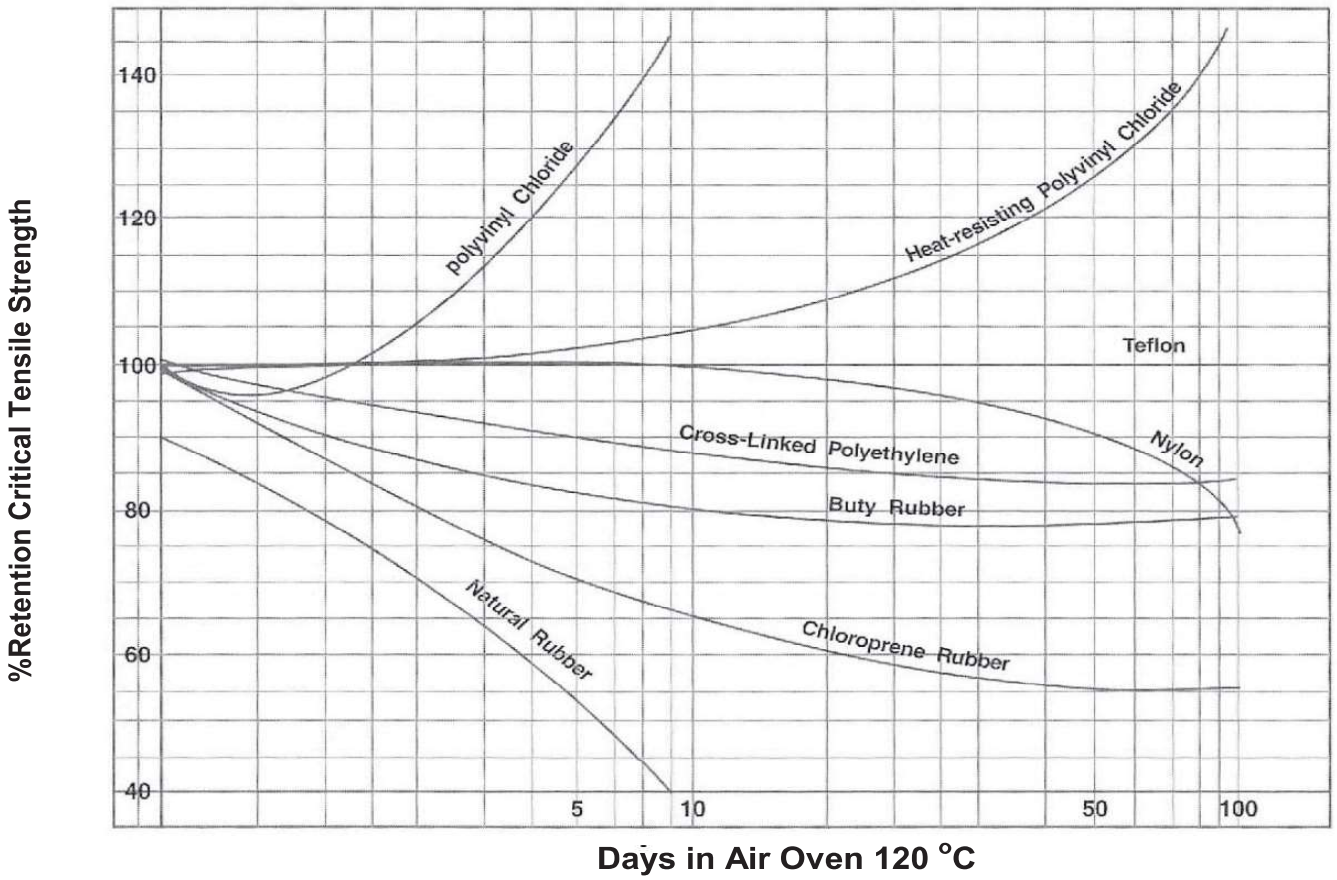


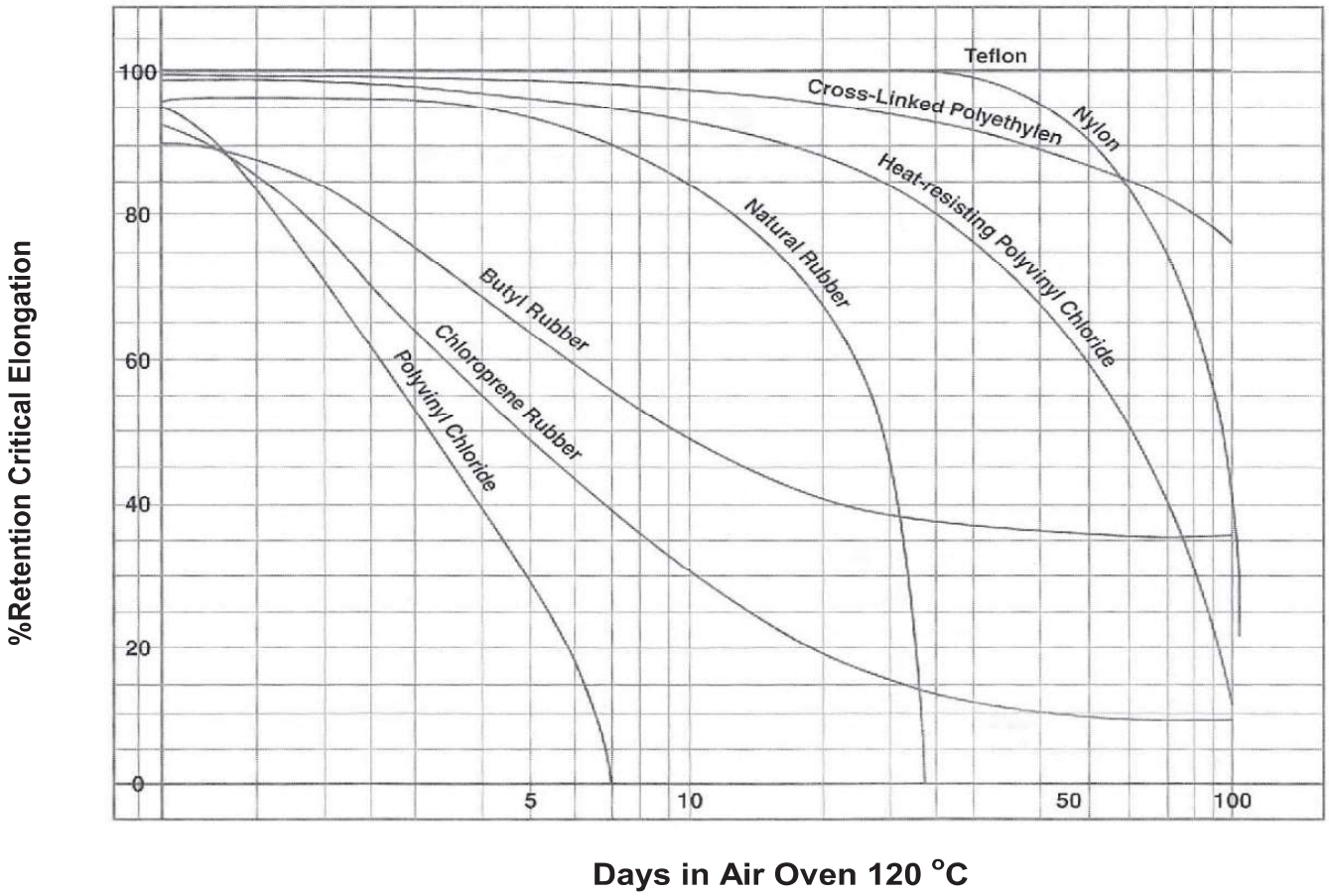

Dielectric Constant [ε]

# Properties of Insulation and Jacket Materials

## Long - Time Heat Aging Curves





# Condition of Installation

## Minimum Bending Radius

| Type of cable \ Number of core | | Single core | | multi core |
|---|---|---|---|---|
| | | 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 armouredcable | | - | - | 8D |
| Flattape armoured cable | | - | - | 8D |
| Al. flat sheathed cable | | 20D | 20D | 20D |
| Al. corrugated sheathed cable | | 15D | 15D | 15D |
| Al. solidconductor | | - | - | 10D |
| Cabtyre cable | | 6D | - | 4D |

D : Overall diameter of cable

## Permissible Maximum Pulling Tension

| Pulling tool | Material of conductor | Permissible maximum pulling tension (kgf) |
|---|---|---|
| Pulling eye | Copper | 7 x ( Number or core ) x ( Cross-sectional area of conductor ) |
| | Aluminium | 4 x ( Number of core ) x ( 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. |

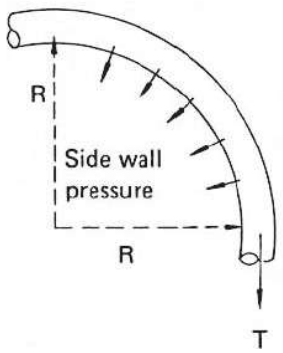
Note : When cable grip is used is should cover more than 500 mm. in length of the cable end and be bound to the cable sheath

## Side Wall Pressure to Cable

Permissible maximum side wall pressure to the cable at bending point during installation is
500 kg/m for CV cable (Single core and multi core)
300 kg/m for PVC insulated PVC sheathed cable
250 kg/m for CV triplex type

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

$$= \frac{T}{R}$$



# Symbols of Electrical Units

| Electrical Unit | | Symbol |
|---|---|---|
| CURRENT | (AMPERE) | A |
| VOLTAGE | (VOLT) | V (kV) |
| RESISTANCE | (OHM) | Ω (kΩ, MΩ) |
| ELECTRIC POWER | (WATT) | W (kW, MW.) |
| ELECTRIC ENERGY | (WATT HOUR) | Wh (kWh.) |
| HORSE POWER | | HP |
| POWER FACTOR | (COS Ø ) | P.F. |
| FREQUENCY | (HERTZ) | $H_Z$ |
| CAPACITANCE | (FARAD) | F (μF, pF.) |
| APPARENT POWER | (VOLTAMPERE) | VA (kVA) |
| DIRECT CURRENT | | DC |
| ALTERNATING CURRENT | | AC |
| EFFICENCY | | 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 |
| $A = \frac{kW \times 1000}{V}$ | $A = \frac{kW \times 1000}{V \times P.F.}$ | $A = \frac{kW \times 1000}{1.73 \times V \times P.F.}$ |
| $A = \frac{kVA \times 1000}{V}$ | $A = \frac{kVA \times 1000}{V}$ | $A = \frac{kVA \times 1000}{1.73 \times V}$ |
| $A = \frac{HP \times 746}{V \times (\%Eff.)}$ | $A = \frac{HP \times 746}{V \times (\%Eff.) \times P.F.}$ | $A = \frac{HP \times 746}{1.73 \times V \times (\%Eff.) \times P.F.}$ |
| $kW = \frac{A \times V}{1000}$ | $kW = \frac{A \times V \times P.F.}{1000}$ | $kW = \frac{A \times V \times 1.73 \times P.F.}{1000}$ |
| $kVA = \frac{A \times V}{1000}$ | $kVA = \frac{A \times V}{1000}$ | $kVA = \frac{A \times V \times 1.73}{1000}$ |
| $HP = \frac{A \times V \times (\%Eff.)}{746}$ | $HP = \frac{A \times V \times (\%Eff.) \times P.F.}{746}$ | $HP = \frac{A \times V \times 1.73(\%Eff.) \times P.F.}{746}$ |

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 Dimensions for The Motor Starters

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



| Motor ratings in HP at service voltage | | | | | | Rating of motor starter (A) | Relay setting (A) | Max. quick-blow back-up fuse (A) | Min cross section of cables ($mm^2$) |
|---|---|---|---|---|---|---|---|---|---|
| 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 | 235 | 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 $10^{-5}$ 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 $mm^2$ | = 1/1000$in^2$ |
| | 1 CM | = 0.0005067 $mm^2$ | = 0.0000007854 $in^2$ | | = 0.7854 sq. mil. |
| | 1 $mm^2$ | = 1973 CM | = 0.00155 $in^2$ | = 1,550 sq. mil. | |
| | 1 $in^2$ | = 1273240 CM | = 645.1 $mm^2$ | = 0.0069 $ft.^2$ | |
| | 1 $yd^2$ | = 1,296 $in^2$ | = 0.83613 $m^2$ | | |
| | 1 $m^2$ | = 1,550 $in^2$ | =10.7 $ft.^2$ | = 1.195 $yd.^2$ | |
| | 1 $km^2$ | = 0.001562 $mile^2$ | | | |
| | 1 $mile^2$ | = 27,880,000 $ft.^2$ | = 3,098,000 $yd.^2$ | = 2,590,000 $m^2$ | = 2.59 $km^2$ |
| 3. VOLUME | 1 $cm^3$ | = 0.061 $in^3$ | | | |
| | 1 $in^3$ | = 16.39 $cm^3$ | = 0.0036 gal. | = 0.0005787 $ft.^3$ | |
| | 1 I | = 1,000 $cm^3$ | = 61.023 $in^3$ | = 0.2642 gal | = 0.03531 $ft.^3$ |
| | 1 gal. | = 3,785 $cm^3$ | = 231 $in^3$ | = 0.1337 $ft.^3$ | = 0.004951 $yd.^3$ |
| | 1 $ft.^3$ | = 28,317 $cm^3$ | = 1,728 $in^3$ | = 28.32 l. | = 7.48 gal |
| | 1 $yd^3$ | = 46,656 $in^3$ | =0.7646 $m^3$ | | |
| | 1 $m^3$ | = 61,023 $in^3$ | = 35.31 $ft.^3$ | = 1.308 $yd^3$ | |
| 4. WEIGHT | 1 g. | = 15.43 gr. | = 0.03527 oz. | = 0.002205 Ib. | |
| | 1 oz. | = 437.5 gr. | = 28.35 g. | = 0.0625 Ib. | |
| | 1 Ib. | = 7,000 gr. | = 453.6 g. | = 16 oz. | = 0.4536 kg. |
| | 1 kg. | = 15,432 gr. | = 35.27 oz. | = 2.205 Ib. | |
| | 1 ton (short) | = 2,000 Ib. | = 907.2 kg. | = 0.8928 ton (long) | |
| | 1 ton (long) | = 2,240 Ib. | = 1.12 ton (short) | = 1.016 ton (metric) | |
| | 1 ton (metric) | = 2,204.62 Ib. | | | |
| 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 | | | |

A

# Conductivity and Density of Metals

A

| Kind | Symbol | Conductivty (% IACS) | Density (g/cm³) |
|---|---|---|---|
| Silver | Ag | 108.6 | 10.50 |
| Stranded Copper (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 coefficient, 20 °C | Density (g/cm³) |
|---|---|---|---|---|---|
| | 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 °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 |

A

The correction factor is given by:

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

Where :

$k$ = temperature correction factor of conductor

$k_1$ = reciprocal of k

$\alpha$ = constant mass temperature coefficient at 20 $^{o}$C per $^{o}$C

= 0.00393 for copper (based on 100% conductivity)

= 0.00403 for aluminum (based on 61% conductivity)

$\theta$ = referred temperature, $^{o}$C

# Electrical Formulas

**D.C. resistance**

**Medthod of calculation of conductor maximum d.c. resistance**

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

A

Where:

$R_{dc}$ = the d.c. resistance at 20°C, Ω/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<= 0.6 mm
1.04 for stranded or bunched conductors in all cables where the diameter of wires>= 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 mm2 (typically single core cables)
1.02 for conductors in fixed cables of < 500 mm2 (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 mm | | $K_1$ | | | |
|---|---|---|---|---|---|
| | | Soild Conductor | | Stranded Conductor | |
| | | Plain or silver plated copper | Tinned copper or plain aluminium | Plain or silver plated copper | Tinned copper or plain aluminium |
| | ≤0.10 | - | - | 1.07 | 1.12 |
| >0.10 | ≤0.31 | - | - | 1.04 | 1.07 |
| >0.31 | ≤0.91 | 1.03 | 1.05 | 1.02 | 1.04 |
| >0.91 | ≤3.60 | 1.03 | 1.04 | 1.02 | 1.03 |
| >3.60 | ≤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 |

A

## Reactance (Inductive Reactance)

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

Where:

f = Frequency (Hz)
L = Inductance (mH/km)

## Impedance

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

Where:

R = Conductor Resistance (Ω/km)
X = Cable Inductive Reactance (Ω/km)

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

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

$$W_d = \omega C U_0^2 \tan\delta \ \text{(W/m)}$$

Where:

$\omega$ = $2\pi f$
C = Capacitance per unit length (F/m)
$U_0$ = voltage to earth (V)

| Type of cable | Permittivity (ε) | tanδ | $U_0$ |
|---|---|---|---|
| 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 :

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

Where:

$\varepsilon$ = relative permittivity of the insulation
$D_i$ = 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 $D_i$ and $d_c$

**AC resistance at temperature :**

$$R_{ac} = R_{dc_t}(1 + y_s + y_p)$$

Where:

$R_{dc_t}$ = 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:

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

$k_s$ = Factor determined by conductor construction

| Type of conductor | Wheather 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)

$R_{dc_t}$ = 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 :

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

Where:

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

$R_{dc_t}$ = 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

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

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 ($\mu$F/km)
V = applied voltage (V)

## Insulation Resistance

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

Where:

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

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

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

## Short-Circuit Current Rating

Copper Conductor

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

Aluminium Conductor

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

Where:

I = Short circuit current (kA)
A = Cross-section area (mm²)
t = Short circuit duration (sec)
$T_1$ = Max. permissible continuous operating temp (°C) ; PVC=70, XLPE=90
$T_2$ = Max. permissible temperature at short circuit (°C) ; PVC=160, XLPE=250

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

| Size (mm²) | 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

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

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

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

A

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 overiapped. | $1.27nwb$ |
| 3. Helically applied flat tape. overlapped. See note 3. | $4bd_m \times \sqrt{\frac{100}{2(100 - L)}}$ |
| 4. Corrugated tape. longitudinaily 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:**

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

Where :

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

$R$ is the ac resistance of the cable (Ω/km)

$X$ is the ac reactance of the cable (Ω/km)

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

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

**For three phase:**

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

Where :

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

$R$ is the ac resistance of the cable (Ω/km)

$X$ is the ac reactance of the cable (Ω/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:**

$$L_{max} = \frac{1000V_{1\emptyset}}{2I(R\cos\theta + X\sin\theta)}$$

Where :

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

$R$ is the ac resistance of the cable (Ω/km)

$X$ is the ac reactance of the cable (Ω/km)

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

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

**For three phase:**

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

Where :

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

$R$ is the ac resistance of the cable (Ω/km)

$X$ is the ac reactance of the cable (Ω/km)

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

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

# Electrical Data from EIT Standard 2001-56

## **Table 5-8 :** Correction factor for groups of more than one circuit

| Group of circuit | Correction factor |
|---|---|
| 2 | 0.80 |
| 3 | 0.70 |
| 4 | 0.65 |
| 5 | 0.60 |
| 6 | 0.57 |
| 7 | 0.54 |
| 8 | 0.52 |
| 9 | 0.50 |
| 10-12 | 0.45 |
| 13-16 | 0.41 |
| 17-20 | 0.38 |

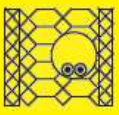


**Note (Table 5-8)**

1) These factors are applicable to uniform groups of cables, equally loaded.
2) The correction factor are applied to:
   - Groups of two or three or four Single core cables
   - Multi cores cables.
3) If a system consists of both two or three or four cables, the total number of cables is taken as the number of circuits, and the correction factor is applied to the table for two or three or four loaded conductors for the two or three or four core cables respectively.
4) If a group consists of n Single core cables it may either be considered as n/2 circuits of two loaded conductor or n/3 circuits of three loaded conductor

**Remark :** This page refer EIT Standard 2001-56

**Table 5-20:** Current-carrying capacities in amperes for copper conductor, PVC insulated, with or without sheathed for rated voltage 0.6/1 kV, conductor temperature 70°C / ambient temperature 40 °C in conduit

| | Group for installation medthod : Group 1 | | | | Group for installation medthod : Group 2 | | | |
|---|---|---|---|---|---|---|---|---|
| No. of Conductor | 2 | | 3 | | 2 | | 3 | |
| Single/ muticores | Single core | Multi core | Single core | Multi core | Single core | Multi core | Single core | Multi core |
| Installation Medthod |  |  |  |  |  |  |  |  |
| Type of Cable | 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 flame retardant (FR), low smoke and halogen free (LSHF) etc. | | | | | | | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | | | | | | |
| 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 | - |

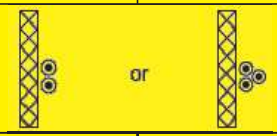
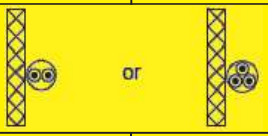
A

**Note (Table 5-20)**

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
2) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
3) Installation method given in Table 5-47.
4) Type of cable given in Table 5-48.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-21:** Current-carrying capacities in amperes for copper insulated with sheathed for rated voltage 0.6/1kV, conductor temperature 70°C or 90°C / ambient temperature 40 °C on wall

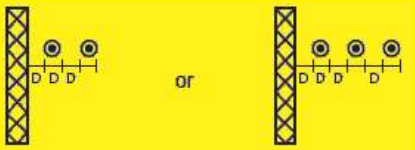
| | Group for installation medthod : Group 3 | | | | |
|---|---|---|---|---|---|
| No. of Conductor | 2 | Not more than 3 | | Not more than 3 | |
| Type of Cable | Flat | Round | | Round | |
| Single/ muticores | Multi core | Single core | | Multi core | |
| Type of insulation | PVC | PVC | XLPE | PVC | XLPE |
| Conductor temperature | 70°C | 70°C | 90°C | 70°C | 90°C |
| Installation Medthod |  |  | |  | |
| Type of Cable | VAF, VAF-G | NYY, IEC 60502-1 | IEC 60502-1 | NYY, NYY-G, 60227 IEC 10, IEC 60502-1 | IEC 60502-1 |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | | | |
| 1 | 14 | 12 | 16 | 12 | 15 |
| 1.5 | 17 | 16 | 21 | 15 | 20 |
| 2.5 | 23 | 22 | 28 | 21 | 27 |
| 4 | 32 | 29 | 37 | 28 | 36 |
| 6 | 41 | 37 | 49 | 36 | 47 |
| 10 | 56 | 51 | 67 | 50 | 65 |
| 16 | 74 | 69 | 90 | 66 | 87 |
| 25 | - | 90 | 118 | 84 | 108 |
| 35 | - | 112 | 147 | 104 | 134 |
| 50 | - | 145 | 190 | 125 | 163 |
| 70 | - | 186 | 244 | 160 | 208 |
| 95 | - | 227 | 297 | 194 | 253 |
| 120 | - | 264 | 345 | 225 | 293 |
| 150 | - | 304 | 397 | 260 | 338 |
| 185 | - | 348 | 455 | 297 | 386 |
| 240 | - | 411 | 537 | 351 | 455 |
| 300 | - | 474 | 620 | 404 | 524 |
| 400 | - | 552 | 722 | - | - |
| 500 | - | 629 | 823 | - | - |

**Note (Table 5-21)**

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43
2) Installation method given in Table 5-47
3) Type of cable given in Table 5-48

**Remark :** This page refer EIT Standard 2001-56

**Table 5-22 :** Current-carrying capacities in amperes accordance TIS 11-2553 for copper conductor, PVC insulated for rated voltage 450/750 V, conductor temperature 70°C, ambient temperature 40°C on insulator

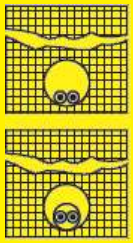
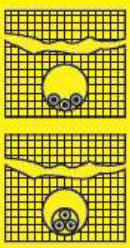
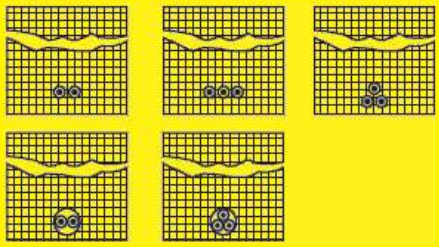
| | Group for installation medthod : Group 4 | |
|---|---|---|
| **Installation Methods** |  |  |
| **Type of Cable** | **60227 IEC 01, 60227 IEC 10, NYY** | |
| **Size (sq.mm.)** | **Current-carrying capacities (amperes)** | |
| 1 | - | - |
| 1.5 | - | - |
| 2.5 | - | - |
| 4 | 30 | 37 |
| 6 | 39 | 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 |
| 500 | - | - |

**Note (Table 5-22)**
1) Installation method given in Table 5-47
2) Type of cable given in Table 5-48

**Remark :** This page refer EIT Standard 2001-56

A

**Table 5-23:** Current-carrying capacities in amperes for copper conductor, PVC insulated with sheathed for rated voltage 0.6/1kV, conductor temperature 70°C / ambient temperature 30 °C in duct in ground or direct burial.

| | Group for installation medthod : Group 5 | | Group for installation medthod : Group 6 |
|---|---|---|---|
| No. of conductor | 2 | 3 | Not more than 3 |
| Type of Cable | Single core and Multi core | Single core and Multi core | Single core and Multi core |
| Installation Methods |  |  |  |
| Type of Cable | NYY, NYY-G, IEC 60502-1 | | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | |
| 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 |

**Note (Table 5-23)**

1) Where the ambient temperature in the intended location of the cable differs from 30°C (reference ambient temperature), the correction factor given in Table 5-44
2) If installation more than 1 circuit , the correction factor given in table 5-45 or 5-46.
3) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
4) Installation method given in Table 5-47.
5) Type of cable given in Table 5-48.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-24 :** Current-carrying capacities in amperes accordance TIS 11-2553 for copper conductor, PVC insulated for rated voltage 300/500 V, conductor temperature 70°C or 90°C / ambient temperature 40°C in free air

| Conductor Temperature | 70°C | 90°C |
|---|---|---|
| Type of Cable | 60227 IEC 05, 60227 IEC 06 | 60227 IEC 07, 60227 IEC 08 |
| Size (sq.mm.) | Current-carrying capacities (amperes) | |
| 0.5 | 3 | 3 |
| 0.75 | 6 | 6 |
| 1 | 10[2)] | 10 |
| 1.5 | - | 16 |
| 2.5 | - | 25 |



**Note (Table 5-24)**
1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in below table.

**- For insulated with PVC 70°C**

| Ambient Temperature (Degree celsius) | 31-35 | 36-40 | 41-45 | 46-50 | 51-55 |
|---|---|---|---|---|---|
| Correction factor | 1.11 | 1.00 | 0.87 | 0.71 | 0.50 |

**- For insulated with PVC 90°C**

| Ambient Temperature (Degree celsius) | 31-50 | 51-55 | 56-60 | 61-65 | 66-70 |
|---|---|---|---|---|---|
| Correction factor | 1.00 | 0.96 | 0.83 | 0.67 | 0.47 |

2) Type of cable given in Table 5-48.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-25 :** Current-carrying capacities in amperes accordance TIS 11-2553 for flexible copper conductor, PVC insulated for rated voltage 300/500 V, conductor temperature 70°C or 90°C / ambient temperature 40°C in free air

| No. of conductor | 2 | 3 |
|---|---|---|
| Type of Cable | 60227 IEC 52, 60227 IEC 53, 60227 IEC 56, 60227 IEC 57 | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | |
| 0.5 | 3 | 3 |
| 0.75 | 6 | 6 |
| 1 | 10 | 10 |
| 1.5 | 16 | 16 |
| 2.5 | 25 | 20 |



**Note (Table 5-25)**

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in below table.

**- For insulated with PVC 70°C**

| Ambient Temperature (Degree celsius) | 31-35 | 36-40 | 41-45 | 46-50 | 51-55 |
|---|---|---|---|---|---|
| Correction factor | 1.11 | 1.00 | 0.87 | 0.71 | 0.50 |

**- For insulated with PVC 90°C**

| Ambient Temperature (Degree celsius) | 31-50 | 51-55 | 56-60 | 61-65 | 66-70 |
|---|---|---|---|---|---|
| Correction factor | 1.00 | 0.96 | 0.83 | 0.67 | 0.47 |

2) Type of cable given in Table 5-48.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-26 :** Current-carring capacities in amperes accordance TIS 11-2553 for flexible copper conductor, PVC insulated for rated voltage 450/750 V, conductor temperature 70°C / ambient temperature 40°C in free air

| No./Type of conductor | Single core 2 wires or 2 cores with or without ground | 3, 4, 5 Cores |
|---|---|---|
| Type of cable | 60227 IEC 02, VCT, VCT-G | VCT, VCT-G |
| Size (sq.mm.) | Current-carrying capacities (amperes) | |
| 1.5 | 16 | - |
| 2.5 | 25 | - |
| 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 | - |



**Note (Table 5-26)**

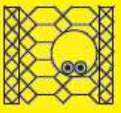
1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in below table.

| Ambient Temperature (Degree celsius) | 31-35 | 36-40 | 41-45 | 46-50 | 51-55 |
|---|---|---|---|---|---|
| Correction factor | 1.11 | 1.00 | 0.87 | 0.71 | 0.50 |

2) Type of cable given in Table 5-48.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-27:** Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 90°C / ambient temperature 40 °C in conduit

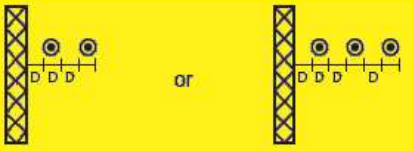
| | Group for installation medthod : Group 1 | | | | Group for installation medthod : Group 2 | | | |
|---|---|---|---|---|---|---|---|---|
| No. of Conductor | 2 | | 3 | | 2 | | 3 | |
| Single/ muticores | Single core | Multi core | Single core | Multi core | Single core | Multi core | Single core | Multi core |
| Installation Medthod |  |  |  |  |  |  |  |  |
| Type of Cable | IEC 60502-1 and special cable such as flame retardant (FR), low smoke and halogen free (LSHF) etc. | | | | | | | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | | | | | | |
| 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 | - |

**Note (Table 5-27)**

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
2) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.
3) Installation method given in Table 5-47.
4) Type of cable given in Table 5-48.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-28:** Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 90°C / ambient temperature 40 °C on insulator

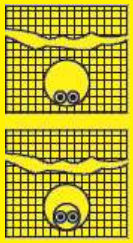
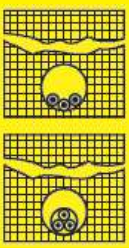
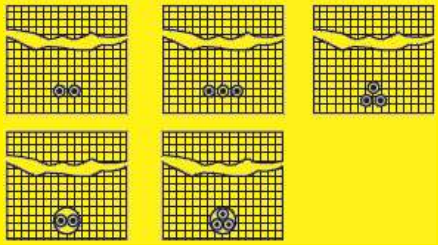
| | Group for installation medthod : Group 4 | |
|---|---|---|
| **Installation Methods** |  |  |
| **Type of Cable** | IEC 60502-1 | |
| **Size (sq.mm.)** | Current-carrying capacities (amperes) | |
| 4 | 47 | 54 |
| 6 | 60 | 68 |
| 10 | 82 | 90 |
| 16 | 110 | 124 |
| 25 | 147 | 166 |
| 35 | 183 | 206 |
| 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 | 1064 | 1140 |

**Note (Table 5-28)**
1) Installation method given in Table 5-47

**Remark :** This page refer EIT Standard 2001-56

A

**Table 5-29:** Current-carrying capacities in amperes for copper conductor, XLPE insulated with sheathed for rated voltage 0.6/1kV, conductor temperature 90°C / ambient temperature 30 °C in duct in ground or direct burial.

| | Group for installation medthod : Group 5 | | Group for installation medthod : Group 6 |
|---|---|---|---|
| No. of conductor | 2 | 3 | Not more than 3 |
| Type of Cable | Single core and Multi core | Single core and Multi core | Single core and Multi core |
| Installation Methods |  |  |  |
| Type of Cable | IEC 60502-1 | | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | |
| 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 |

**Note (Table 5-29)**

1) Where the ambient temperature in the intended location of the cable differs from 30°C (reference ambient temperature), the correction factor given in Table 5-44

2) If installation more than 1 circuit , the correction factor given in table 5-45 or 5-46.

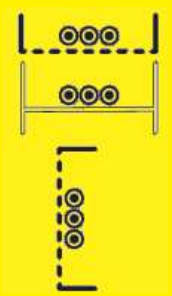
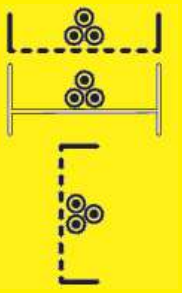
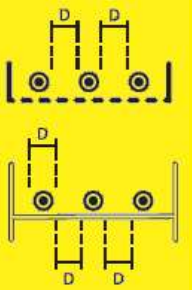
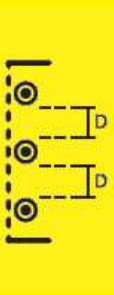
3) If installation more than 1 circuit in single conduit , the correction factor given in Table 5-8.

4) Installation method given in Table 5-47.

5) Type of cable given in Table 5-48.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-30:** Current-carrying capacities in amperes for copper conductor, PVC insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 70°C / ambient temperature 40 °C install in perforated trays or ladder cleats

| | Group for installation medthod : Group 7 | | | | |
|---|---|---|---|---|---|
| Single/ muticores | Single core | | | | Multi cores |
| Installation Medthod |  |  |  |  |  |
| Type of Cable | 60227 IEC 10, NYY, NYY-G and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc. | | | | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | | | |
| 1 | - | - | - | - | 13 |
| 1.5 | - | - | - | - | 16 |
| 2.5 | - | - | - | - | 22 |
| 4 | - | - | - | - | 30 |
| 6 | - | - | - | - | 37 |
| 10 | - | - | - | - | 52 |
| 16 | - | - | - | - | 70 |
| 25 | 99 | 96 | 127 | 113 | 88 |
| 35 | 124 | 119 | 157 | 141 | 110 |
| 50 | 151 | 145 | 191 | 171 | 133 |
| 70 | 196 | 188 | 244 | 221 | 171 |
| 95 | 239 | 230 | 297 | 271 | 207 |
| 120 | 279 | 268 | 345 | 315 | 240 |
| 150 | 324 | 310 | 397 | 365 | 278 |
| 185 | 371 | 356 | 453 | 418 | 317 |
| 240 | 441 | 422 | 535 | 495 | 374 |
| 300 | 511 | 488 | 617 | 573 | 432 |
| 400 | 599 | 571 | 741 | 692 | - |
| 500 | 686 | 652 | 854 | 800 | - |

A

**Note (Table 5-30)**

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.

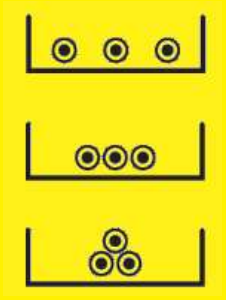
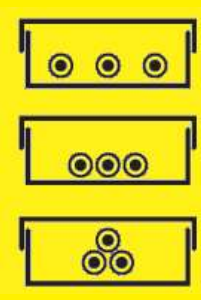
2) If installation more than 1 circuit, the correction factor given in table 5-40 or 5-41 for Single core and Multi cores respectively.

3) Installation method given in Table 5-47.

4) Type of cable given in Table 5-48.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-31:** Current-carrying capacities in amperes for copper conductor, PVC insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 70°C / ambient temperature 40 °C install in ventilated or unventilated cable channel

| | Group for installation medthod : Group 7 | | | |
|---|---|---|---|---|
| Single/ muticores | Single core | | | |
| Installation Medthod |  |  |  |  |
| Type of Cable | 60227 IEC 10, NYY, NYY-G, IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc. | | | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | | |
| 1 | - | - | 12 | 10 |
| 1.5 | - | - | 15 | 13 |
| 2.5 | - | - | 21 | 17 |
| 4 | - | - | 28 | 23 |
| 6 | - | - | 36 | 30 |
| 10 | - | - | 50 | 40 |
| 16 | - | - | 66 | 54 |
| 25 | 90 | 77 | 84 | 70 |
| 35 | 112 | 96 | 104 | 86 |
| 50 | 145 | 117 | 125 | 103 |
| 70 | 186 | 149 | 160 | 130 |
| 95 | 227 | 180 | 194 | 156 |
| 120 | 264 | 208 | 225 | 179 |
| 150 | 304 | 228 | 260 | 196 |
| 185 | 348 | 258 | 297 | 222 |
| 240 | 411 | 301 | 351 | 258 |
| 300 | 474 | 343 | 404 | 295 |
| 400 | 552 | 406 | - | - |
| 500 | 629 | 464 | - | - |

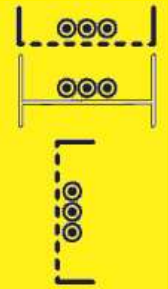
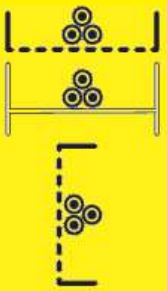
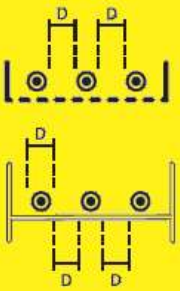
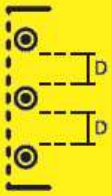
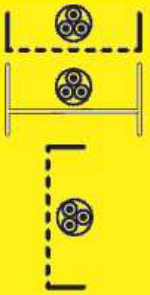
**Note (Table 5-31)**

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
2) If number of conductor more than 1 circuit for install in ventilated, correction factor given in table 5-8 and table 5-41 for install in unventilated.

**Exception :** If spacing for circuit more than two time of cable diameter, the correction factor do not apply.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-32:** Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 90°C / ambient temperature 40 °C install in perforated trays or ladder cleats

| | Group for installation medthod : Group7 | | | | |
|---|---|---|---|---|---|
| Single/ muticores | Single core | | | | Multi cores |
| Installation Medthod |  |  |  |  |  |
| Type of Cable | IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc. | | | | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | | | |
| 1 | - | - | - | - | 16 |
| 1.5 | - | - | - | - | 21 |
| 2.5 | - | - | - | - | 29 |
| 4 | - | - | - | - | 38 |
| 6 | - | - | - | - | 49 |
| 10 | - | - | - | - | 68 |
| 16 | - | - | - | - | 91 |
| 25 | 128 | 123 | 166 | 147 | 116 |
| 35 | 160 | 154 | 206 | 183 | 144 |
| 50 | 197 | 188 | 250 | 224 | 175 |
| 70 | 254 | 244 | 321 | 289 | 224 |
| 95 | 311 | 298 | 391 | 354 | 271 |
| 120 | 364 | 349 | 455 | 413 | 315 |
| 150 | 422 | 404 | 525 | 480 | 363 |
| 185 | 485 | 464 | 602 | 551 | 415 |
| 240 | 577 | 552 | 711 | 654 | 490 |
| 300 | 670 | 640 | 821 | 758 | 565 |
| 400 | 790 | 7549 | 987 | 917 | - |
| 500 | 908 | 861 | 1140 | 1064 | - |

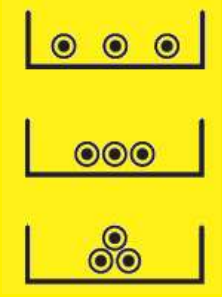
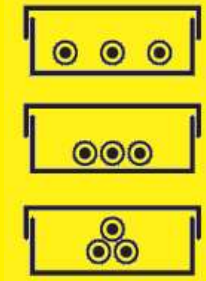
A

**Note (Table 5-32)**

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
2) If installation more than 1 circuit, the correction factor given in table 5-40 or 5-41 for Single core and Multi cores respectively.
3) Installation method given in Table 5-47.
4) Type of cable given in Table 5-47.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-33:** Current-carrying capacities in amperes for copper conductor, XLPE insulated, with sheathed for rated voltage 0.6/1 kV, conductor temperature 90°C / ambient temperature 40 °C install in ventilated or unventilated cable channel

| | Group for installation medthod : Group 7 | | | |
|---|---|---|---|---|
| Single/ muticores | Single core | | | |
| Installation Medthod |  |  |  |  |
| Type of Cable | IEC 60502-1 and special cable flame retardant (FR), low smoke and halogen free (LSHF) etc. | | | |
| Size (sq.mm.) | Current-carrying capacities (amperes) | | | |
| 1 | - | - | 15 | 14 |
| 1.5 | - | - | 20 | 18 |
| 2.5 | - | - | 27 | 24 |
| 4 | - | - | 36 | 32 |
| 6 | - | - | 47 | 40 |
| 10 | - | - | 65 | 55 |
| 16 | - | - | 87 | 73 |
| 25 | 118 | 106 | 108 | 96 |
| 35 | 147 | 131 | 134 | 116 |
| 50 | 190 | 159 | 163 | 140 |
| 70 | 244 | 202 | 208 | 177 |
| 95 | 297 | 245 | 253 | 212 |
| 120 | 345 | 284 | 293 | 244 |
| 150 | 397 | 311 | 338 | 273 |
| 185 | 455 | 349 | 386 | 309 |
| 240 | 537 | 410 | 455 | 362 |
| 300 | 620 | 468 | 524 | 414 |
| 400 | 722 | 531 | - | - |
| 500 | 823 | 606 | - | - |

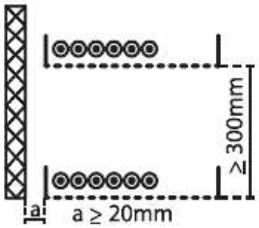
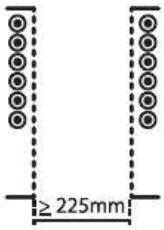
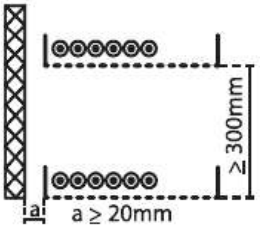
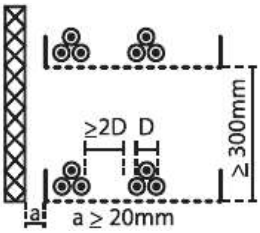
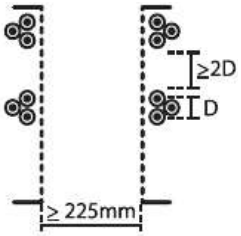
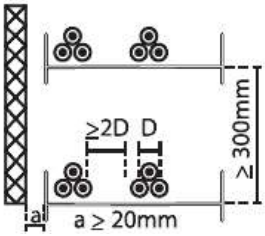
**Note (Table 5-33)**

1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43.
2) If number of conductor more than 1 circuit for install in ventilated, correction factor given in table 5-8 and table 5-41 for install in unventilated.

**Exception : If spacing for circuit more than two time of cable diameter, the correction factor do not apply.**

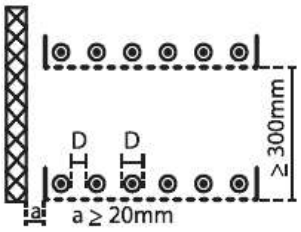
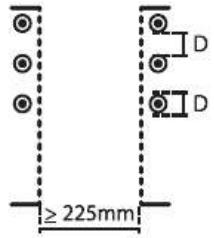
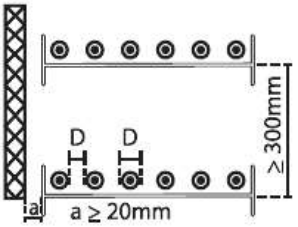
**Remark :** This page refer EIT Standard 2001-56

**Table 5-40:** The correction factor for grounps more than one circuit for Single core cable install on tray

| Installation Medthod | | No. of cable tray | Number of circuit per cable tray | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5-6 | 7-8 | |
| Perforated tray (note 2) |  | 1 | 1.00 | 0.91 | 0.87 | 0.82 | 0.78 | 0.77 | Cable in horizontal formation |
| | | 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 tray (note 3) |  | 1 | 1.00 | 0.86 | 0.80 | 0.75 | 0.71 | 0.70 | Cable in vertical formation |
| | | 2 | 0.95 | 0.84 | 0.77 | 0.72 | 0.67 | 0.66 | |
| Ladder cleats (note 2) |  | 1 | 1.00 | 0.97 | 0.96 | 0.94 | 0.93 | 0.92 | Cable in horrizontal formation |
| | | 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 tray (note 2) |  | 1 | 1.00 | 0.98 | 0.96 | 0.93 | 0.89 | - | Cable in trefoil formation space between circuit more than 2 time of cable diameter |
| | | 2 | 0.97 | 0.93 | 0.89 | 0.85 | 0.80 | - | |
| | | 3 | 0.96 | 0.92 | 0.86 | 0.82 | 0.76 | - | |
| Vertical perforated 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 | - | |
| Ladder cleats (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 | - | |

**Remark :** This page refer EIT Standard 2001-56

**Table 5-40:** The correction factor for grounps more than one circuit for Single core cable install on tray

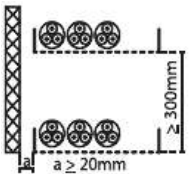
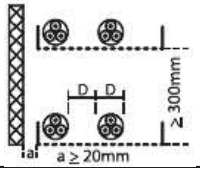
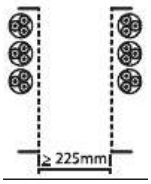
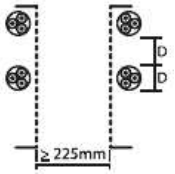
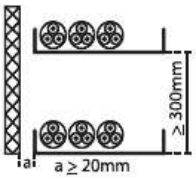
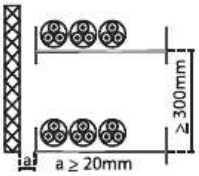
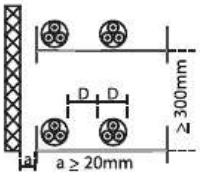
| Installation Medthod | | No. of cable tray | Number of circuit per cable tray | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5-6 | 7-9 | |
| Perforated tray (note 2) |  | 1 | 1.00 | 0.93 | 0.90 | 0.87 | 0.83 | - | Spacing between cable not less than diameter of cable |
| | | 2 | 0.97 | 0.89 | 0.85 | 0.81 | 0.76 | - | |
| | | 3 | 0.96 | 0.88 | 0.82 | 0.78 | 0.72 | - | |
| Vertical perforated 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 | - | |
| Ladder cleats (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 | - | |

**Note (Table 5-40)**

1) Factors are given for single layer of cables (or trefoil groups) only
2) Values are given for vertical spacing between trays of at least 300 mm. and at least 20 mm. between the trays and any wall only.
3) Values are given for horizontal spacing between trays of at least 225 mm. with trays mounted back to back only.
4) For trays having more than one circuit, the correction factor should be considered as a maximum circuit in tray.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-41:** The correction factor for groups more than one circuit for multi cores cable install on perforated or unperforated tray or ladder cleats

| Installation Medthod | | No. of cable tray | Number of circuit per cable tray | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 2 | 3 | 4 | 5-6 | 7-9 |
| Perforated 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 | 0.66 |
| | | 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 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 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 |
| Ladder cleats (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 | 0.60 | 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 | - |

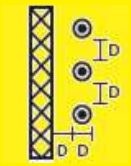
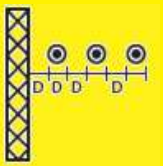
A

**Note (Table 5-41)**

1) Factors are given for single layer of cables (or trefoil groups) only as shown in table and do not apply when cables are installed in more than one layer touching each other.
2) Values are given for vertical spacing between trays of at least 300 mm. and at least 20 mm. between the trays and any wall only.
3) Values are given for horizontal spacing between trays of at least 225 mm. with trays mounted back to back only.
4) For trays having more than one circuit, the correction factor should be considered as a maximum circuit in tray.

**Remark :** This page refer EIT Standard 2001-56

**Table 5-42 :** Current-carrying capacities in amperes accordance TIS 293-2541 for aluminium conductor, PVC insulated for rated voltage 450/750 , conductor temperature 70°C / ambient temperature 40°C on insulator

| Installation Methods |  |  |
|---|---|---|
| Size (sq.mm.) | Current-carrying capacities (amperes) | |
| 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 |

A

**Note (Table 5-42)**
1) Where the ambient temperature in the intended location of the cable differs from 40°C (reference ambient temperature), the correction factor given in Table 5-43

**Remark :** This page refer EIT Standard 2001-56

**Table 5-43:** Correction factor for ambient air temperatures other than 40°C to be applied to current-carrying capacities for cables in free air

| Ambient Temperature (Degree celcius) | Insulation | | | |
|---|---|---|---|---|
| | PVC | XLPE or EPR | MI | |
| | | | 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 | 1.05 | 1.09 | 1.04 |
| 36-40 | 1.00 | 1.00 | 1.00 | 1.00 |
| 41-45 | 0.91 | 0.96 | 0.91 | 0.96 |
| 46-50 | 0.82 | 0.90 | 0.79 | 0.91 |
| 51-55 | 0.70 | 0.84 | 0.67 | 0.87 |
| 56-60 | 0.57 | 0.78 | 0.53 | 0.82 |
| 61-65 | - | 0.71 | - | 0.76 |
| 66-70 | - | 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 |

A

**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 (Degree celcius) | 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 |

**Remark :** This page refer EIT Standard 2001-56

**Table 5-45:** Correction factor for Single core or multi cores, rated voltaed 0.6/1 kV install in direct burial when group of circuit more than 1 circuit, flat horizontal

| No. of circuit | Space between outside of each cable (mm.) | | | | |
|---|---|---|---|---|---|
| | Touching | 1 time of 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 |

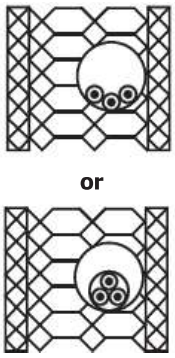
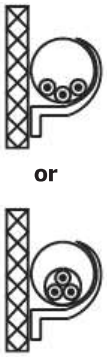
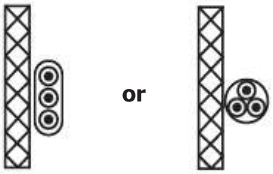
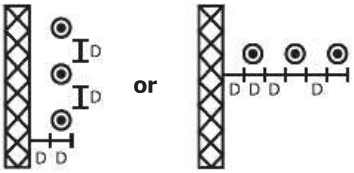
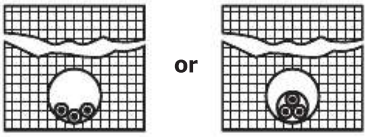
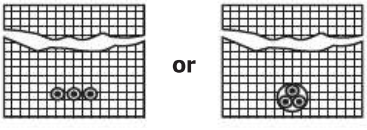


**Table 5-46:** Correction factor for Single core or multi cores, rated voltaed 0.6/1 kV install in conduit in direct burial when group of circuit more than 1 circuit, flat horizontal.

| No. of circuit | Space between outside of each cable (mm.) | | | |
|---|---|---|---|---|
| | Touching | 125 | 500 | 1000 |
| 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 |

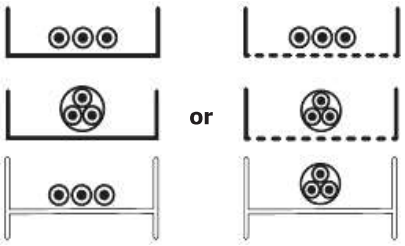
**Remark :** This page refer EIT Standard 2001-56

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

| Methods of Wiring | Methods of Installation | Group of Installation | Note |
|---|---|---|---|
| Insulated conductors single core or multi cores with or without sheathed wiring in metallic or non-metallic conduit in thermal insulated wall. |  | Group 1 | Ceiling or thermal insulated wall has a thermal conductant not less than 10 W/m² · K |
| Insulated conductors single core or multi cores with or without sheathed wiring in metallic or non-metallic conduit in concrete wall. |  | Group 2 | The inner skin of the concrete has a thermal conductant not greater than 2 K.m/W |
| Single core or multi cores cable ,insulated and sheathed on a wall |  | Group 3 | - |
| Single core or multi cores cable, insulated with or without sheathed wiring in spacing on insulator |  | Group 4 | Spacing between cable and cable, wall and cable not less than diameter of cable. |
| Single core or multi cores cable with sheathed install in duct in ground |  | Group 5 | - |
| Single core or multi cores cable with sheathed install direct burial |  | Group 6 | - |

**Remark :** This page refer EIT Standard 2001-56

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

| Methods of Wiring | Methods of Installation | Group of Installation | Note |
|---|---|---|---|
| **Single core or multi cores cable with sheathed install on perforated or unperforated tray or ladder cleats.** |   | **Group 7** | **Perforated tray must have ventilated area not less than 30 percent of surface tray** |

A

**Note (Table 5-47)**
-If no confirmation that thermal conductant not less than 10 W/m²·K , consider that install in conduit in ceiling or thermal insulated wall shall be apply current carrying capacities in group 1.

**Remark :** This page refer EIT Standard 2001-56

## **Table 5-48:** Requirements for Installation copper conductor, PVC insulated cable according to TIS 11-2553

| Cable Name | Size ($mm^2$) | Type of Conductor | No. of core | Temp. of conductor | Sheath | Voltage Uo/U (V) | Application |
|---|---|---|---|---|---|---|---|
| 60227 IEC 01 | 1.5-400 | Solid or Stranded | 1 core | 70°C | - | 450/750 | - Installation in raceway, dry location<br>- Do not allow for under ground installing neither directly burial or in conduit in ground |
| 60227 IEC 02 | 1.5-240 | Flexible | 1 core | 70°C | - | 450/750 | - Installation in raceway, dry location<br>- Do not allow for under ground installing neither directly burial or in conduit in ground |
| 60227 IEC 05 | 0.5-1.0 | Solid or Stranded | 1 core | 70°C | - | 300/500 | - Installation in raceway, dry location<br>- Do not allow for under ground installing neither directly burial or in conduit in ground |
| 60227 IEC 06 | 0.5-1.0 | Flexible | 1 core | 70°C | - | 300/500 | - Installation in raceway, dry location<br>- Do not allow for under ground installing neither directly burial or in conduit in ground |
| 60227 IEC 07 | 0.5-2.5 | Solid | 1 core | 90°C | - | 300/500 | - Installation in raceway, dry location<br>- Do not allow for under ground installing neither directly burial or in conduit in ground |
| 60227 IEC 08 | 0.5-2.5 | Flexible | 1 core | 90°C | - | 300/500 | - Installation in raceway, dry location<br>- Do not allow for under ground installing neither directly burial or in conduit in ground |
| 60227 IEC 10 | 1.5-35 | Solid or Stranded | Multi-core<br>Multi-core with ground | 70°C | ✓ | 300/500 | - Installation exposed or in raceway, dry location<br>- Do not allow for under ground installing neither directly burial or in conduit in ground |
| 60227 IEC 41 | 0.8 | Stranded | 2 cores | 70°C | - | 300/300 | - For electronic appliances |
| 60227 IEC 43 | 0.5-0.75 | Flexible | 1 core | 70°C | ✓ | 300/300 | - Used in dry room for small indoor decorative lighting chains |
| 60227 IEC 52 | 0.5-0.75 | Flexible | Multi-core | 70°C | ✓ | 300/300 | - For mobile-electrical equipment , electrical appliances |
| 60227 IEC 53 | 0.75-2.5 | Flexible | Multi-core | 70°C | ✓ | 300/500 | - For mobile-electrical equipment , electrical appliances |
| 60227 IEC 56 | 0.5-0.75 | Flexible | Multi-core | 90°C | ✓ | 300/300 | - For mobile-electrical equipment , electrical appliances |
| 60227 IEC 57 | 0.75-2.5 | Flexible | Multi-core<br>Multi-core with ground | 90°C | ✓ | 300/500 | - For mobile-electrical equipment , electrical appliances |
| NYY | 1-500 | Stranded | 1 core | 70°C | ✓ | 450/750 | - Installation into trey, ladder<br>- Installation in conduit in ground or direct burial in ground |
| | 50-300 | | Multi-core | | | | |
| NYY-G | 25-300 | | Multi-core with ground | | | | |
| VAF | 1-16 | Solid or Stranded | 2 cores | 70°C | ✓ | 300/500 | - For surface or direct embeded in plaster<br>- Do not allow for installing in conduit.<br>- Do not allow for under ground installing neither directly burial or in conduit in ground |
| VAG-G | | | 2 cores with ground | | | | |
| VCT | 4-35 | Flexible | 1 core | 70°C | ✓ | 450/750 | - For electrical appliances<br>- Installation into trey, ladder<br>- Installation in conduit in ground or direct burial in ground |
| VCT-G | | | Multi-core | | | | |
| | | | Multi-core with ground | | | | |

**Remark :** This page refer EIT Standard 2001-56

A

# Voltage Drop for Single-Core Cable



**Table ฐ1 Single-core 70 °C PVC insulated copper conductor cables**

| Conductor cross sectional area | 2 cables, single-phase a.c. | | | 3 or 4 cables, three-phase a.c. | | | |
|---|---|---|---|---|---|---|---|
| | Group 1, 2 (enclosed in conduit or trunking) | Group 3, 7 (Clipped direct, on trey or in free air) | | Group 1, 2 (enclosed in conduit or trunking) | Group 3, 7 (Clipped direct, on trey or in free air) | | |
| | | Touching | Spaced | | Trefoil | Touching | Spaced |
| (mm²) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) |
| 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 |

**Table ฐ3 Single-core 90 °C XLPE insulated copper conductor cables**

| Conductor cross sectional area | 2 cables, single-phase a.c. | | | 3 or 4 cables, three-phase a.c. | | | |
|---|---|---|---|---|---|---|---|
| | Group 1, 2 (enclosed in conduit or trunking) | Group 3, 7 (Clipped direct, on trey or in free air) | | Group 1, 2 (enclosed in conduit or trunking) | Group 3, 7 (Clipped direct, on trey or in free air) | | |
| | | Touching | Spaced | | Trefoil | Touching | Spaced |
| (mm²) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) | (mV/A/m) |
| 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 |

**Remark :** This page refer EIT Standard 2001-56

# Voltage Drop for Multi-Cores Cable

## Table ฐ2 Multi-cores 70 °C PVC insulated copper conductor cable

| Conductor cross sectional area (mm²) | Two-core cable, single-phase a.c. (mV/A/m) | Three- or four-core cable, three-phase a.c. (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 |



## Table ฐ4 Multi-cores 90 °C XLPE insulated copper conductor cable

| Conductor cross sectional area (mm²) | Two-core cable, single-phase a.c. (mV/A/m) | Three- or four-core cable, three-phase a.c. (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 |

**Remark :** This page refer EIT Standard 2001-56

# Copper Conductor Cables

## Building Wires and Cables

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

| | | |
|---|---|---|
| 60227 IEC 01 THW | 450/750V 70°C SOILD AND STRANDED CONDUCTOR PVC INSULATED, SINGLE CORE | B1 |
| YK 60227 IEC 01 THW | 450/750V 70°C STRANDED CONDUCTOR PVC INSULATED SUPER SOFT SINGLE CORE | B3 |
| 60227 IEC 02 THW (f) | 450/750V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE | B4 |
| 60227 IEC 05 IV | 300/500 V 70°C SOLID CONDUCTOR PVC INSULATED, SINGLE CORE | B5 |
| 60227 IEC 06 IV (f) | 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE | B6 |
| 60227 IEC 07 HIV | 300/500 V 90°C SOLID CONDUCTOR PVC INSULATED, SINGLE CORE | B7 |
| 60227 IEC 08 HIV (f) | 300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED, SINGLE CORE | B8 |

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

| | | |
|---|---|---|
| 60227 IEC 10 | 300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED | B9 |

| | | |
|---|---|---|
| 60227 IEC 52 VKF | 300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE | B13 |
| 60227 IEC 52 | 300/300 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B14 |
| 60227 IEC 53 VKF | 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE | B15 |
| 60227 IEC 53 | 300/500 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B16 |
| 60227 IEC 56 HVKF | 300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE | B17 |
| 60227 IEC 56 | 300/300 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B18 |
| 60227 IEC 57 HVKF | 300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, FLAT TYPE | B19 |
| 60227 IEC 57 | 300/500 V 90°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B20 |

## 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 | B21 |
| VAF-G | 300/500 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, FLAT TYPE | B22 |
| NYY | 450/750 V 70°C SOLID AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED | B23 |
| YK NYY | 450/750 V 70°C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, SUPER SOFT POWER CABLE | B28 |
| NYY-G | 450/750 V 70°C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND | B32 |
| VCT | 450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH, ROUND TYPE | B38 |
| VCT-G | 450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATH WITH GROUND, ROUND TYPE | B41 |

# Low Voltage Power Cables

## Medium Voltage Power Cables



## High Voltage Power Cables



## Control Cables

## Automobile Wire and Cables



## Bare Conductor



B

# 60227 IEC 01 THW

**450/750V 70°C SOILD AND STRANDED CONDUCTOR PVC INSULATED, SINGLE CORE**

TIS 11 Part 3-2553


## CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper wire
: Sizes 1.5 mm² up to 400 mm²

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

**Core identification** : Single-cores : Any color

## 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

**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.

| Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40°C) (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Solid | 0.7 | 2.6 | 3.2 | 12.1 | 0.011 | 21 | 21 | 100/C |
| 1.5 | Stranded | 0.7 | 2.7 | 3.3 | 12.1 | 0.010 | 21 | 22 | 100/C |
| 2.5 | Solid | 0.8 | 3.2 | 3.9 | 7.41 | 0.010 | 28 | 32 | 100/C |
| 2.5 | Stranded | 0.8 | 3.3 | 4.0 | 7.41 | 0.009 | 28 | 35 | 100/C |
| 4 | Solid | 0.8 | 3.6 | 4.4 | 4.61 | 0.0085 | 37 | 47 | 100/C |
| 4 | Stranded | 0.8 | 3.8 | 4.6 | 4.61 | 0.0077 | 37 | 50 | 100/C |
| 6 | Solid | 0.8 | 4.1 | 5.0 | 3.08 | 0.0070 | 49 | 65 | 100/C |
| 10 | Solid | 1.0 | 5.3 | 6.4 | 1.83 | 0.0070 | 68 | 110 | 100/C |
| 300 | Stranded | 2.4 | 24.5 | 29.6 | 0.0601 | 0.0030 | 628 | 3,100 | 500/D |
| 400 | Stranded | 2.6 | 27.5 | 33.2 | 0.0470 | 0.0028 | 736 | 3,900 | 500/D |

C : Packing in Coil
D : Packing in Drum

B

# 60227 IEC 01 THW

**450/750V 70°C SOILD AND STRANDED CONDUCTOR PVC INSULATED, SINGLE CORE**

TIS 11 Part 3-2553


## CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper wire
: Sizes 1.5 mm² up to 400 mm²

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

**Core identification** : Single-cores : Any color

## 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

**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.

B

| Nominal cross sectional area ($mm^2$) | Conductor type | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 1.5 | Solid | 14.4777 | 0.5259 | 0.1652 | 14.4786 |
| 1.5 | Stranded | 14.4777 | 0.5276 | 0.1657 | 14.4786 |
| 2.5 | Solid | 8.8661 | 0.5121 | 0.1609 | 8.8675 |
| 2.5 | Stranded | 8.8661 | 0.5202 | 0.1634 | 8.8676 |
| 4 | Solid | 5.5159 | 0.4917 | 0.1545 | 5.5180 |
| 4 | Stranded | 5.5159 | 0.4929 | 0.1548 | 5.5181 |
| 6 | Solid | 3.6852 | 0.4742 | 0.1490 | 3.6883 |
| 10 | Solid | 2.1896 | 0.4694 | 0.1475 | 2.1946 |
| 300 | Stranded | 0.0734 | 0.4177 | 0.1312 | 0.1503 |
| 400 | Stranded | 0.0581 | 0.4160 | 0.1307 | 0.1430 |

# YK 60227 IEC 01 THW

**450/750V 70°C STRANDED CONDUCTOR PVC INSULATED SUPER SOFT SINGLE CORE**

SUPER SOFT YK SERIES CABLE

TIS 11 Part 3-2553


## CABLE STRUCTURE

**Conductor** : Stranded annealed copper wire
: Sizes 6 $mm^2$ up to 185 $mm^2$

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

**Core identification** : Single-cores : Any color

## 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

**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.

B

| Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40°C) (A) | Cable weight approx. (kg/km) | Standard Length (m) | Standard Length (m/D) | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6 | Non-Compacted | 0.8 | 4.3 | 5.2 | 3.08 | 0.0065 | 49 | 70 | 100/C | 1000 | 2000 |
| 10 | Non-Compacted | 1.0 | 5.6 | 6.7 | 1.83 | 0.0065 | 68 | 120 | 100/C | 1000 | 2000 |
| 16 | Compacted | 1.0 | 6.4 | 7.8 | 1.15 | 0.0050 | 91 | 180 | 100/C | 1000 | 2000 |
| 25 | Compacted | 1.2 | 8.1 | 9.7 | 0.727 | 0.0050 | 122 | 280 | 100/C | 1000 | 2000 |
| 35 | Compacted | 1.2 | 9.0 | 10.9 | 0.524 | 0.0043 | 151 | 370 | 100/C | 1000 | 2000 |
| 50 | Compacted | 1.4 | 10.6 | 12.8 | 0.387 | 0.0043 | 184 | 500 | 500/D | 1000 | 2000 |
| 70 | Compacted | 1.4 | 12.1 | 14.6 | 0.263 | 0.0035 | 234 | 700 | 500/D | 1000 | 2000 |
| 95 | Compacted | 1.6 | 14.1 | 17.1 | 0.193 | 0.0035 | 292 | 1000 | 500/D | 1000 | 2000 |
| 120 | Compacted | 1.6 | 15.6 | 18.8 | 0.153 | 0.0032 | 341 | 1200 | 500/D | 1000 | 2000 |
| 150 | Compacted | 1.8 | 17.3 | 20.9 | 0.124 | 0.0032 | 391 | 1500 | 500/D | 1000 | 2000 |
| 185 | Compacted | 2.0 | 19.3 | 23.3 | 0.0991 | 0.0032 | 454 | 1900 | 500/D | 1000 | 2000 |
| 240 | Compacted | 2.2 | 22.0 | 26.6 | 0.0754 | 0.0032 | 543 | 2500 | 500/D | 1000 | 2000 |

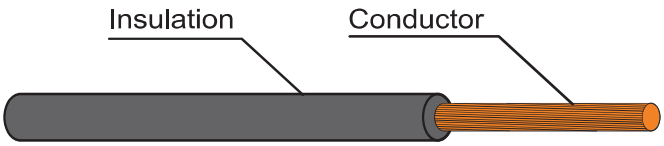
C : Packing in Coil

D : Packing in Drum

| Nominal cross sectional area ($mm^2$) | Conductor type | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 6 | Non-Compacted | 3.6852 | 0.5606 | 0.1761 | 3.6894 |
| 10 | Non-Compacted | 2.1896 | 0.5219 | 0.1639 | 2.1958 |
| 16 | Compacted | 1.3776 | 0.4642 | 0.1458 | 1.3838 |
| 25 | Compacted | 0.8700 | 0.4594 | 0.1443 | 0.8819 |
| 35 | Compacted | 0.6271 | 0.4496 | 0.1413 | 0.6428 |
| 50 | Compacted | 0.4633 | 0.4477 | 0.1407 | 0.4841 |
| 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 | 0.2279 |
| 150 | Compacted | 0.1491 | 0.4292 | 0.1348 | 0.2010 |
| 185 | Compacted | 0.1194 | 0.4281 | 0.1345 | 0.1799 |
| 240 | Compacted | 0.0914 | 0.4257 | 0.1337 | 0.1620 |

# 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
: Sizes 1.5 mm² up to 240 mm²

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

**Core identification** : Single-cores : Any color

## 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

**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.

B

| Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40°C) (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 1.5 | Flexible | 0.7 | 2.8 | 3.4 | 13.3 | 0.010 | 16 | 24 | 100/C |
| 2.5 | Flexible | 0.8 | 3.4 | 4.1 | 7.98 | 0.009 | 25 | 37 | 100/C |
| 4 | Flexible | 0.8 | 3.9 | 4.8 | 4.95 | 0.0070 | 30 | 54 | 100/C |
| 6 | Flexible | 0.8 | 4.4 | 5.3 | 3.30 | 0.0060 | 39 | 75 | 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 | 185 | 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 | 400 | 100/C |
| 50 | Flexible | 1.4 | 11.5 | 13.9 | 0.386 | 0.0037 | 175 | 555 | 500/D |
| 70 | Flexible | 1.4 | 13.2 | 16.0 | 0.272 | 0.0032 | 216 | 765 | 500/D |
| 95 | Flexible | 1.6 | 15.1 | 18.2 | 0.206 | 0.0032 | 258 | 1,000 | 500/D |
| 120 | Flexible | 1.6 | 16.7 | 20.2 | 0.161 | 0.0029 | 302 | 1,300 | 500/D |
| 150 | Flexible | 1.8 | 18.6 | 22.5 | 0.129 | 0.0029 | 347 | 1,600 | 500/D |
| 185 | Flexible | 2.0 | 20.6 | 24.9 | 0.106 | 0.0029 | 394 | 1,900 | 500/D |
| 240 | Flexible | 2.2 | 23.5 | 28.4 | 0.0801 | 0.0028 | 471 | 2,500 | 500/D |

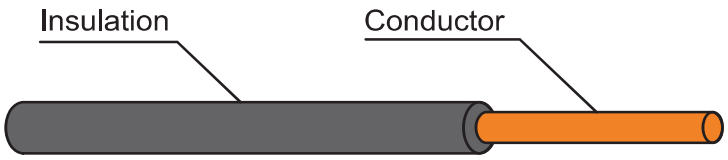
| Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|
| 1.5 | 15.9135 | 0.5149 | 0.1618 | 15.9143 |
| 2.5 | 9.5481 | 0.5038 | 0.1583 | 9.5494 |
| 4 | 5.9227 | 0.4846 | 0.1522 | 5.9246 |
| 6 | 3.9485 | 0.4637 | 0.1457 | 3.9512 |
| 10 | 2.2854 | 0.4531 | 0.1423 | 2.2898 |
| 16 | 1.4478 | 0.4437 | 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 |

C : Packing in Coil
D : Packing in Drum

# 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
: Sizes 0.5 mm² up to 1 mm²

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

**Core identification** : Single-cores : Any color

## 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

**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.

B

| Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40 °C) (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 0.5 | Solid | 0.6 | 1.9 | 2.3 | 36.0 | 0.015 | 3 | 8.8 | 100/C |
| 0.75 | Solid | 0.6 | 2.1 | 2.5 | 24.5 | 0.012 | 6 | 12 | 100/C |
| 1 | Solid | 0.6 | 2.2 | 2.7 | 18.1 | 0.011 | 10 | 14 | 100/C |

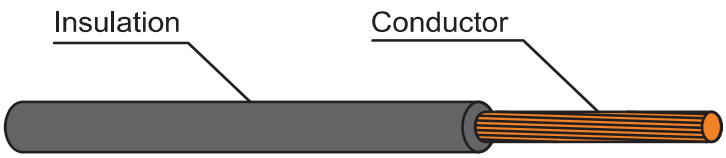
C : Packing in Coil

| Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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
: Sizes 0.5 mm² up to 1 mm²

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

**Core identification** : Single-cores : Any color

### 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 3-2553, Table 7

B

### APPLICATION

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

| Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40°C) (A) | Cable weight approx. (kg/km) | Standard Length (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 |

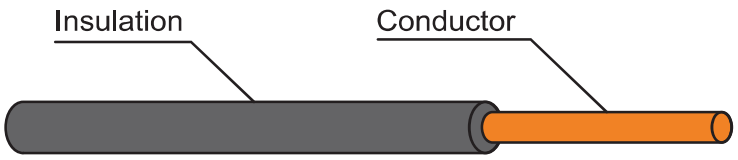
C : Packing in Coil

| Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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 |

# 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
: Sizes 0.5 mm² up to 2.5 mm²

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

**Core identification** : Single-cores : Any color

## 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

**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.

B

| Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 90°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40 °C) (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 0.5 | Solid | 0.6 | 1.9 | 2.3 | 36.0 | 0.015 | 3 | 8.6 | 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 |

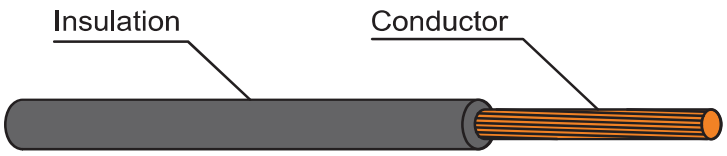
C : Packing in Coil

| Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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
: Sizes 0.5 mm² up to 2.5 mm²

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

**Core identification** : Single-cores : Any color

## 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

**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.

B

| Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 90°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40 °C) (A) | Cable weight approx. (kg/km) | Standard Length (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 | 0.012 | 6 | 12 | 100/C |
| 1 | Flexible | 0.6 | 2.4 | 2.8 | 19.5 | 0.010 | 10 | 15 | 100/C |
| 1.5 | Flexible | 0.7 | 2.8 | 3.4 | 13.3 | 0.009 | 16 | 21 | 100/C |
| 2.5 | Flexible | 0.8 | 3.4 | 4.1 | 7.98 | 0.009 | 25 | 33 | 100/C |

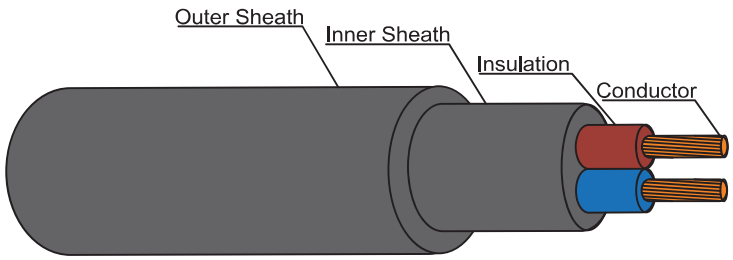
C : Packing in Coil

| Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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 | 9.5481 | 0.5038 | 0.1583 | 9.5494 |

# 60227 IEC 10

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

TIS 11 Part 4-2553




### CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper

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

**Core identification** **2** Cores : Blue, Brown

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 4-2553, Table 1

### APPLICATION

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

B

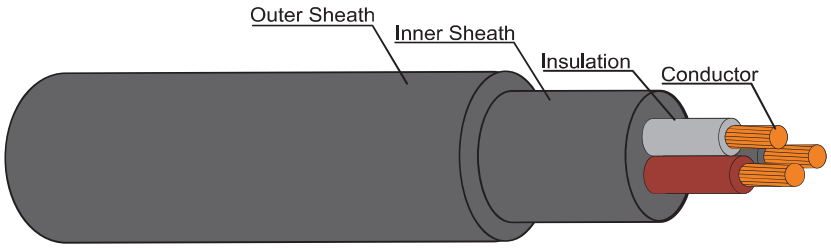
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor Type | Insulation thickness nominal (mm) | Inner sheath thickness approx. (mm) | Outer sheath thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40°C) (A) ladder or treys | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1.5 | Solid | 0.7 | 0.4 | 1.2 | 7.6 | 10.0 | 12.1 | 0.011 | 19 | 120 | 100/C |
| | 1.5 | Stranded | 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 | Stranded | 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 | 34 | 210 | 100/C |
| | 4 | Stranded | 0.8 | 0.4 | 1.2 | 10.0 | 13.0 | 4.61 | 0.0077 | 34 | 220 | 100/C |
| | 6 | Solid | 0.8 | 0.4 | 1.2 | 1.5 | 13.5 | 3.08 | 0.0070 | 44 | 270 | 100/C |
| | 6 | Stranded | 0.8 | 0.4 | 1.2 | 11.0 | 14.0 | 3.08 | 0.0065 | 44 | 290 | 100/C |
| | 10 | Solid | 1.0 | 0.6 | 1.4 | 13.0 | 16.5 | 1.83 | 0.0070 | 60 | 420 | 500/D |
| | 10 | Stranded | 1.0 | 0.6 | 1.4 | 13.5 | 17.5 | 1.83 | 0.0065 | 60 | 460 | 500/D |
| | 16 | Stranded | 1.0 | 0.6 | 1.4 | 15.5 | 20.0 | 1.15 | 0.0052 | 80 | 650 | 500/D |
| | 25 | Stranded | 1.2 | 0.8 | 1.4 | 18.5 | 24.0 | 0.727 | 0.0050 | 107 | 950 | 500/D |
| | 35 | Stranded | 1.2 | 1.0 | 1.6 | 21.0 | 27.5 | 0.524 | 0.0044 | 131 | 1,300 | 500/D |

C : Packing in Coil
D : Packing in Drum

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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 | Solid | 3.6853 | 0.2951 | 0.0927 | 3.6864 |
| | 6 | Stranded | 3.6853 | 0.3011 | 0.0946 | 3.6865 |
| | 10 | Solid | 2.1897 | 0.2891 | 0.0908 | 2.1915 |
| | 10 | Stranded | 2.1897 | 0.2943 | 0.0925 | 2.1916 |
| | 16 | Stranded | 1.3761 | 0.2773 | 0.0871 | 1.3788 |
| | 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 AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED**




TIS 11 Part 4-2553

## CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper

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

**Core identification** **3** Cores : Brown, Black, Grey or Blue, Brown,Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 4-2553, Table 1

B

## APPLICATION

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

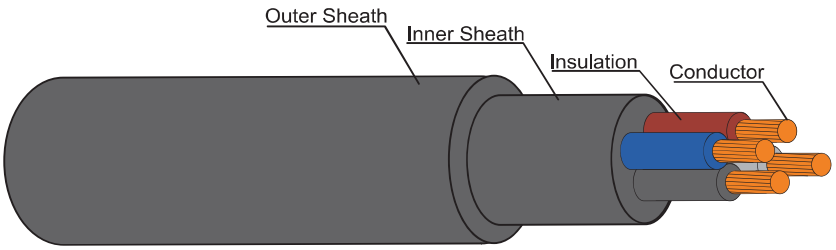
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor Type | Insulation thickness nominal (mm) | Inner sheath thickness approx. (mm) | Outer sheath thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40°C) (A) ladder or treys | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1.5 | Solid | 0.7 | 0.4 | 1.2 | 8.0 | 10.5 | 12.1 | 0.011 | 16 | 140 | 100/C |
| | 1.5 | Stranded | 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 | Stranded | 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 | Stranded | 0.8 | 0.4 | 1.2 | 10.5 | 13.5 | 4.61 | 0.0077 | 30 | 270 | 100/C |
| | 6 | Solid | 0.8 | 0.4 | 1.4 | 11.5 | 14.5 | 3.08 | 0.0070 | 37 | 340 | 100/C |
| | 6 | Stranded | 0.8 | 0.4 | 1.4 | 12.0 | 15.5 | 3.08 | 0.0065 | 37 | 370 | 100/C |
| | 10 | Solid | 1.0 | 0.6 | 1.4 | 14.0 | 17.5 | 1.83 | 0.0070 | 52 | 520 | 500/D |
| | 10 | Stranded | 1.0 | 0.6 | 1.4 | 14.5 | 19.0 | 1.83 | 0.0065 | 52 | 570 | 500/D |
| | 16 | Stranded | 1.0 | 0.8 | 1.4 | 16.5 | 27.5 | 1.15 | 0.0052 | 70 | 810 | 500/D |
| | 25 | Stranded | 1.2 | 0.8 | 1.6 | 20.5 | 26.0 | 0.727 | 0.0050 | 88 | 1,200 | 500/D |
| | 35 | Stranded | 1.2 | 1.0 | 1.6 | 22.0 | 29.0 | 0.524 | 0.0044 | 110 | 1,600 | 500/D |

C : Packing in Coil
D : Packing in Drum

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor Type | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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 | 8.8667 |
| | 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 | Solid | 3.6853 | 0.2951 | 0.0927 | 3.6864 |
| | 6 | Stranded | 3.6853 | 0.3011 | 0.0946 | 3.6865 |
| | 10 | Solid | 2.1897 | 0.2891 | 0.0908 | 2.1916 |
| | 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 AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED**




TIS 11 Part 4-2553

## CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper

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

**Core identification** 4 Cores: Blue, Brown, Black, Grey
or Brown, Black, Grey and Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 4-2553, Table 1

## APPLICATION

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

B

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor Type | Insulation thickness nominal (mm) | Inner sheath thickness approx. (mm) | Outer sheath thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40°C) (A) ladder or treys | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1.5 | Solid | 0.7 | 0.4 | 1.2 | 8.6 | 11.5 | 12.1 | 0.011 | 16 | 160 | 100/C |
| | 1.5 | Stranded | 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 | Stranded | 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 | Stranded | 0.8 | 0.4 | 1.4 | 12.0 | 15.0 | 4.61 | 0.0077 | 30 | 340 | 100/C |
| | 6 | Solid | 0.8 | 0.6 | 1.4 | 12.5 | 16.0 | 3.08 | 0.0070 | 37 | 440 | 500/D |
| | 6 | Stranded | 0.8 | 0.6 | 1.4 | 13.0 | 17.0 | 3.08 | 0.0065 | 37 | 470 | 500/D |
| | 10 | Solid | 1.0 | 0.6 | 1.4 | 15.5 | 19.0 | 1.83 | 0.0070 | 52 | 660 | 500/D |
| | 10 | Stranded | 1.0 | 0.6 | 1.4 | 16.0 | 20.5 | 1.83 | 0.0065 | 52 | 700 | 500/D |
| | 16 | Stranded | 1.0 | 0.8 | 1.4 | 18.0 | 23.5 | 1.15 | 0.0052 | 70 | 1,000 | 500/D |
| | 25 | Stranded | 1.2 | 1.0 | 1.6 | 22.5 | 28.5 | 0.727 | 0.0050 | 88 | 1,600 | 500/D |
| | 35 | Stranded | 1.2 | 1.0 | 1.6 | 24.5 | 32.0 | 0.524 | 0.0044 | 110 | 2,000 | 500/D |

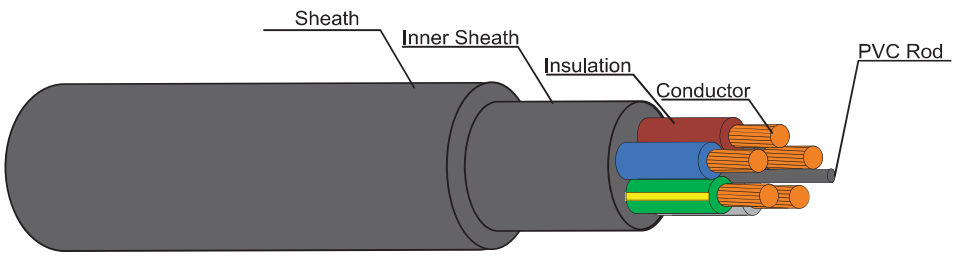
C : Packing in Coil
D : Packing in Drum

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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 | Solid | 3.6853 | 0.2951 | 0.0927 | 3.6864 |
| | 6 | Stranded | 3.6853 | 0.3011 | 0.0946 | 3.6865 |
| | 10 | Solid | 2.1897 | 0.2891 | 0.0908 | 2.1916 |
| | 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 AND STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED

TIS 11 Part 4-2553




### CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper

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

**Core identification** 5 Cores: Blue, Brown, Black, Grey and Black or Blue, Brown, Black, Grey and Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 4-2553, Table 1

### APPLICATION

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

B

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor Type | Insulation thickness nominal (mm) | Inner sheath thickness approx. (mm) | Outer sheath thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air maximum (40°C) (A) ladder or treys | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.5 | Solid | 0.7 | 0.7 | 1.2 | 9.4 | 12.0 | 12.1 | 0.011 | 16 | 200 | 100/C |
| | 1.5 | Stranded | 0.7 | 0.7 | 1.2 | 9.8 | 12.5 | 12.1 | 0.010 | 16 | 220 | 100/C |
| | 2.5 | Solid | 0.8 | 0.8 | 1.2 | 11.0 | 14.0 | 7.41 | 0.010 | 22 | 280 | 100/C |
| | 2.5 | Stranded | 0.8 | 0.8 | 1.2 | 11.0 | 14.5 | 7.41 | 0.009 | 22 | 310 | 100/C |
| | 4 | Solid | 0.8 | 0.8 | 1.4 | 12.5 | 16.0 | 4.61 | 0.0085 | 30 | 410 | 100/C |
| | 4 | Stranded | 0.8 | 0.8 | 1.4 | 13.0 | 17.0 | 4.61 | 0.0077 | 30 | 430 | 100/C |
| 5 | 6 | Solid | 0.8 | 0.8 | 1.4 | 13.5 | 17.5 | 3.08 | 0.0070 | 37 | 530 | 500/D |
| | 6 | Stranded | 0.8 | 0.8 | 1.4 | 14.5 | 18.5 | 3.08 | 0.0065 | 37 | 570 | 500/D |
| | 10 | Solid | 1.0 | 1.0 | 1.4 | 17.0 | 21.0 | 1.83 | 0.0070 | 52 | 800 | 500/D |
| | 10 | Stranded | 1.0 | 1.0 | 1.4 | 17.5 | 22.0 | 1.83 | 0.0065 | 52 | 870 | 500/D |
| | 16 | Stranded | 1.0 | 1.0 | 1.6 | 20.5 | 26.0 | 1.15 | 0.0052 | 70 | 1,300 | 500/D |
| | 25 | Stranded | 1.2 | 1.2 | 1.6 | 24.5 | 31.5 | 0.727 | 0.0050 | 88 | 1,900 | 500/D |
| | 35 | Stranded | 1.2 | 1.2 | 1.6 | 27.0 | 35.0 | 0.524 | 0.0044 | 110 | 2,500 | 500/D |

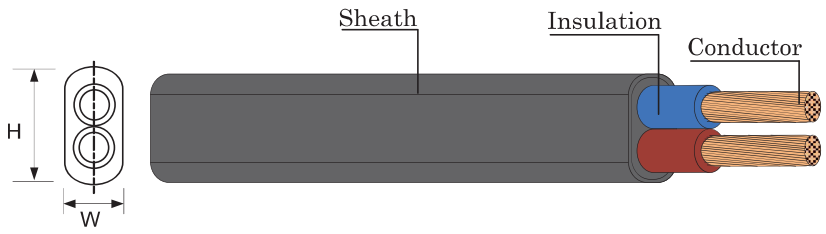
C : Packing in Coil
D : Packing in Drum

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|---|
| | 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 |
| 5 | 4 | Stranded | 5.5159 | 0.3164 | 0.0994 | 5.5168 |
| | 6 | Solid | 3.6853 | 0.2951 | 0.0927 | 3.6864 |
| | 6 | Stranded | 3.6853 | 0.3011 | 0.0946 | 3.6865 |
| | 10 | Solid | 2.1897 | 0.2891 | 0.0908 | 2.1916 |
| | 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 52 VKF

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

TIS 11 Part 5-2553




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper
: Sizes 0.5 mm² up to 0.75 mm²

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

**Core identification**
2 Cores : Blue and Brown

**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

**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 | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter | | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous current rating in free air at 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 | 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 |

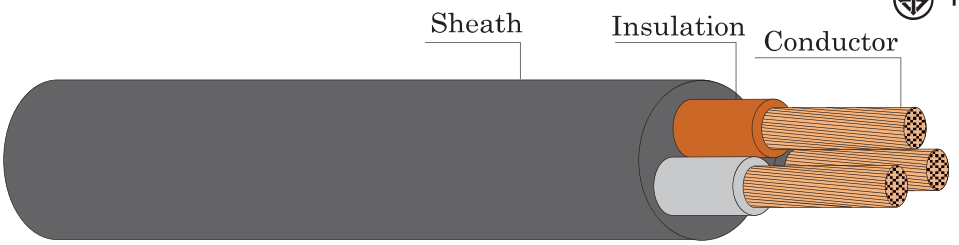
C = Packing in coil

B

# 60227 IEC 52

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

TIS 11 Part 5-2553




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper
: Sizes 0.5 mm² up to 0.75 mm²

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

**Core identification**
2 Cores : Blue and Brown
3 Cores : Brown, Black, Grey
or Blue, Brown and 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 5-2553 Table 7

### APPLICATION

For household appliances, electrical equipment and electrical illumination.

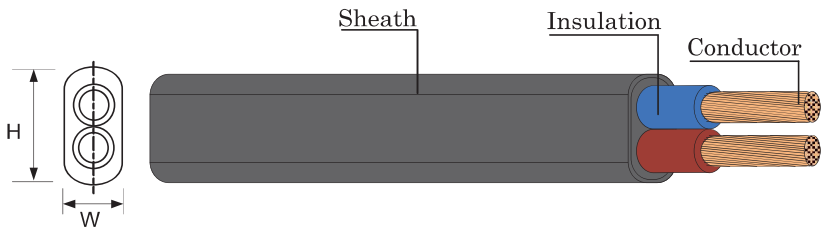
B

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 58 | 100/C |

# 60227 IEC 53 VKF

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

TIS 11 Part 5-2553




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper
: Sizes 0.75 mm² up to 1 mm²

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

**Core identification**
2 Cores : Blue and Brown

**Sheath** : Black polyvinyl chloride (PVC/ST5)

### 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 5-2553 Table 9

### APPLICATION

For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter W X H Minimum (mm) | Overall diameter W X H Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 |

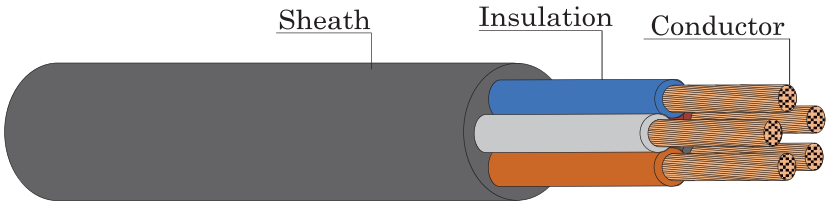
C = Packing in coil

B

# 60227 IEC 53

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

TIS 11 Part 5-2553




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper
: Sizes 0.75 mm² up to 2.5 mm²

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

**Core identification**

| | |
|---|---|
| 2 Cores | : Blue and Brown |
| 3 Cores | : Brown, Black, Grey<br>or Blue, Brown and Green/Yellow |
| 4 Cores | : Blue, Brown, Black and Grey<br>or Brown, Black, Grey and Green/Yellow |
| 5 Cores | : Blue, Brown, Black, Grey and Black<br>or Blue, Brown, Black, Grey and Green/Yellow |

**Sheath** : Black polyvinyl chloride (PVC/ST5)

### 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 5-2553 Table 9

B

### APPLICATION

For household appliances, electrical equipment and electrical illumination.

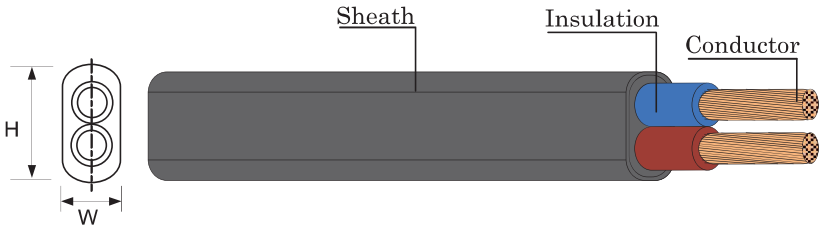
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 | 93 | 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 | 82 | 100/C |
| | 1.5 | Flexible | 0.7 | 0.8 | 7.4 | 9.4 | 13.3 | 0.010 | 16 | 115 | 100/C |
| | 2.5 | Flexible | 0.8 | 1.0 | 9.2 | 11.4 | 7.98 | 0.009 | 20 | 175 | 100/C |
| 4 | 0.75 | Flexible | 0.6 | 0.8 | 6.6 | 8.3 | 26.0 | 0.011 | 6 | 84 | 100/C |
| | 1 | Flexible | 0.6 | 0.8 | 7.1 | 9.0 | 19.5 | 0.010 | 10 | 105 | 100/C |
| | 1.5 | Flexible | 0.7 | 0.8 | 8.4 | 10.5 | 13.3 | 0.010 | 16 | 145 | 100/C |
| | 2.5 | Flexible | 0.8 | 1.0 | 10.1 | 12.5 | 7.98 | 0.009 | 20 | 215 | 100/C |
| 5 | 0.75 | Flexible | 0.6 | 0.8 | 7.4 | 9.3 | 26.0 | 0.011 | 6 | 105 | 100/C |
| | 1 | Flexible | 0.6 | 0.8 | 7.8 | 9.8 | 19.5 | 0.010 | 10 | 125 | 100/C |
| | 1.5 | Flexible | 0.7 | 1.1 | 9.3 | 11.6 | 13.3 | 0.010 | 16 | 175 | 100/C |
| | 2.5 | Flexible | 0.8 | 1.2 | 11.2 | 13.9 | 7.98 | 0.009 | 20 | 265 | 100/C |

C = Packing in coil

# 60227 IEC 56 HVKF

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

TIS 11 Part 5-2553




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper
: Sizes 0.5 mm² up to 0.75 mm²

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

**Core identification**
2 Cores : Blue and Brown

**Sheath** : Black polyvinyl chloride (PVC/ST10)

### TECHNICAL DATA

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

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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 5-2553 Table 11

### APPLICATION

For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter W x H Minimum (mm) | Overall diameter W x H Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 90°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 0.5 | 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 |

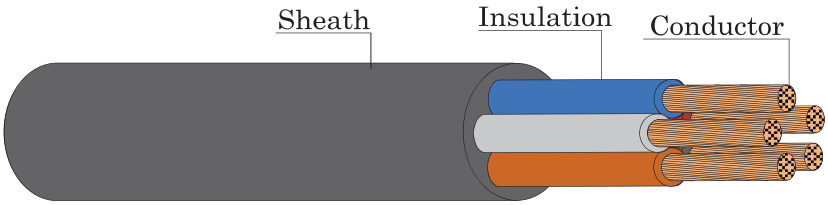
C = Packing in coil

B

# 60227 IEC 56

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

TIS 11 Part 5-2553




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper
: Sizes 0.5 mm² up to 0.75 mm²

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

**Core identification**
2 Cores : Blue and Brown
3 Cores : Brown, Black, Grey
or Blue, Brown and Green/Yellow

**Sheath** : Black polyvinyl chloride (PVC/ST10)

### TECHNICAL DATA

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

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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 5-2553 Table 11

B

### APPLICATION

For household appliances, electrical equipment and electrical illumination.

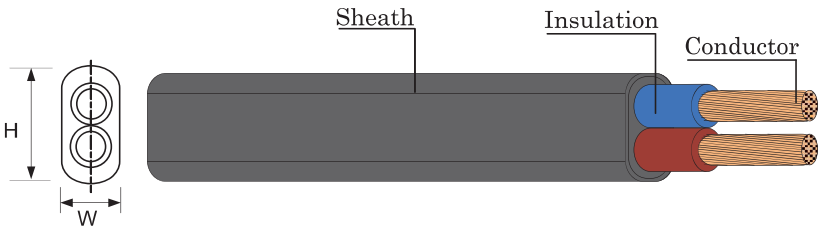
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 90°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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

**Conductor** : Flexible annealed copper
: Sizes 0.75 mm² up to 1 mm²

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

**Core identification**
2 Cores : Blue and Brown

**Sheath** : Black polyvinyl chloride (PVC/ST10)

### 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 5-2553 Table 13

### APPLICATION

For household appliances, electrical equipment and electrical illumination.

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter W x H Minimum (mm) | Overall diameter W x H Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 90°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 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 |

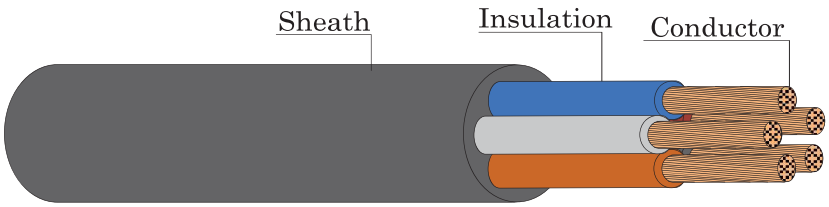
C = Packing in coil

B

# 60227 IEC 57

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

TIS 11 Part 5-2553




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper
: Sizes 0.75 mm² up to 2.5 mm²

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

**Core identification**

| | |
|---|---|
| 2 Cores | : Blue and Brown |
| 3 Cores | : Brown, Black, Grey or Blue, Brown and Green/Yellow |
| 4 Cores | : Blue, Brown, Black and Grey or Brown, Black, Grey and Green/Yellow |
| 5 Cores | : Blue, Brown, Black, Grey and Black or Blue, Brown, Black, Grey and Green/Yellow |

**Sheath** : Black polyvinyl chloride (PVC/ST10)

### 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 5-2553 Table 13

B

### APPLICATION

For household appliances, electrical equipment and electrical illumination.

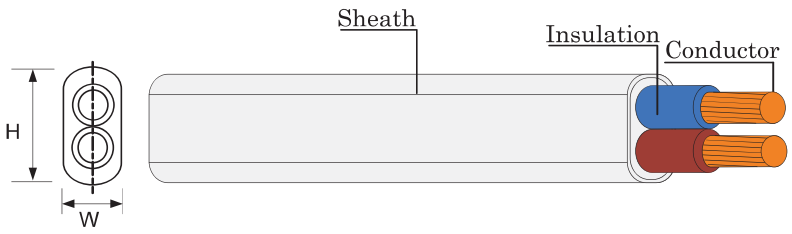
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter Minimum (mm) | Overall diameter Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 90°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 0.75 | Flexible | 0.6 | 0.8 | 5.7 | 7.2 | 26.0 | 0.011 | 6 | 57 | 100/C |
| | 1 | Flexible | 0.6 | 0.8 | 5.9 | 7.5 | 19.5 | 0.010 | 10 | 66 | 100/C |
| | 1.5 | Flexible | 0.7 | 0.8 | 6.8 | 8.6 | 13.3 | 0.010 | 16 | 89 | 100/C |
| | 2.5 | Flexible | 0.8 | 1.0 | 8.4 | 10.6 | 7.98 | 0.009 | 25 | 135 | 100/C |
| 3 | 0.75 | Flexible | 0.6 | 0.8 | 6.0 | 7.6 | 26.0 | 0.011 | 6 | 66 | 100/C |
| | 1 | Flexible | 0.6 | 0.8 | 6.3 | 8.0 | 19.5 | 0.010 | 10 | 78 | 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 | 1.0 | 9.2 | 11.4 | 7.98 | 0.009 | 20 | 170 | 100/C |
| 4 | 0.75 | Flexible | 0.6 | 0.8 | 6.6 | 8.3 | 26.0 | 0.011 | 6 | 80 | 100/C |
| | 1 | Flexible | 0.6 | 0.9 | 7.1 | 9.0 | 19.5 | 0.010 | 10 | 99 | 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 | 205 | 100/C |
| 5 | 0.75 | Flexible | 0.6 | 0.9 | 7.4 | 9.3 | 26.0 | 0.011 | 6 | 99 | 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 | 250 | 100/C |

C = Packing in coil

# VAF

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

TIS 11 Part 101-2559




### CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper

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

**Core identification**
2 Cores : Blue and Brown

**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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 1

### APPLICATION

Building wiring for surface or above ceiling wiring or direct embeded in plaster.

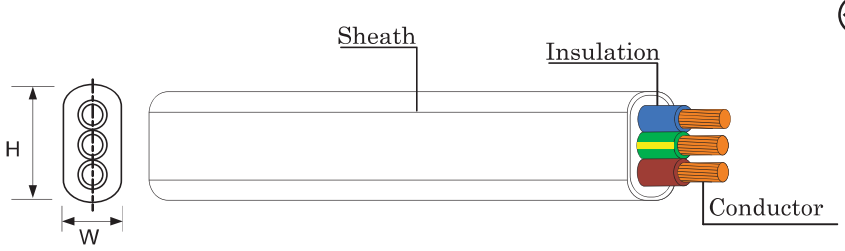
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Outer sheath thickness nominal (mm) | Overall diameter W X H Minimum (mm) | Overall diameter W X H Maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous current rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | Solid | 0.6 | 0.9 | 4.0 x 6.2 | 4.7 x 7.4 | 18.1 | 0.0110 | 14 | 50 | 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 | Stranded | 0.8 | 1.1 | 5.6 x 9.6 | 7.2 x 11.5 | 4.61 | 0.0077 | 32 | 150 | 100/C |
| | 6 | Stranded | 0.8 | 1.1 | 6.4 x 10.5 | 8.0 x 13.0 | 3.08 | 0.0065 | 41 | 200 | 100/C |
| | 10 | Stranded | 1.0 | 1.2 | 7.8 x 13.0 | 9.6 x 16.0 | 1.83 | 0.0065 | 56 | 310 | 100/C |
| | 16 | Stranded | 1.0 | 1.3 | 9.0 x 15.5 | 11.0 x 18.5 | 1.15 | 0.0052 | 74 | 450 | 100/C |

B

# VAF-G

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

TIS 11 Part 101-2559




### CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper

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

**Core identification**
2 Cores + Ground : Blue, Brown and 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

**Testing voltage** : 2,000 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 1

B

### APPLICATION

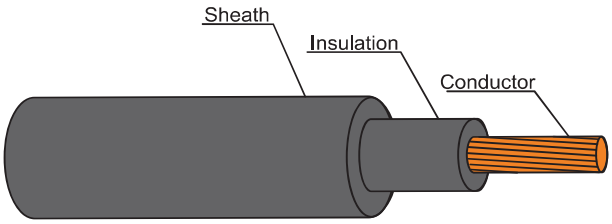
Building wiring for surface or above ceiling wiring or direct embeded in plaster.

| Number of cores | Nominal cross sectional area | | Conductor type | Insulation thickness nominal | Outer sheath thickness nominal | Overall diameter | | 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 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Phase ($mm^2$) | Ground ($mm^2$) | | (mm) | (mm) | W x H Minimum (mm) | W x H Maximum (mm) | Phase (Ω/km) | Ground (Ω/km) | (MΩ-km) | (A) | (kg/km) | (m) |
| 2 | 1 | 1 | Solid | 0.6 | 0.9 | 4.0 x 6.2 | 4.7 x 7.4 | 18.1 | 18.1 | 0.0110 | 14 | 75 | 100/C |
| | 1.5 | 1.5 | Solid | 0.7 | 0.9 | 4.4 x 7.0 | 5.4 x 8.4 | 12.1 | 12.1 | 0.0110 | 17 | 100 | 100/C |
| | 2.5 | 2.5 | Solid | 0.8 | 1.0 | 5.2 x 8.4 | 6.2 x 9.8 | 7.41 | 7.41 | 0.0100 | 23 | 150 | 100/C |
| | 4 | 4 | Stranded | 0.8 | 1.1 | 5.6 x 9.6 | 7.2 x 11.5 | 4.61 | 4.61 | 0.0077 | 32 | 220 | 100/C |
| | 6 | 6 | Stranded | 0.8 | 1.1 | 6.4 x 10.5 | 8.0 x 13.0 | 3.08 | 3.08 | 0.0065 | 41 | 290 | 100/C |
| | 10 | 10 | Stranded | 1.0 | 1.2 | 7.8 x 13.0 | 9.6 x 16.0 | 1.83 | 1.83 | 0.0065 | 56 | 460 | 100/C |
| | 16 | 16 | Stranded | 1.0 | 1.3 | 9.0 x 15.5 | 11.0 x 18.5 | 1.15 | 1.15 | 0.0052 | 74 | 650 | 500/D |

C = Packing in coil
D = Packing in drum

# NYY

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




TIS 11 Part 101-2559

### CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper

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

**Core identification** Single-cores : Black

**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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 3

### APPLICATION

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

| Number of core | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced | Touching | Trefoil | | | |
| 1 | 1 | Solid | 1.5 | 1.8 | 8.6 | 18.1 | 0.0207 | 19 | 16 | 15 | 21 | 80 | 100/C |
| | 1 | Stranded | 1.5 | 1.8 | 8.8 | 18.1 | 0.0200 | 19 | 16 | 15 | 21 | 80 | 100/C |
| | 1.5 | Solid | 1.5 | 1.8 | 9.0 | 12.1 | 0.0184 | 24 | 19 | 19 | 26 | 85 | 100/C |
| | 1.5 | Stranded | 1.5 | 1.8 | 9.2 | 12.1 | 0.0175 | 24 | 19 | 19 | 26 | 90 | 100/C |
| | 2.5 | Solid | 1.5 | 1.8 | 9.4 | 7.41 | 0.0157 | 32 | 24 | 26 | 35 | 100 | 100/C |
| | 2.5 | Stranded | 1.5 | 1.8 | 9.8 | 7.41 | 0.0146 | 32 | 24 | 26 | 35 | 110 | 100/C |
| | 4 | Solid | 1.5 | 1.8 | 10.0 | 4.61 | 0.0135 | 42 | 33 | 34 | 45 | 120 | 100/C |
| | 4 | Stranded | 1.5 | 1.8 | 10.5 | 4.61 | 0.0124 | 42 | 33 | 34 | 45 | 130 | 100/C |
| | 300 | Stranded | 2.5 | 2.2 | 35.0 | 0.0601 | 0.0032 | 617 | 511 | 488 | 507 | 3,400 | 500/D |
| | 400 | Stranded | 2.7 | 2.2 | 38.5 | 0.0470 | 0.0030 | 741 | 599 | 571 | 577 | 4,300 | 500/D |
| | 500 | Stranded | 3.1 | 2.4 | 43.0 | 0.0366 | 0.0031 | 854 | 686 | 652 | 654 | 5,400 | 500/D |

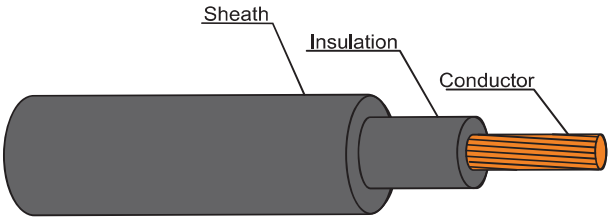
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

B

# NYY

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




TIS 11 Part 101-2559

### CABLE STRUCTURE

**Conductor** : Solid and stranded annealed copper

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

**Core identification** Single-cores : Black,

**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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 3

B

### APPLICATION

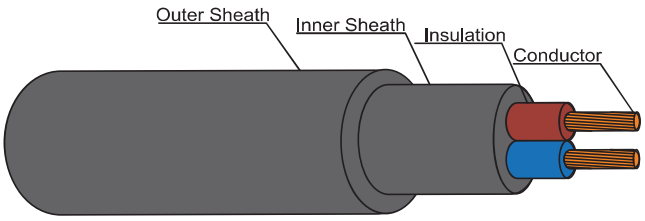
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of core | Nominal cross sectional area ($mm^2$) | Conductor type | 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 | Solid | 21.6567 | 21.6567 | 21.6567 | 0.7840 | 0.6454 | 0.5991 | 0.2463 | 0.2027 | 0.1882 | 21.6581 | 21.6576 | 21.6575 |
| | 1 | Stranded | 21.6567 | 21.6567 | 21.6567 | 0.7740 | 0.6353 | 0.5891 | 0.2431 | 0.1996 | 0.1851 | 21.6580 | 21.6576 | 21.6574 |
| | 1.5 | Solid | 14.4777 | 14.4777 | 14.4777 | 0.7485 | 0.6099 | 0.5637 | 0.2352 | 0.1916 | 0.1771 | 14.4796 | 14.4789 | 14.4787 |
| | 1.5 | Stranded | 14.4777 | 14.4777 | 14.4777 | 0.7388 | 0.6001 | 0.5539 | 0.2321 | 0.1885 | 0.1740 | 14.4795 | 14.4789 | 14.4787 |
| | 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 |
| | 2.5 | Stranded | 8.8661 | 8.8661 | 8.8661 | 0.7025 | 0.5639 | 0.5176 | 0.2207 | 0.1771 | 0.1626 | 8.8688 | 8.8678 | 8.8676 |
| | 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 |
| | 4 | Stranded | 5.5159 | 5.5159 | 5.5159 | 0.6649 | 0.5263 | 0.4801 | 0.2089 | 0.1653 | 0.1508 | 5.5198 | 5.5184 | 5.5179 |
| | 300 | Stranded | 0.0733 | 0.0740 | 0.0745 | 0.4517 | 0.3131 | 0.2668 | 0.1419 | 0.0984 | 0.0838 | 0.1597 | 0.1231 | 0.1122 |
| | 400 | Stranded | 0.0580 | 0.0589 | 0.0596 | 0.4465 | 0.3079 | 0.2617 | 0.1403 | 0.0967 | 0.0822 | 0.1518 | 0.1132 | 0.1015 |
| | 500 | Stranded | 0.0460 | 0.0471 | 0.0480 | 0.4460 | 0.3074 | 0.2612 | 0.1401 | 0.0966 | 0.0820 | 0.1475 | 0.1074 | 0.0951 |

# NYY

## 450/750 V 70° C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 2 Cores : Blue, Brown

**Inner sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black polyvinyl chloride

## TECHNICAL DATA

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

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

**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

B

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | Solid | 0.8 | 0.8 | 1.8 | 12.0 | 18.1 | 0.0141 | 15 | 21 | 170 | 100/C |
| | 1 | Stranded | 0.8 | 0.8 | 1.8 | 12.5 | 18.1 | 0.0135 | 15 | 21 | 170 | 100/C |
| | 1.5 | Solid | 0.8 | 0.8 | 1.8 | 12.5 | 12.1 | 0.0123 | 19 | 27 | 180 | 100/C |
| | 1.5 | Stranded | 0.8 | 0.8 | 1.8 | 13.0 | 12.1 | 0.0116 | 19 | 27 | 200 | 100/C |
| | 2.5 | Solid | 0.8 | 0.8 | 1.8 | 13.5 | 7.41 | 0.0102 | 25 | 35 | 220 | 100/C |
| | 2.5 | Stranded | 0.8 | 0.8 | 1.8 | 14.0 | 7.41 | 0.0093 | 25 | 35 | 240 | 100/C |
| | 4 | Solid | 0.9 | 0.8 | 1.8 | 15.0 | 4.61 | 0.0094 | 33 | 47 | 290 | 100/C |
| | 4 | Stranded | 0.9 | 0.8 | 1.8 | 15.5 | 4.61 | 0.0085 | 33 | 47 | 310 | 100/C |
| | 95 | Stranded | 1.7 | 1.5 | 2.2 | 42.5 | 0.193 | 0.0038 | 245 | 288 | 3300 | 500/D |
| | 120 | Stranded | 1.7 | 1.5 | 2.4 | 46.5 | 0.153 | 0.0034 | 285 | 329 | 4000 | 500/D |
| | 150 | Stranded | 1.9 | 1.8 | 2.6 | 52.0 | 0.124 | 0.0034 | 325 | 368 | 4900 | 500/D |
| | 185 | Stranded | 2.1 | 1.8 | 2.8 | 57.0 | 0.0991 | 0.0034 | 374 | 417 | 6000 | 500/D |
| | 240 | Stranded | 2.3 | 2.0 | 3.0 | 64.0 | 0.0754 | 0.0033 | 440 | 481 | 8000 | 300/D |
| | 300 | Stranded | 2.5 | 2.0 | 3.2 | 70.5 | 0.0601 | 0.0032 | 505 | 541 | 9500 | 300/D |

C : Packing in coil
D : Packing in drum

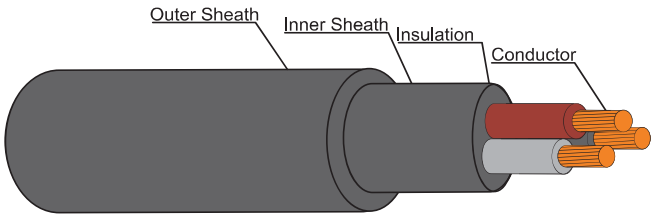
**Remark :** Thermal resistivity of soil 1.2 K.m./W or °C.m/W
Deep of laying (For cable laid direct in ground) 0.8 m

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|---|
| 2 | 1 | Solid | 21.7000 | 0.3771 | 0.1185 | 21.7000 |
| | 1 | Stranded | 21.7000 | 0.3651 | 0.1147 | 21.7000 |
| | 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 |
| | 95 | Stranded | 0.2317 | 0.2480 | 0.0779 | 0.2444 |
| | 120 | Stranded | 0.1840 | 0.2409 | 0.0757 | 0.1990 |
| | 150 | Stranded | 0.1495 | 0.2402 | 0.0755 | 0.1675 |
| | 185 | Stranded | 0.1201 | 0.2401 | 0.0754 | 0.1418 |
| | 240 | Stranded | 0.0922 | 0.2361 | 0.0742 | 0.1183 |
| | 300 | Stranded | 0.0744 | 0.2343 | 0.0736 | 0.1047 |

# NYY

## 450/750 V 70° C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 3 Cores : Brown,Black, Grey

**Inner sheath** : Black polyvinyl chloride (PVC)

**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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

B

## APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | Solid | 0.8 | 0.8 | 1.8 | 12.5 | 18.1 | 0.0141 | 13 | 18 | 180 | 100/C |
| | 1 | Stranded | 0.8 | 0.8 | 1.8 | 13.0 | 18.1 | 0.0135 | 13 | 18 | 190 | 100/C |
| | 1.5 | Solid | 0.8 | 0.8 | 1.8 | 13.0 | 12.1 | 0.0123 | 16 | 22 | 210 | 100/C |
| | 1.5 | Stranded | 0.8 | 0.8 | 1.8 | 13.5 | 12.1 | 0.0116 | 16 | 22 | 220 | 100/C |
| | 2.5 | Solid | 0.8 | 0.8 | 1.8 | 14.0 | 7.41 | 0.0102 | 22 | 30 | 260 | 100/C |
| | 2.5 | Stranded | 0.8 | 0.8 | 1.8 | 15.0 | 7.41 | 0.0093 | 22 | 30 | 270 | 100/C |
| | 4 | Solid | 0.9 | 0.8 | 1.8 | 15.5 | 4.61 | 0.0094 | 30 | 39 | 34 | 100/C |
| | 4 | Stranded | 0.9 | 0.8 | 1.8 | 16.5 | 4.61 | 0.0085 | 30 | 39 | 360 | 100/C |
| | 95 | Stranded | 1.7 | 1.5 | 2.4 | 46.0 | 0.193 | 0.0038 | 207 | 267 | 4200 | 500/D |
| | 120 | Stranded | 1.7 | 1.8 | 2.6 | 50.5 | 0.153 | 0.0034 | 240 | 304 | 5000 | 500/D |
| | 150 | Stranded | 1.9 | 1.8 | 2.8 | 56.0 | 0.124 | 0.0034 | 278 | 342 | 6500 | 500/D |
| | 185 | Stranded | 2.1 | 2.0 | 3.0 | 61.5 | 0.0991 | 0.0034 | 317 | 386 | 8000 | 300/D |
| | 240 | Stranded | 2.3 | 2.0 | 3.2 | 69.0 | 0.0754 | 0.0033 | 374 | 448 | 10000 | 300/D |
| | 300 | Stranded | 2.5 | 2.2 | 3.4 | 76.0 | 0.0601 | 0.0032 | 432 | 507 | 12500 | 200/D |

C : Packing in coil
D : Packing in drum

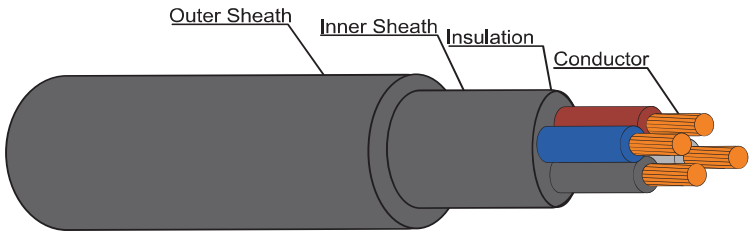
**Remark :** Thermal resistivity of soil 1.2 K.m./W or °C.m/W
Deep of laying (For cable laid direct in ground) 0.8 m

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|---|
| 3 | 1 | Solid | 21.7000 | 0.3771 | 0.1185 | 21.7000 |
| | 1 | Stranded | 21.7000 | 0.3651 | 0.1147 | 21.7000 |
| | 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 |
| | 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 |

# NYY

## 450/750 V 70° C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire
: Multi-core : Sizes 50 mm² up to 300 mm²

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

**Core identification** 4 Cores : Blue, Brown, Black, Grey

**Inner sheath** : Black polyvinyl chloride (PVC)

**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

**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

B

| Number of cores | Nominal cross sectional area (mm²) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1 | Solid | 0.8 | 0.8 | 1.8 | 13.5 | 18.1 | 0.0141 | 13 | 18 | 210 | 100/C |
| | 1 | Stranded | 0.8 | 0.8 | 1.8 | 14.0 | 18.1 | 0.0135 | 13 | 18 | 220 | 100/C |
| | 1.5 | Solid | 0.8 | 0.8 | 1.8 | 14.0 | 12.1 | 0.0123 | 16 | 22 | 240 | 100/C |
| | 1.5 | Stranded | 0.8 | 0.8 | 1.8 | 14.5 | 12.1 | 0.0116 | 16 | 22 | 260 | 100/C |
| | 2.5 | Solid | 0.8 | 0.8 | 1.8 | 15.0 | 7.41 | 0.0102 | 22 | 30 | 300 | 100/C |
| | 2.5 | Stranded | 0.8 | 0.8 | 1.8 | 16.0 | 7.41 | 0.0093 | 22 | 30 | 320 | 100/C |
| | 4 | Solid | 0.9 | 0.8 | 1.8 | 17.0 | 4.61 | 0.0094 | 30 | 39 | 400 | 100/C |
| | 4 | Stranded | 0.9 | 0.8 | 1.8 | 17.5 | 4.61 | 0.0085 | 30 | 39 | 430 | 100/C |
| | 95 | Stranded | 1.7 | 1.8 | 2.6 | 51.5 | 0.193 | 0.0038 | 207 | 267 | 5500 | 500/D |
| | 120 | Stranded | 1.7 | 1.8 | 2.8 | 56.0 | 0.153 | 0.0034 | 240 | 304 | 6500 | 500/D |
| | 150 | Stranded | 1.9 | 2.0 | 3.0 | 62.0 | 0.124 | 0.0034 | 278 | 342 | 8000 | 300/D |
| | 185 | Stranded | 2.1 | 2.0 | 3.2 | 68.0 | 0.0991 | 0.0034 | 317 | 386 | 10000 | 300/D |
| | 240 | Stranded | 2.3 | 2.2 | 3.4 | 76.5 | 0.0754 | 0.0033 | 374 | 448 | 13000 | 200/D |
| | 300 | Stranded | 2.5 | 2.2 | 3.8 | 85.0 | 0.0601 | 0.0032 | 432 | 507 | 16000 | 200/D |

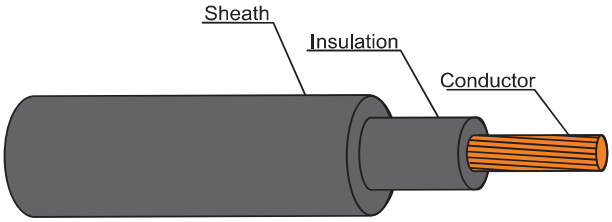
**Remark :** Thermal resistivity of soil 1.2 K.m./W or °C.m/W
Deep of laying (For cable laid direct in ground) 0.8 m

C : Packing in coil
D : Packing in drum

| Number of cores | Nominal cross sectional area (mm²) | Conductor type | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|---|
| 4 | 1 | Solid | 21.7000 | 0.3771 | 0.1185 | 21.7000 |
| | 1 | Stranded | 21.7000 | 0.3651 | 0.1147 | 21.7000 |
| | 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 |
| | 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 |

# YK NYY

## 450/750 V 70° C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, SUPER SOFT POWER CABLE




TIS 11 Part 101-2559

### CABLE STRUCTURE

**Conductor** : Stranded annealed copper wire

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

**Core identification** 1 Cores : Black

**Inner sheath** : Black polyvinyl choride (PVC)

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 3

B

### APPLICATION

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

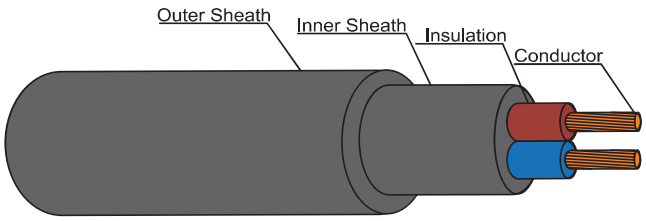
| Number of core | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | | | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length per drum (m) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced | Touching | Trefoil | | | | |
| 1 | 6 | Non-compact | 1.5 | 1.8 | 11.0 | 3.08 | 0.0107 | 54 | 42 | 43 | 57 | 160 | 1000 | 2000 |
| | 10 | Non-compact | 1.5 | 1.8 | 12.0 | 1.83 | 0.0088 | 73 | 57 | 59 | 76 | 210 | 1000 | 2000 |
| | 16 | Compacted | 1.5 | 1.8 | 13.0 | 1.15 | 0.0074 | 96 | 76 | 78 | 99 | 290 | 1000 | 2000 |
| | 25 | Compacted | 1.5 | 1.8 | 14.5 | 0.727 | 0.0061 | 127 | 99 | 96 | 128 | 390 | 1000 | 2000 |
| | 35 | Compacted | 1.5 | 1.8 | 16.0 | 0.524 | 0.0053 | 157 | 124 | 119 | 154 | 490 | 1000 | 2000 |
| | 50 | Compacted | 1.5 | 1.8 | 17.0 | 0.387 | 0.0046 | 191 | 151 | 145 | 181 | 600 | 1000 | 2000 |
| | 70 | Compacted | 1.5 | 1.8 | 19.0 | 0.268 | 0.0039 | 244 | 196 | 188 | 223 | 850 | 1000 | 2000 |
| | 95 | Compacted | 1.7 | 1.8 | 21.5 | 0.193 | 0.0038 | 297 | 239 | 230 | 267 | 1100 | 1000 | 2000 |
| | 120 | Compacted | 1.7 | 1.8 | 23.0 | 0.153 | 0.0034 | 345 | 279 | 268 | 304 | 1300 | 1000 | 2000 |
| | 150 | Compacted | 1.9 | 2.0 | 26.0 | 0.124 | 0.0034 | 397 | 324 | 310 | 342 | 1600 | 1000 | 2000 |
| | 185 | Compacted | 2.1 | 2.0 | 28.0 | 0.0991 | 0.0034 | 453 | 371 | 356 | 386 | 2000 | 1000 | 2000 |
| | 240 | Compacted | 2.3 | 2.2 | 31.5 | 0.0754 | 0.0033 | 535 | 441 | 422 | 448 | 2800 | 1000 | 1200 |

**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

| Number of core | Nominal cross sectional area ($mm^2$) | 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 | 6 | 3.6852 | 3.6852 | 3.6852 | 0.6360 | 0.4974 | 0.4512 | 0.1998 | 0.1563 | 0.1417 | 3.6907 | 3.6886 | 3.6880 |
| | 10 | 2.1896 | 2.1896 | 2.1896 | 0.5999 | 0.4612 | 0.4150 | 0.1885 | 0.1449 | 0.1304 | 2.1977 | 2.1944 | 2.1935 |
| | 16 | 1.3760 | 1.3761 | 1.3761 | 0.5702 | 0.4315 | 0.3853 | 0.1791 | 0.1356 | 0.1210 | 1.3876 | 1.3827 | 1.3814 |
| | 25 | 0.8700 | 0.8700 | 0.8700 | 0.5450 | 0.4064 | 0.3602 | 0.1712 | 0.1277 | 0.1132 | 0.8866 | 0.8793 | 0.8773 |
| | 35 | 0.6271 | 0.6272 | 0.6272 | 0.5175 | 0.3789 | 0.3327 | 0.1626 | 0.1190 | 0.1045 | 0.6478 | 0.6384 | 0.6358 |
| | 50 | 0.4632 | 0.4633 | 0.4634 | 0.5023 | 0.3637 | 0.3175 | 0.1578 | 0.1143 | 0.0997 | 0.4894 | 0.4772 | 0.4740 |
| | 70 | 0.3210 | 0.3211 | 0.3212 | 0.4862 | 0.3476 | 0.3014 | 0.1527 | 0.1092 | 0.0947 | 0.3555 | 0.3391 | 0.3348 |
| | 95 | 0.2313 | 0.2315 | 0.2317 | 0.4772 | 0.3386 | 0.2923 | 0.1499 | 0.1064 | 0.0918 | 0.2757 | 0.2548 | 0.2492 |
| | 120 | 0.1836 | 0.1838 | 0.1840 | 0.4664 | 0.3278 | 0.2816 | 0.1465 | 0.1030 | 0.0885 | 0.2349 | 0.2107 | 0.2420 |
| | 150 | 0.1490 | 0.1493 | 0.1496 | 0.4663 | 0.3276 | 0.2814 | 0.1465 | 0.1029 | 0.0884 | 0.2090 | 0.1814 | 0.1737 |
| | 185 | 0.1194 | 0.1198 | 0.1201 | 0.4622 | 0.3235 | 0.2773 | 0.1452 | 0.1016 | 0.0871 | 0.1880 | 0.1571 | 0.1484 |
| | 240 | 0.0913 | 0.0918 | 0.0922 | 0.4568 | 0.3182 | 0.2719 | 0.1435 | 0.1000 | 0.0854 | 0.1701 | 0.1357 | 0.1257 |

# YK NYY

**450/750 V 70° C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, SUPER SOFT POWER CABLE**




TIS 11 Part 101-2559

## CABLE STRUCTURE

**Conductor** : Stranded annealed copper wire

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

**Core identification** 2 Cores : Blue, Brown

**Inner sheath** : Black polyvinyl choride (PVC)

**Sheath** : Black polyvinyl choride (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

**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 ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length per drum (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 6 | Non-Compacted | 0.9 | 0.8 | 1.8 | 17.0 | 3.08 | 0.0073 | 43 | 60 | 370 | 1000 |
| | 10 | Non-Compacted | 1.1 | 0.8 | 1.8 | 19.5 | 1.83 | 0.0069 | 60 | 81 | 550 | 1000 |
| | 16 | Compacted | 1.1 | 0.8 | 2.0 | 22.5 | 1.15 | 0.0057 | 80 | 105 | 1000 | 1000 |
| | 25 | Compacted | 1.3 | 1.2 | 2.0 | 27.0 | 0.727 | 0.0054 | 108 | 136 | 1000 | 1000 |
| | 35 | Compacted | 1.3 | 1.2 | 2.0 | 29.5 | 0.524 | 0.0047 | 132 | 165 | 1000 | 1000 |
| | 50 | Compacted | 1.5 | 1.2 | 2.2 | 33.5 | 0.387 | 0.0046 | 160 | 195 | 1700 | 1000 |
| | 70 | Compacted | 1.5 | 1.5 | 2.2 | 38.0 | 0.268 | 0.0039 | 200 | 239 | 2300 | 1000 |

**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

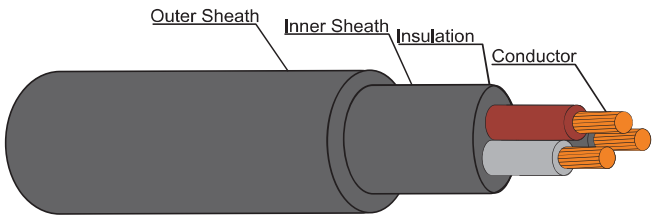
| Number of cores | Nominal cross sectional area ($mm^2$) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 2 | 6 | 3.6900 | 0.2869 | 0.0901 | 3.6910 |
| | 10 | 2.1900 | 0.2801 | 0.0880 | 2.1920 |
| | 16 | 1.3800 | 0.2631 | 0.0827 | 1.3820 |
| | 25 | 0.8700 | 0.2607 | 0.0819 | 0.8738 |
| | 35 | 0.6272 | 0.2593 | 0.0814 | 0.6325 |
| | 50 | 0.4634 | 0.2604 | 0.0818 | 0.4706 |
| | 70 | 0.3212 | 0.2506 | 0.0787 | 0.3307 |

B

# YK NYY

## 450/750 V 70° C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, SUPER SOFT POWER CABLE

TIS 11 Part 101-2559




### CABLE STRUCTURE

**Conductor** : Stranded annealed copper wire

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

**Core identification** 3 Cores : Brown, Black, Grey

**Inner sheath** : Black polyvinyl choride (PVC)

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

B

### APPLICATION

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

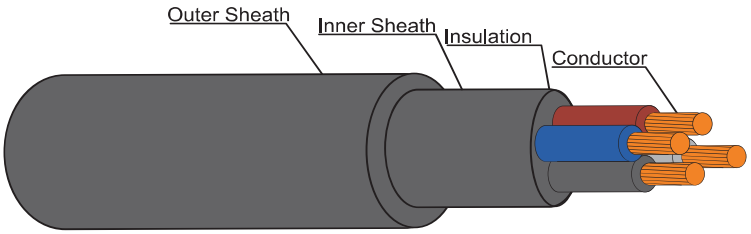
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length per drum (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 6 | Non-Compacted | 0.9 | 0.8 | 1.8 | 18.0 | 3.08 | 0.0073 | 37 | 50 | 440 | 1000 |
| | 10 | Non-Compacted | 1.1 | 0.8 | 1.8 | 20.5 | 1.83 | 0.0069 | 52 | 68 | 650 | 1000 |
| | 16 | Compacted | 1.1 | 1.2 | 2.0 | 24.5 | 1.15 | 0.0057 | 70 | 87 | 900 | 1000 |
| | 25 | Compacted | 1.3 | 1.2 | 2.0 | 28.5 | 0.727 | 0.0054 | 88 | 128 | 1300 | 1000 |
| | 35 | Compacted | 1.3 | 1.2 | 2.0 | 31.5 | 0.524 | 0.0047 | 110 | 154 | 1600 | 1000 |
| | 50 | Compacted | 1.5 | 1.5 | 2.2 | 36.0 | 0.387 | 0.0046 | 133 | 181 | 2200 | 1000 |
| | 70 | Compacted | 1.5 | 1.5 | 2.2 | 40.5 | 0.268 | 0.0039 | 171 | 223 | 2900 | 1000 |

**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

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 6 | 3.6900 | 0.2869 | 0.0901 | 3.6910 |
| | 10 | 2.1900 | 0.2801 | 0.0880 | 2.1920 |
| | 16 | 1.3800 | 0.2631 | 0.0827 | 1.3820 |
| | 25 | 0.8700 | 0.2607 | 0.0819 | 0.8738 |
| | 35 | 0.6273 | 0.2593 | 0.0814 | 0.6326 |
| | 50 | 0.4635 | 0.2604 | 0.0818 | 0.4707 |
| | 70 | 0.3213 | 0.2506 | 0.0787 | 0.3308 |

# YK NYY

**450/750 V 70° C STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATHED, SUPER SOFT POWER CABLE**




TIS 11 Part 101-2559

## CABLE STRUCTURE

**Conductor** : Stranded annealed copper wire

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

**Core identification** 4 Cores : Blue, Brown, Black, Grey

**Inner sheath** : Black polyvinyl choride (PVC)

**Sheath** : Black polyvinyl choride (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

**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 ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length per drum (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 6 | Non-Compacted | 0.9 | 0.8 | 1.8 | 19.0 | 3.08 | 0.0073 | 37 | 50 | 550 | 1000 |
| | 10 | Non-Compacted | 1.1 | 0.8 | 2.0 | 23.0 | 1.83 | 0.0069 | 52 | 68 | 800 | 1000 |
| | 16 | Compacted | 1.1 | 1.2 | 2.0 | 26.5 | 1.15 | 0.0057 | 70 | 87 | 1100 | 1000 |
| | 25 | Compacted | 1.3 | 1.2 | 2.0 | 31.0 | 0.727 | 0.0054 | 88 | 128 | 1600 | 1000 |
| | 35 | Compacted | 1.3 | 1.5 | 2.2 | 35.0 | 0.524 | 0.0047 | 110 | 154 | 2100 | 1000 |
| | 50 | Compacted | 1.5 | 1.5 | 2.2 | 39.5 | 0.387 | 0.0046 | 133 | 181 | 2800 | 1000 |
| | 70 | Compacted | 1.5 | 1.5 | 2.4 | 44.5 | 0.268 | 0.0039 | 171 | 223 | 3700 | 800 |

**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

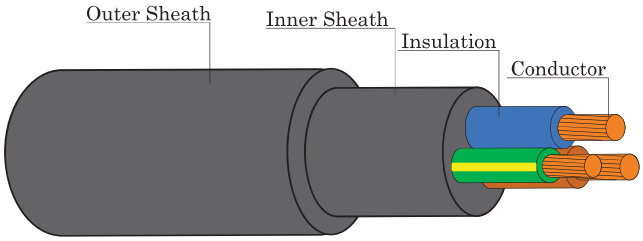
| Number of cores | Nominal cross sectional area ($mm^2$) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 4 | 6 | 3.6900 | 0.2869 | 0.0901 | 3.6910 |
| | 10 | 2.1900 | 0.2801 | 0.0880 | 2.1920 |
| | 16 | 1.3800 | 0.2631 | 0.0827 | 1.3820 |
| | 25 | 0.8700 | 0.2607 | 0.0819 | 0.8738 |
| | 35 | 0.6273 | 0.2593 | 0.0814 | 0.6326 |
| | 50 | 0.4635 | 0.2604 | 0.0818 | 0.4707 |
| | 70 | 0.3213 | 0.2506 | 0.0787 | 0.3308 |

B

# NYY-G

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

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** : 2 Cores + Ground : Blue, Brown, + Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 5

B

## APPLICATION

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

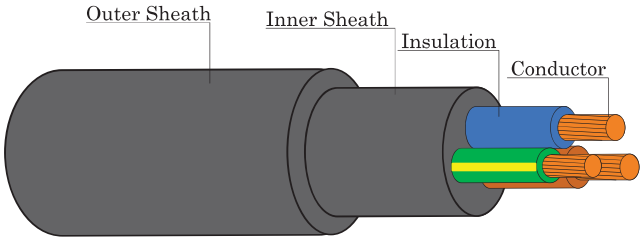
| Number of cores | Conductor | | | | Insulation thickness nominal | Inner Sheath thickness approx. | Outer Sheath thickness nominal | Overall diameter maximum | Conductor resistance maximum at 20°C | | Insulation resistance at 70°C minimum | Continuous currunt rating maximum | | Cable weight approx. | Standard length per drum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal cross section area | | Type of Conductor | | | | | | | | | on cable Ladder at 40°C | direct burial in ground at 30°C | | |
| | Phase | Ground | Phase | Ground | | | | | Phase | Ground | | | | | |
| | ($mm^2$) | ($mm^2$) | | | (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 | 180 | 500 |
| | 1 | 1 | Stranded | | 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 | 210 | 500 |
| | 1.5 | 1.5 | Stranded | | 0.8 | 0.8 | 1.8 | 14.0 | 12.1 | 12.1 | 0.0116 | 19 | 27 | 220 | 500 |
| | 2.5 | 2.5 | Solid | | 0.8 | 0.8 | 1.8 | 14.5 | 7.41 | 7.41 | 0.0102 | 25 | 35 | 260 | 500 |
| | 2.5 | 2.5 | Stranded | | 0.8 | 0.8 | 1.8 | 15.0 | 7.41 | 7.41 | 0.0093 | 25 | 35 | 270 | 500 |
| | 4 | 4 | Solid | | 0.9 | 0.8 | 1.8 | 16.0 | 4.61 | 4.61 | 0.0094 | 33 | 47 | 340 | 500 |
| | 4 | 4 | Stranded | | 0.9 | 0.8 | 1.8 | 16.5 | 4.61 | 4.61 | 0.0085 | 33 | 47 | 360 | 500 |
| | 6 | 6 | Stranded | | 0.9 | 0.8 | 1.8 | 18.0 | 3.08 | 3.08 | 0.0073 | 43 | 60 | 450 | 500 |
| | 10 | 10 | Stranded | | 1.1 | 0.8 | 1.8 | 21.0 | 1.83 | 1.83 | 0.0069 | 60 | 81 | 650 | 500 |
| | 16 | 16 | Stranded | | 1.1 | 0.8 | 2.0 | 23.5 | 1.15 | 1.15 | 0.0057 | 80 | 105 | 900 | 500 |
| | 25 | 16 | Stranded | | 1.3 | 1.2 | 2.0 | 28.0 | 0.727 | 0.727 | 0.0054 | 108 | 136 | 1200 | 500 |
| | 35 | 16 | Stranded | | 1.3 | 1.2 | 2.0 | 30.0 | 0.524 | 0.524 | 0.0047 | 132 | 165 | 1500 | 500 |
| | 50 | 25 | Stranded | | 1.5 | 1.2 | 2.2 | 34.0 | 0.387 | 0.387 | 0.0046 | 160 | 195 | 2000 | 500 |
| | 70 | 35 | Stranded | | 1.5 | 1.5 | 2.2 | 38.5 | 0.268 | 0.268 | 0.0039 | 200 | 239 | 2700 | 500 |
| | 95 | 50 | Stranded | | 1.7 | 1.5 | 2.2 | 43.5 | 0.193 | 0.193 | 0.0038 | 245 | 288 | 3600 | 500 |
| | 120 | 70 | Stranded | | 1.7 | 1.5 | 2.4 | 47.5 | 0.153 | 0.153 | 0.0034 | 285 | 329 | 4500 | 500 |
| | 150 | 95 | Stranded | | 1.9 | 1.8 | 2.6 | 53.0 | 0.124 | 0.124 | 0.0034 | 325 | 368 | 5500 | 500 |
| | 185 | 95 | Stranded | | 2.1 | 1.8 | 2.8 | 57.5 | 0.0991 | 0.0991 | 0.0034 | 374 | 417 | 6500 | 500 |
| | 240 | 120 | Stranded | | 2.3 | 2.0 | 3.0 | 64.5 | 0.0754 | 0.0754 | 0.0033 | 440 | 481 | 8500 | 500 |
| | 300 | 150 | Stranded | | 2.5 | 2.0 | 3.2 | 71.0 | 0.0601 | 0.0601 | 0.0032 | 505 | 541 | 10500 | 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 STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 2 Cores + Ground : Blue, Brown + Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 5

## APPLICATION

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

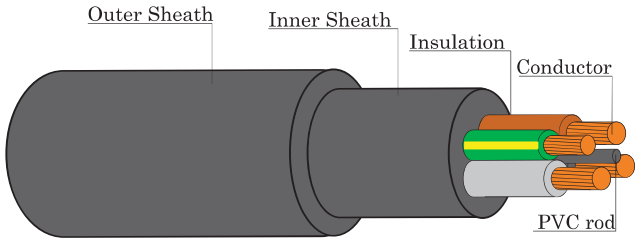
B

| Number of cores | Nominal cross section area | | A.C. Resistance | Inductance | Reactance | Impedance |
|---|---|---|---|---|---|---|
| | Phase ($mm^2$) | Ground ($mm^2$) | 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 | 0.2101 | 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 |

# NYY-G

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

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 3 Cores + Ground : Brown, Black, Grey + Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 5

B

## APPLICATION

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

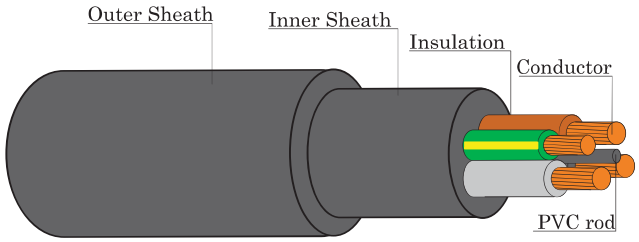
| Number of cores | Conductor | | | | Insulation thickness nominal | Inner Sheath thickness approx. | Outer Sheath thickness nominal | Overall diameter maximum | Conductor resistance maximum at 20°C | | Insulation resistance at 70°C minimum | Continuous currunt rating maximum | | Cable weight approx. | Standard length per drum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal cross section area | | Type of Conductor | | | | | | | | | on cable Ladder at 40°C | direct burial in ground at 30°C | | |
| | Phase | Ground | Phase | Ground | | | | | Phase | Ground | | | | | |
| | ($mm^2$) | ($mm^2$) | | | (mm) | (mm) | (mm) | (mm) | (Ω/km) | (Ω/km) | (MΩ-km) | (A) | (A) | (kg/km) | (m) |
| 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 | Stranded | | 0.8 | 0.8 | 1.8 | 14.0 | 18.1 | 18.1 | 0.0135 | 13 | 18 | 220 | 500 |
| | 1.5 | 1.5 | Solid | | 0.8 | 0.8 | 1.8 | 14.0 | 12.1 | 12.1 | 0.0123 | 16 | 22 | 240 | 500 |
| | 1.5 | 1.5 | Stranded | | 0.8 | 0.8 | 1.8 | 15.0 | 12.1 | 12.1 | 0.0116 | 16 | 22 | 260 | 500 |
| | 2.5 | 2.5 | Solid | | 0.8 | 0.8 | 1.8 | 15.5 | 7.41 | 7.41 | 0.0102 | 22 | 30 | 300 | 500 |
| | 2.5 | 2.5 | Stranded | | 0.8 | 0.8 | 1.8 | 16.0 | 7.41 | 7.41 | 0.0093 | 22 | 30 | 320 | 500 |
| | 4 | 4 | Solid | | 0.9 | 0.8 | 1.8 | 17.0 | 4.61 | 4.61 | 0.0094 | 30 | 39 | 400 | 500 |
| | 4 | 4 | Stranded | | 0.9 | 0.8 | 1.8 | 18.0 | 4.61 | 4.61 | 0.0085 | 30 | 39 | 430 | 500 |
| | 6 | 6 | Stranded | | 0.9 | 0.8 | 1.8 | 19.0 | 3.08 | 3.08 | 0.0073 | 37 | 50 | 550 | 500 |
| | 10 | 10 | Stranded | | 1.1 | 0.8 | 1.8 | 22.5 | 1.83 | 1.83 | 0.0069 | 52 | 68 | 800 | 500 |
| | 16 | 16 | Stranded | | 1.1 | 1.2 | 2.0 | 26.5 | 1.15 | 1.15 | 0.0057 | 70 | 87 | 1200 | 500 |
| | 25 | 16 | Stranded | | 1.3 | 1.2 | 2.0 | 30.5 | 0.727 | 0.727 | 0.0054 | 88 | 128 | 1600 | 500 |
| | 35 | 16 | Stranded | | 1.3 | 1.2 | 2.0 | 33.0 | 0.524 | 0.524 | 0.0047 | 110 | 154 | 1900 | 500 |
| | 50 | 25 | Stranded | | 1.5 | 1.5 | 2.2 | 38.5 | 0.387 | 0.387 | 0.0046 | 133 | 181 | 2600 | 500 |
| | 70 | 35 | Stranded | | 1.5 | 1.5 | 2.2 | 42.5 | 0.268 | 0.268 | 0.0039 | 171 | 223 | 3500 | 500 |
| | 95 | 50 | Stranded | | 1.7 | 1.5 | 2.4 | 48.5 | 0.193 | 0.193 | 0.0038 | 207 | 267 | 4700 | 500 |
| | 120 | 70 | Stranded | | 1.7 | 1.8 | 2.6 | 53.5 | 0.153 | 0.153 | 0.0034 | 240 | 304 | 6000 | 500 |
| | 150 | 95 | Stranded | | 1.9 | 1.8 | 2.8 | 59.0 | 0.124 | 0.124 | 0.0034 | 278 | 342 | 7500 | 500 |
| | 185 | 95 | Stranded | | 2.1 | 2.0 | 3.0 | 64.5 | 0.0991 | 0.0991 | 0.0034 | 317 | 386 | 9000 | 500 |
| | 240 | 120 | Stranded | | 2.3 | 2.0 | 3.2 | 72.0 | 0.0754 | 0.0754 | 0.0033 | 374 | 448 | 11500 | 300 |
| | 300 | 150 | Stranded | | 2.5 | 2.2 | 3.4 | 79.5 | 0.0601 | 0.0601 | 0.0032 | 432 | 507 | 14000 | 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 STRANDED CONDUCTOR PVC INSULATED AND DOUBLE SHEATH WITH GROUND**

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 3 Cores + Ground : Brown, Black, Grey + Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 5

## APPLICATION

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

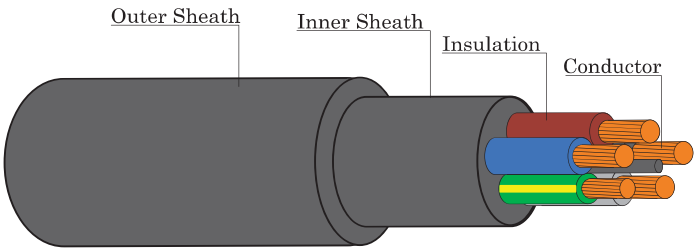
| Number of cores | Nominal cross section area | | A.C. Resistance | Inductance | Reactance | Impedance |
|---|---|---|---|---|---|---|
| | Phase ($mm^2$) | Ground ($mm^2$) | R (Ω/km) | L (mH/km) | XL (Ω/km) | Z (Ω/km) |
| 3+G | 1 | 1 | 21.7000 | 0.3771 | 0.1185 | 21.7000 |
| | 1 | 1 | 21.7000 | 0.3651 | 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 |
| | 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 |

B

# NYY-G

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

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 4 Cores + Ground : Blue, Brown, Black, Grey + Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 5

B

## APPLICATION

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

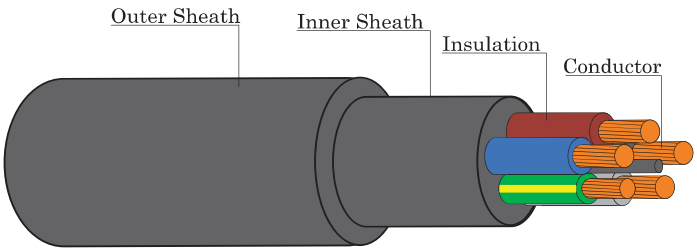
| Number of cores | Conductor | | | | Insulation thickness nominal | Inner Sheath thickness approx. | Outer Sheath thickness nominal | Overall diameter maximum | Conductor resistance maximum at 20°C | | Insulation resistance at 70°C minimum | Continuous currunt rating maximum | | Cable weight approx. | Standard length per drum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal cross section area | | Type of Conductor | | | | | | | | | on cable Ladder at 40°C | direct burial in ground at 30°C | | |
| | Phase | Ground | Phase | Ground | | | | | Phase | Ground | | | | | |
| | ($mm^2$) | ($mm^2$) | | | (mm) | (mm) | (mm) | (mm) | (Ω/km) | (Ω/km) | (MΩ-km) | (A) | (A) | (kg/km) | (m) |
| 4+G | 1 | 1 | Solid | | 0.8 | 0.8 | 1.8 | 14.5 | 18.1 | 18.1 | 0.0141 | 13 | 18 | 250 | 500 |
| | 1 | 1 | Stranded | | 0.8 | 0.8 | 1.8 | 15.0 | 18.1 | 18.1 | 0.0135 | 13 | 18 | 260 | 500 |
| | 1.5 | 1.5 | Solid | | 0.8 | 0.8 | 1.8 | 15.0 | 12.1 | 12.1 | 0.0123 | 16 | 22 | 280 | 500 |
| | 1.5 | 1.5 | Stranded | | 0.8 | 0.8 | 1.8 | 16.0 | 12.1 | 12.1 | 0.0116 | 16 | 22 | 300 | 500 |
| | 2.5 | 2.5 | Solid | | 0.8 | 0.8 | 1.8 | 16.5 | 7.41 | 7.41 | 0.0102 | 22 | 30 | 360 | 500 |
| | 2.5 | 2.5 | Stranded | | 0.8 | 0.8 | 1.8 | 17.0 | 7.41 | 7.41 | 0.0093 | 22 | 30 | 390 | 500 |
| | 4 | 4 | Solid | | 0.9 | 0.8 | 1.8 | 18.0 | 4.61 | 4.61 | 0.0094 | 30 | 39 | 480 | 500 |
| | 4 | 4 | Stranded | | 0.9 | 0.8 | 1.8 | 19.0 | 4.61 | 4.61 | 0.0085 | 30 | 39 | 500 | 500 |
| | 6 | 6 | Stranded | | 0.9 | 0.8 | 1.8 | 20.5 | 3.08 | 3.08 | 0.0073 | 37 | 50 | 650 | 500 |
| | 10 | 10 | Stranded | | 1.1 | 0.8 | 2.0 | 25.0 | 1.83 | 1.83 | 0.0069 | 52 | 68 | 1000 | 500 |
| | 16 | 16 | Stranded | | 1.1 | 1.2 | 2.0 | 28.5 | 1.15 | 1.15 | 0.0057 | 70 | 87 | 1400 | 500 |
| | 25 | 16 | Stranded | | 1.3 | 1.2 | 2.0 | 34.0 | 0.727 | 0.727 | 0.0054 | 88 | 128 | 1900 | 500 |
| | 35 | 16 | Stranded | | 1.3 | 1.5 | 2.2 | 39.0 | 0.524 | 0.524 | 0.0047 | 110 | 154 | 2500 | 500 |
| | 50 | 25 | Stranded | | 1.5 | 1.5 | 2.2 | 43.5 | 0.387 | 0.387 | 0.0046 | 133 | 181 | 3300 | 500 |
| | 70 | 35 | Stranded | | 1.5 | 1.5 | 2.4 | 49.0 | 0.268 | 0.268 | 0.0039 | 171 | 223 | 4500 | 500 |
| | 95 | 50 | Stranded | | 1.7 | 1.8 | 2.6 | 56.5 | 0.193 | 0.193 | 0.0038 | 207 | 267 | 6000 | 500 |
| | 120 | 70 | Stranded | | 1.7 | 1.8 | 2.8 | 61.5 | 0.153 | 0.153 | 0.0034 | 240 | 304 | 7500 | 500 |
| | 150 | 95 | Stranded | | 1.9 | 2.0 | 3.0 | 68.0 | 0.124 | 0.124 | 0.0034 | 278 | 342 | 9500 | 300 |
| | 185 | 95 | Stranded | | 2.1 | 2.0 | 3.2 | 75.0 | 0.0991 | 0.0991 | 0.0034 | 317 | 386 | 11500 | 300 |
| | 240 | 120 | Stranded | | 2.3 | 2.2 | 3.4 | 84.5 | 0.0754 | 0.0754 | 0.0033 | 374 | 448 | 14500 | 300 |
| | 300 | 150 | Stranded | | 2.5 | 2.2 | 3.8 | 93.5 | 0.0601 | 0.0601 | 0.0032 | 432 | 507 | 18000 | 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-G

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

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 4 Cores + Ground : Blue, Brown, Black, Grey + Green/Yellow

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 5

## APPLICATION

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

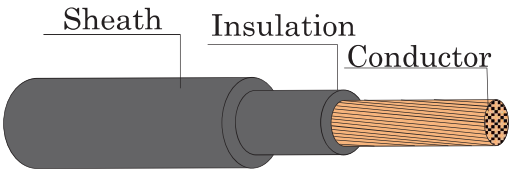
| Number of cores | Nominal cross section area | | A.C. Resistance | Inductance | Reactance | Impedance |
|---|---|---|---|---|---|---|
| | Phase ($mm^2$) | Ground ($mm^2$) | R (Ω/km) | L (mH/km) | XL (Ω/km) | Z (Ω/km) |
| 4+G | 1 | 1 | 21.7000 | 0.3771 | 0.1185 | 21.7000 |
| | 1 | 1 | 21.7000 | 0.3651 | 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 |

B

# VCT

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

TIS 11 Part 101-2559




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire

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

**Core identification** 1 Cores : Black

**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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 7

B

### APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness approx. (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard length (m) |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1 | Flexible | 0.8 | 1.2 | 6.2 | 19.5 | 0.0127 | 14 | 40 | 100/C |
| | 1.5 | Flexible | 0.8 | 1.2 | 6.6 | 13.3 | 0.0111 | 16 | 50 | 100/C |
| | 2.5 | Flexible | 0.8 | 1.2 | 7.4 | 7.98 | 0.0092 | 25 | 65 | 100/C |
| | 4 | Flexible | 0.9 | 1.4 | 8.6 | 4.95 | 0.0084 | 30 | 90 | 100/C |
| | 6 | Flexible | 0.9 | 1.4 | 9.4 | 3.30 | 0.0071 | 39 | 120 | 100/C |
| | 10 | Flexible | 1.1 | 1.8 | 12.0 | 1.91 | 0.0068 | 51 | 210 | 100/C |
| | 16 | Flexible | 1.1 | 1.8 | 13.5 | 1.21 | 0.0050 | 73 | 270 | 100/C |
| | 25 | Flexible | 1.3 | 2.2 | 16.0 | 0.780 | 0.0048 | 97 | 410 | 100/C |
| | 35 | Flexible | 1.3 | 2.2 | 17.5 | 0.554 | 0.0041 | 140 | 550 | 500/D |

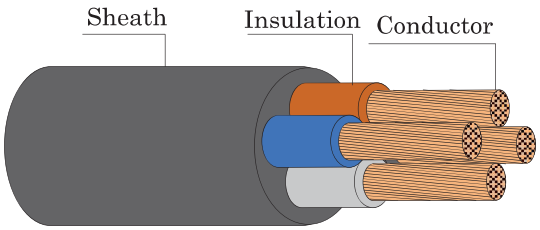
C : Packing in coil
D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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 |

# VCT

## 450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATHED, 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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 7

B

### APPLICATION

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

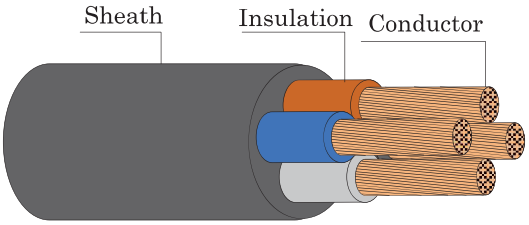
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness approx. (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard length (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 | 130 | 100/C |
| | 2.5 | Flexible | 0.8 | 1.4 | 12.5 | 7.98 | 0.0092 | 25 | 170 | 100/C |
| | 4 | Flexible | 0.9 | 1.6 | 14.5 | 4.95 | 0.0084 | 30 | 230 | 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 | 500 | 500/D |
| | 16 | Flexible | 1.1 | 2.2 | 23.0 | 1.21 | 0.0050 | 73 | 700 | 500/D |
| | 25 | Flexible | 1.3 | 2.4 | 27.5 | 0.780 | 0.0048 | 97 | 1000 | 500/D |
| | 35 | Flexible | 1.3 | 2.6 | 31.0 | 0.554 | 0.0041 | 140 | 1400 | 500/D |
| 3 | 1 | Flexible | 0.8 | 1.4 | 10.5 | 19.5 | 0.0127 | 12 | 100 | 100/C |
| | 1.5 | Flexible | 0.8 | 1.4 | 11.5 | 13.3 | 0.0111 | 15 | 130 | 100/C |
| | 2.5 | Flexible | 0.8 | 1.4 | 13.0 | 7.98 | 0.0092 | 20 | 170 | 100/C |
| | 4 | Flexible | 0.9 | 1.6 | 15.5 | 4.95 | 0.0084 | 26 | 230 | 100/C |
| | 6 | Flexible | 0.9 | 1.8 | 17.5 | 3.30 | 0.0071 | 34 | 320 | 100/C |
| | 10 | Flexible | 1.1 | 2.0 | 21.5 | 1.91 | 0.0068 | 47 | 500 | 500/D |
| | 16 | Flexible | 1.1 | 2.4 | 25.0 | 1.21 | 0.0050 | 63 | 700 | 500/D |
| | 25 | Flexible | 1.3 | 2.6 | 30.0 | 0.780 | 0.0048 | 83 | 1000 | 500/D |
| | 35 | Flexible | 1.3 | 2.8 | 33.5 | 0.554 | 0.0041 | 102 | 1400 | 500/D |
| 4 | 1 | Flexible | 0.8 | 1.6 | 10.5 | 19.5 | 0.0127 | 12 | 100 | 100/C |
| | 1.5 | Flexible | 0.8 | 1.6 | 11.5 | 13.3 | 0.0111 | 15 | 130 | 100/C |
| | 2.5 | Flexible | 0.8 | 1.6 | 13.0 | 7.98 | 0.0092 | 20 | 170 | 100/C |
| | 4 | Flexible | 0.9 | 1.8 | 15.5 | 4.95 | 0.0084 | 26 | 230 | 100/C |
| | 6 | Flexible | 0.9 | 2.0 | 17.5 | 3.30 | 0.0071 | 34 | 320 | 100/C |
| | 10 | Flexible | 1.1 | 2.2 | 21.5 | 1.91 | 0.0068 | 47 | 500 | 500/D |
| | 16 | Flexible | 1.1 | 2.6 | 25.0 | 1.21 | 0.0050 | 63 | 700 | 500/D |
| | 25 | Flexible | 1.3 | 2.8 | 30.0 | 0.780 | 0.0048 | 83 | 1000 | 500/D |
| | 35 | Flexible | 1.3 | 3.1 | 33.5 | 0.554 | 0.0041 | 102 | 1400 | 500/D |

C : Packing in coil
D : Packing in drum

# VCT

## 450/750 V 70°C FLEXIBLE CONDUCTOR PVC INSULATED AND SHEATHED, 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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 7

B

### APPLICATION

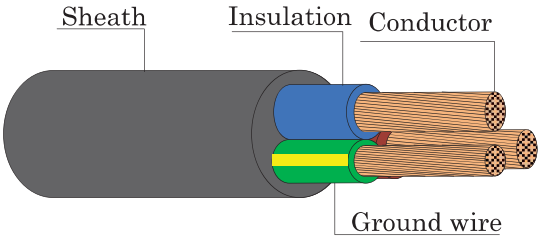
For mobile-electrical equipment used in mines, factories, farm or household appliances. This cable is suitable for use in places where cables come in contact with oils.

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance 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 |
| | 35 | 0.6631 | 0.2500 | 0.0785 | 0.6677 |
| 3 | 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 |
| | 25 | 0.9335 | 0.2602 | 0.0817 | 0.9371 |
| | 35 | 0.6632 | 0.2500 | 0.0785 | 0.6678 |
| 4 | 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 |
| | 25 | 0.9335 | 0.2602 | 0.0817 | 0.9371 |
| | 35 | 0.6632 | 0.2500 | 0.0785 | 0.6678 |

# VCT-G

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

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire

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

**Core identification** 2 Cores + Ground : Blue, Brown + Green/Yellow

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : 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 cables come in contact with oils.

B

| Number of cores | Conductor | | | | Insulation thickness nominal | Sheath thickness approx. | Overall diameter maximum | Conductor resistance maximum at 20°C | | Insulation resistance at 70°C minimum | Continuous currunt rating in free air at 40°C maximum | Cable weight approx. | Standard length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal cross section area | | Type of Conductor | | | | | Phase | Ground | | | | |
| | Phase ($mm^2$) | Ground ($mm^2$) | Phase | Ground | (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 | 120 | 100/C |
| | 1.5 | 1.5 | Flexible | | 0.8 | 1.4 | 12.0 | 13.3 | 13.3 | 0.0111 | 16 | 150 | 100/C |
| | 2.5 | 2.5 | Flexible | | 0.8 | 1.4 | 13.0 | 7.98 | 7.98 | 0.0092 | 25 | 200 | 100/C |
| | 4 | 4 | Flexible | | 0.9 | 1.6 | 15.5 | 4.95 | 4.95 | 0.0084 | 30 | 280 | 100/C |
| | 6 | 6 | Flexible | | 0.9 | 1.8 | 17.5 | 3.30 | 3.30 | 0.0071 | 39 | 400 | 100/C |
| | 10 | 10 | Flexible | | 1.1 | 2.0 | 21.5 | 1.91 | 1.91 | 0.0068 | 51 | 650 | 500/D |
| | 16 | 16 | Flexible | | 1.1 | 2.4 | 25.0 | 1.21 | 1.21 | 0.0050 | 73 | 900 | 500/D |
| | 25 | 16 | Flexible | | 1.3 | 2.6 | 28.5 | 0.780 | 0.780 | 0.0048 | 97 | 1200 | 500/D |
| | 35 | 16 | Flexible | | 1.3 | 2.8 | 31.5 | 0.554 | 0.554 | 0.0041 | 140 | 1500 | 500/D |

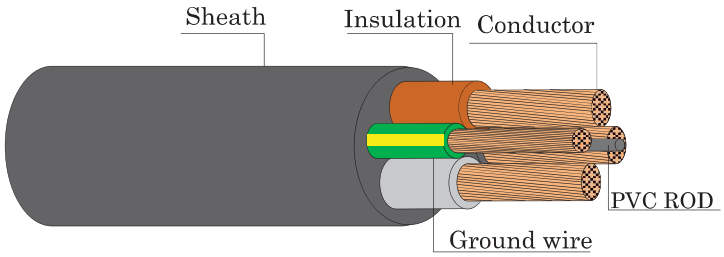
C : Packing in coil
D : Packing in drum

| Number of cores | Nominal cross section area | | A.C. Resistance | Inductance | Reactance | Impedance |
|---|---|---|---|---|---|---|
| | Phase ($mm^2$) | Ground ($mm^2$) | R (Ω/km) | L (mH/km) | XL (Ω/km) | Z (Ω/km) |
| 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 | 9.5500 |
| | 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 | 1.4502 |
| | 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 SHEATHED WITH GROUND, ROUND TYPE

TIS 11 Part 101-2559




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire

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

**Core identification**
3 Cores + Ground : Brown, Black, Grey + Green/Yellow

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 8

B

### APPLICATION

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

| Number of cores | Conductor | | | | Insulation thickness nominal | Sheath thickness approx. | Overall diameter maximum | Conductor resistance maximum at 20°C | | Insulation resistance at 70°C minimum | Continuous currunt rating in free air at 40°C maximum | Cable weight approx. | Standard length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal cross section area | | Type of Conductor | | | | | | | | | | |
| | Phase | Ground | Phase | Ground | | | | Phase | Ground | | | | |
| | ($mm^2$) | ($mm^2$) | | | (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 | 150 | 100/C |
| | 1.5 | 1.5 | Flexible | | 0.8 | 1.4 | 12.5 | 13.3 | 13.3 | 0.0111 | 15 | 180 | 100/C |
| | 2.5 | 2.5 | Flexible | | 0.8 | 1.4 | 14.0 | 7.98 | 7.98 | 0.0092 | 20 | 240 | 100/C |
| | 4 | 4 | Flexible | | 0.9 | 1.8 | 17.0 | 4.95 | 4.95 | 0.0084 | 26 | 360 | 100/C |
| | 6 | 6 | Flexible | | 0.9 | 2.0 | 19.5 | 3.30 | 3.30 | 0.0071 | 34 | 500 | 500/D |
| | 10 | 10 | Flexible | | 1.1 | 2.2 | 24.0 | 1.91 | 1.91 | 0.0068 | 47 | 850 | 500/D |
| | 16 | 16 | Flexible | | 1.1 | 2.6 | 28.0 | 1.21 | 1.21 | 0.0050 | 63 | 1200 | 500/D |
| | 25 | 16 | Flexible | | 1.3 | 2.8 | 33.0 | 0.780 | 0.780 | 0.0048 | 83 | 1600 | 500/D |
| | 35 | 16 | Flexible | | 1.3 | 3.1 | 37.0 | 0.554 | 0.554 | 0.0041 | 102 | 2100 | 500/D |

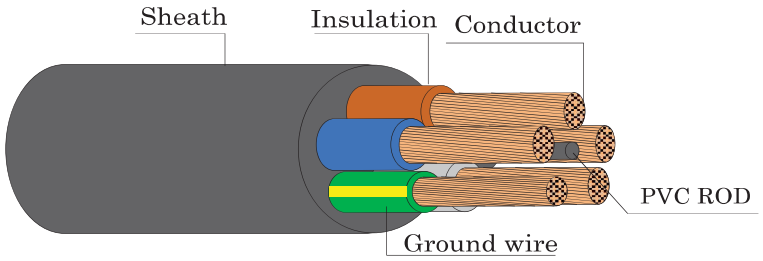
C : Packing in coil
D : Packing in drum

| Number of cores | Nominal cross section area | | A.C. Resistance | Inductance | Reactance | Impedance |
|---|---|---|---|---|---|---|
| | Phase | Ground | R | L | XL | Z |
| | ($mm^2$) | ($mm^2$) | (Ω/km) | (mH/km) | (Ω/km) | (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 SHEATHED WITH GROUND, ROUND TYPE

TIS 11 Part 101-2559




## CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire

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

**Core identification**
4 Cores + Ground : Blue, Brown, Black, Grey + Green/Yellow

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : 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 cables come in contact with oils.

B

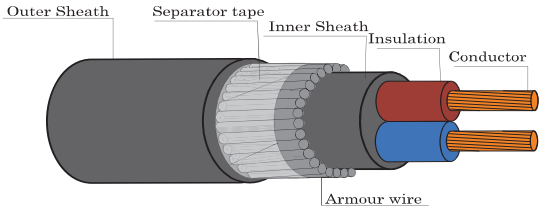
| Number of cores | Conductor | | | | Insulation thickness nominal | Sheath thickness approx. | Overall diameter maximum | Conductor resistance maximum at 20°C | | Insulation resistance at 70°C minimum | Continuous currunt rating in free air at 40°C maximum | Cable weight approx. | Standard length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Nominal cross section area | | Type of Conductor | | | | | | | | | | |
| | Phase | Ground | Phase | Ground | | | | Phase | Ground | | | | |
| | ($mm^2$) | ($mm^2$) | | | (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 | 190 | 100/C |
| | 1.5 | 1.5 | Flexible | | 0.8 | 1.6 | 14.0 | 13.3 | 13.3 | 0.0111 | 15 | 220 | 100/C |
| | 2.5 | 2.5 | Flexible | | 0.8 | 1.6 | 15.5 | 7.98 | 7.98 | 0.0092 | 20 | 310 | 100/C |
| | 4 | 4 | Flexible | | 0.9 | 1.8 | 18.5 | 4.95 | 4.95 | 0.0084 | 26 | 440 | 100/C |
| | 6 | 6 | Flexible | | 0.9 | 2.0 | 21.5 | 3.30 | 3.30 | 0.0071 | 34 | 600 | 500/D |
| | 10 | 10 | Flexible | | 1.1 | 2.2 | 26.5 | 1.91 | 1.91 | 0.0068 | 47 | 1000 | 500/D |
| | 16 | 16 | Flexible | | 1.1 | 2.6 | 30.5 | 1.21 | 1.21 | 0.0050 | 63 | 1400 | 500/D |
| | 25 | 16 | Flexible | | 1.3 | 2.8 | 36.5 | 0.780 | 0.780 | 0.0048 | 83 | 2000 | 500/D |
| | 35 | 16 | Flexible | | 1.3 | 3.1 | 41.5 | 0.554 | 0.554 | 0.0041 | 102 | 2600 | 500/D |

C : Packing in coil
D : Packing in drum

| Number of cores | Nominal cross section area | | A.C. Resistance | Inductance | Reactance | Impedance |
|---|---|---|---|---|---|---|
| | Phase | Ground | R | L | XL | Z |
| | ($mm^2$) | ($mm^2$) | (Ω/km) | (mH/km) | (Ω/km) | (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 | 9.5500 |
| | 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 |

# NYY-SWA

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




### CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 2 Cores : Blue, Brown

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Galvanized Steel Wires

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

B

### APPLICATION

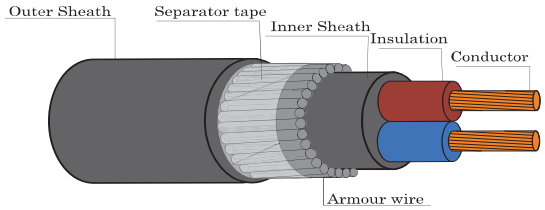
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Diameter of steel wire amor norminal | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length per drum (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 13.5 | 18.1 | 0.0141 | 22 | 300 | 500 |
| | 1 | Stranded | 0.8 | 0.8 | 0.8 | 1.8 | 14.0 | 18.1 | 0.0135 | 22 | 310 | 500 |
| | 1.5 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 14.0 | 12.1 | 0.0123 | 27 | 320 | 500 |
| | 1.5 | Stranded | 0.8 | 0.8 | 0.8 | 1.8 | 14.5 | 12.1 | 0.0116 | 27 | 340 | 500 |
| | 2.5 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 15.0 | 7.4 | 0.0102 | 36 | 370 | 500 |
| | 2.5 | Stranded | 0.8 | 0.8 | 0.8 | 1.8 | 15.5 | 7.4 | 0.0093 | 36 | 400 | 500 |
| | 4 | Solid | 0.9 | 0.8 | 0.8 | 1.8 | 16.5 | 4.6 | 0.0094 | 47 | 460 | 500 |
| | 4 | Stranded | 0.9 | 0.8 | 1.3 | 1.8 | 18.0 | 4.61 | 0.0085 | 47 | 600 | 500 |
| | 6 | Stranded | 0.9 | 0.8 | 1.3 | 1.8 | 19.0 | 3.08 | 0.0073 | 61 | 700 | 500 |
| | 10 | Stranded | 1.1 | 0.8 | 1.3 | 1.8 | 22.0 | 1.83 | 0.0069 | 82 | 950 | 500 |
| | 16 | Stranded | 1.1 | 0.8 | 1.6 | 1.8 | 24.0 | 1.15 | 0.0057 | 107 | 1300 | 500 |
| | 25 | Stranded | 1.3 | 1.2 | 2.0 | 1.9 | 30.0 | 0.727 | 0.0054 | 138 | 2000 | 500 |
| | 35 | Stranded | 1.3 | 1.2 | 2.0 | 2.0 | 33.0 | 0.524 | 0.0047 | 168 | 2400 | 500 |
| | 50 | Stranded | 1.5 | 1.2 | 2.0 | 2.1 | 36.0 | 0.387 | 0.0046 | 199 | 3000 | 500 |
| | 70 | Stranded | 1.5 | 1.5 | 2.0 | 2.2 | 41.0 | 0.268 | 0.0039 | 243 | 3800 | 500 |
| | 95 | Stranded | 1.7 | 1.5 | 2.5 | 2.4 | 47.0 | 0.193 | 0.0038 | 294 | 5000 | 500 |
| | 120 | Stranded | 1.7 | 1.5 | 2.5 | 2.6 | 51.0 | 0.153 | 0.0034 | 336 | 6000 | 500 |
| | 150 | Stranded | 1.9 | 1.8 | 2.5 | 2.7 | 56.0 | 0.124 | 0.0034 | 375 | 7000 | 500 |
| | 185 | Stranded | 2.1 | 1.8 | 2.5 | 2.9 | 61.0 | 0.0991 | 0.0034 | 424 | 8500 | 300 |
| | 240 | Stranded | 2.3 | 2.0 | 2.5 | 3.1 | 68.0 | 0.0754 | 0.0033 | 489 | 10500 | 300 |
| | 300 | Stranded | 2.5 | 2.0 | 3.2 | 3.4 | 76.0 | 0.0601 | 0.0032 | 553 | 13500 | 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 AMORED POWER CABLE**




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 2 Cores : Blue, Brown

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Galvanized Steel Wires

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

## APPLICATION

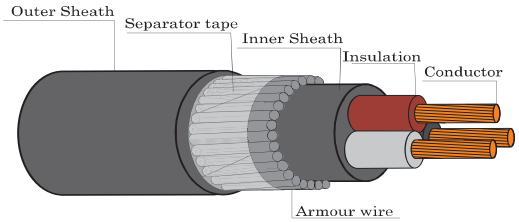
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

B

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|---|
| 2 | 1 | Solid | 21.7000 | 0.3771 | 0.1185 | 21.7000 |
| | 1 | Stranded | 21.7000 | 0.3651 | 0.1147 | 21.7000 |
| | 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 | 0.6272 | 0.2593 | 0.0814 | 0.6325 |
| | 50 | Stranded | 0.4634 | 0.2604 | 0.0818 | 0.4706 |
| | 70 | Stranded | 0.3212 | 0.2506 | 0.0787 | 0.3307 |
| | 95 | Stranded | 0.2317 | 0.2480 | 0.0779 | 0.2444 |
| | 120 | Stranded | 0.1840 | 0.2409 | 0.0757 | 0.1990 |
| | 150 | Stranded | 0.1495 | 0.2402 | 0.0755 | 0.1675 |
| | 185 | Stranded | 0.1201 | 0.2401 | 0.0754 | 0.1418 |
| | 240 | Stranded | 0.0922 | 0.2361 | 0.0742 | 0.1183 |
| | 300 | Stranded | 0.0744 | 0.2343 | 0.0736 | 0.1047 |

# NYY-SWA

## 450/750 V 70o C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE AMORED POWER CABLE




### CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 3 Cores : Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Galvanized Steel Wires

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

B

### APPLICATION

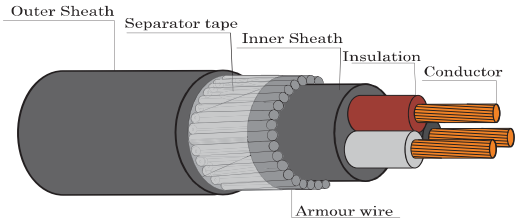
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Diameter of steel wire amor norminal | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length per drum (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 14.0 | 18.1 | 0.0141 | 18 | 330 | 500 |
| | 1 | Stranded | 0.8 | 0.8 | 0.8 | 1.8 | 14.5 | 18.1 | 0.0135 | 18 | 340 | 500 |
| | 1.5 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 14.5 | 12.1 | 0.0123 | 23 | 350 | 500 |
| | 1.5 | Stranded | 0.8 | 0.8 | 0.8 | 1.8 | 15.0 | 12.1 | 0.0116 | 23 | 380 | 500 |
| | 2.5 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 15.5 | 7.41 | 0.0102 | 30 | 420 | 500 |
| | 2.5 | Stranded | 0.8 | 0.8 | 0.8 | 1.8 | 16.5 | 7.41 | 0.0093 | 30 | 450 | 500 |
| | 4 | Solid | 0.9 | 0.8 | 1.3 | 1.8 | 18.0 | 4.61 | 0.0094 | 40 | 650 | 500 |
| | 4 | Stranded | 0.9 | 0.8 | 1.3 | 1.8 | 18.5 | 4.61 | 0.0085 | 40 | 700 | 500 |
| | 6 | Stranded | 0.9 | 0.8 | 1.3 | 1.8 | 20.0 | 3.08 | 0.0073 | 51 | 800 | 500 |
| | 10 | Stranded | 1.1 | 0.8 | 1.6 | 1.8 | 23.0 | 1.83 | 0.0069 | 69 | 1200 | 500 |
| | 16 | Stranded | 1.1 | 1.2 | 1.6 | 1.8 | 26.0 | 1.15 | 0.0057 | 88 | 1600 | 500 |
| | 25 | Stranded | 1.3 | 1.2 | 2.0 | 1.9 | 31.0 | 0.727 | 0.0054 | 115 | 2300 | 500 |
| | 35 | Stranded | 1.3 | 1.2 | 2.0 | 2.0 | 34.0 | 0.524 | 0.0047 | 140 | 2800 | 500 |
| | 50 | Stranded | 1.5 | 1.5 | 2.0 | 2.2 | 39.0 | 0.387 | 0.0046 | 168 | 3600 | 500 |
| | 70 | Stranded | 1.5 | 1.5 | 2.0 | 2.3 | 43.0 | 0.268 | 0.0039 | 209 | 4500 | 500 |
| | 95 | Stranded | 1.7 | 1.5 | 2.5 | 2.5 | 50.0 | 0.193 | 0.0038 | 248 | 6500 | 500 |
| | 120 | Stranded | 1.7 | 1.8 | 2.5 | 2.7 | 55.0 | 0.153 | 0.0034 | 283 | 7500 | 300 |
| | 150 | Stranded | 1.9 | 1.8 | 2.5 | 2.8 | 59.0 | 0.124 | 0.0034 | 310 | 9000 | 300 |
| | 185 | Stranded | 2.1 | 2.0 | 2.5 | 3.0 | 65.0 | 0.0991 | 0.0034 | 357 | 10500 | 300 |
| | 240 | Stranded | 2.3 | 2.0 | 2.5 | 3.3 | 73.0 | 0.0754 | 0.0033 | 427 | 13000 | 200 |
| | 300 | Stranded | 2.5 | 2.2 | 3.2 | 3.5 | 81.0 | 0.0601 | 0.0032 | 453 | 17000 | 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 AMORED POWER CABLE**




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 3 Cores : Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Amor** : Galvanized Steel Wires

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

## APPLICATION

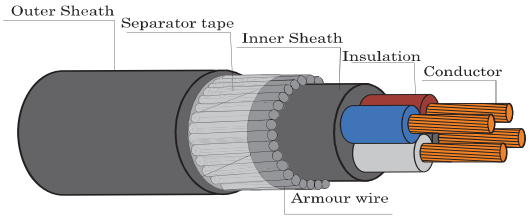
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|---|
| 3 | 1 | Solid | 21.7000 | 0.3771 | 0.1185 | 21.7000 |
| | 1 | Stranded | 21.7000 | 0.3651 | 0.1147 | 21.7000 |
| | 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 |

B

# NYY-SWA

## 450/750 V 70o C PVC INSULATED AND DOUBLE SHEATHED, WITH GALVANIZED STEEL WIRE AMORED POWER CABLE




### CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 4 Cores : Blue, Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Amor** : Galvanized Steel Wires

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

B

### APPLICATION

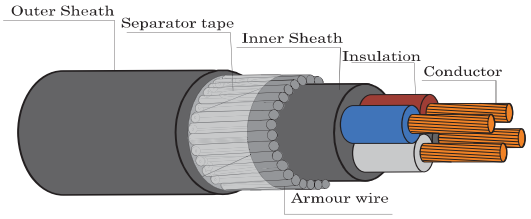
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Inner Sheath thickness approx. (mm) | Diameter of steel wire amor norminal | Outer Sheath thickness nominal (mm) | Overall diameter maximum (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Continuous currunt rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard length per drum (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 1 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 15.0 | 18.1 | 0.0141 | 18 | 360 | 500 |
| | 1 | Stranded | 0.8 | 0.8 | 0.8 | 1.8 | 15.0 | 18.1 | 0.0135 | 18 | 380 | 500 |
| | 1.5 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 15.5 | 12.1 | 0.0123 | 23 | 400 | 500 |
| | 1.5 | Stranded | 0.8 | 0.8 | 0.8 | 1.8 | 16.0 | 12.1 | 0.0116 | 23 | 420 | 500 |
| | 2.5 | Solid | 0.8 | 0.8 | 0.8 | 1.8 | 16.5 | 7.41 | 0.0102 | 30 | 480 | 500 |
| | 2.5 | Stranded | 0.8 | 0.8 | 1.3 | 1.8 | 18.0 | 7.41 | 0.0093 | 30 | 650 | 500 |
| | 4 | Solid | 0.9 | 0.8 | 1.3 | 1.8 | 19.0 | 4.61 | 0.0094 | 40 | 750 | 500 |
| | 4 | Stranded | 0.9 | 0.8 | 1.3 | 1.8 | 20.0 | 4.61 | 0.0085 | 40 | 800 | 500 |
| | 6 | Stranded | 0.9 | 0.8 | 1.3 | 1.8 | 21.0 | 3.08 | 0.0073 | 51 | 950 | 500 |
| | 10 | Stranded | 1.1 | 0.8 | 1.6 | 1.8 | 25.0 | 1.83 | 0.0069 | 69 | 1400 | 500 |
| | 16 | Stranded | 1.1 | 1.2 | 1.6 | 1.8 | 28.0 | 1.15 | 0.0057 | 88 | 1800 | 500 |
| | 25 | Stranded | 1.3 | 1.2 | 2.0 | 2.0 | 34.0 | 0.727 | 0.0054 | 115 | 2800 | 500 |
| | 35 | Stranded | 1.3 | 1.5 | 2.0 | 2.1 | 38.0 | 0.524 | 0.0047 | 140 | 3500 | 500 |
| | 50 | Stranded | 1.5 | 1.5 | 2.0 | 2.3 | 43.0 | 0.387 | 0.0046 | 168 | 4300 | 500 |
| | 70 | Stranded | 1.5 | 1.5 | 2.5 | 2.5 | 49.0 | 0.268 | 0.0039 | 209 | 6000 | 500 |
| | 95 | Stranded | 1.7 | 1.8 | 2.5 | 2.7 | 55.0 | 0.193 | 0.0038 | 248 | 8000 | 300 |
| | 120 | Stranded | 1.7 | 1.8 | 2.5 | 2.9 | 60.0 | 0.153 | 0.0034 | 283 | 9000 | 300 |
| | 150 | Stranded | 1.9 | 2.0 | 2.5 | 3.0 | 65.0 | 0.124 | 0.0034 | 310 | 11000 | 300 |
| | 185 | Stranded | 2.1 | 2.0 | 2.5 | 3.2 | 72.0 | 0.0991 | 0.0034 | 357 | 13000 | 200 |
| | 240 | Stranded | 2.3 | 2.2 | 3.2 | 3.5 | 81.0 | 0.0754 | 0.0033 | 427 | 17500 | 100 |
| | 300 | Stranded | 2.5 | 2.2 | 3.2 | 3.8 | 89.0 | 0.0601 | 0.0032 | 453 | 21000 | 100 |

**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 AMORED POWER CABLE**




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 4 Cores : Blue, Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Amor** : Galvanized Steel Wires

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

## APPLICATION

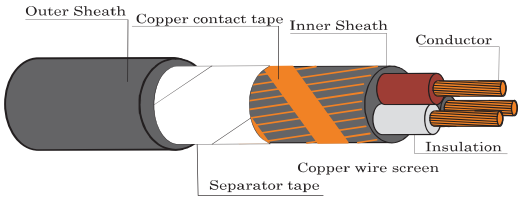
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

B

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|---|
| 4 | 1 | Solid | 21.7000 | 0.3771 | 0.1185 | 21.7000 |
| | 1 | Stranded | 21.7000 | 0.3651 | 0.1147 | 21.7000 |
| | 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 |

# NYCY

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




### CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 3 Cores : Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Concentric shield** : Annealed copper wires with helix of copper tape fully covers

**Sheath** : Black polyvinyl choride (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

**Testing voltage** : 2,500 Volts

**Reference standard** : TIS 11 Part 101-2559 Table 4

B

### APPLICATION

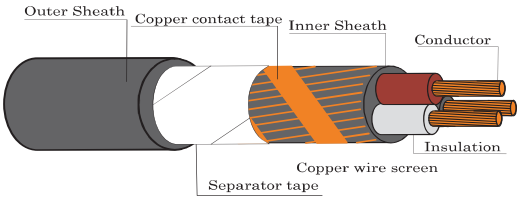
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of cores | Nominal cross sectional area (mm2) | | Conductor type | Diameter of Concentric Shield | Insulation thickness nominal | Inner Sheath thickness approx. | Outer Sheath thickness nominal | Overall diameter maximum | Conductor resistance at 20°C maximum | Insulation resistance at 70°C minimum | Continuous currunt rating in free air at 40°C maximum | Continuous currunt rating in ground at 30°C maximum | Cable weight approx. | Standard length per drum |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Phase | Concentric Shield | | (mm) | (mm) | (mm) | (mm) | (mm) | (Ω/km) | (MΩ-km) | (A) | (A) | (kg/km) | (m) |
| 3 | 1.5 | 1.5 | Solid | 1.5 | 0.8 | 0.8 | 1.8 | 14.5 | 12.1 | 0.0123 | 16 | 22 | 240 | 500 |
| | 1.5 | 1.5 | Stranded | 1.5 | 0.8 | 0.8 | 1.8 | 15.0 | 12.1 | 0.0116 | 16 | 22 | 260 | 500 |
| | 2.5 | 2.5 | Solid | 2.5 | 0.8 | 0.8 | 1.8 | 15.5 | 7.41 | 0.0102 | 22 | 30 | 300 | 500 |
| | 2.5 | 2.5 | Stranded | 2.5 | 0.8 | 0.8 | 1.8 | 16.5 | 7.41 | 0.0093 | 22 | 30 | 320 | 500 |
| | 4 | 4 | Solid | 4 | 0.9 | 0.8 | 1.8 | 17.5 | 4.61 | 0.0094 | 30 | 39 | 400 | 500 |
| | 4 | 4 | Stranded | 4 | 0.9 | 0.8 | 1.8 | 18.0 | 4.61 | 0.0085 | 30 | 39 | 420 | 500 |
| | 6 | 6 | Stranded | 6 | 0.9 | 0.8 | 1.8 | 19.5 | 3.08 | 0.0073 | 37 | 50 | 550 | 500 |
| | 10 | 10 | Stranded | 10 | 1.1 | 0.8 | 1.8 | 22.0 | 1.83 | 0.0069 | 52 | 68 | 750 | 500 |
| | 16 | 16 | Stranded | 16 | 1.1 | 0.8 | 2.0 | 26.0 | 1.15 | 0.0057 | 66 | 87 | 1100 | 500 |
| | 25 | 16 | Stranded | 16 | 1.3 | 1.2 | 2.0 | 30.0 | 0.727 | 0.0054 | 88 | 107 | 1600 | 500 |
| | 25 | 25 | Stranded | 25 | 1.3 | 1.2 | 2.0 | 30.0 | 0.727 | 0.0054 | 88 | 107 | 1600 | 500 |
| | 35 | 16 | Stranded | 16 | 1.3 | 1.2 | 2.0 | 33.0 | 0.524 | 0.0047 | 107 | 122 | 1900 | 500 |
| | 35 | 25 | Stranded | 25 | 1.3 | 1.2 | 2.0 | 33.0 | 0.524 | 0.0047 | 107 | 122 | 2000 | 500 |
| | 50 | 25 | Stranded | 25 | 1.5 | 1.5 | 2.2 | 38.0 | 0.387 | 0.0046 | 130 | 142 | 2600 | 500 |
| | 50 | 35 | Stranded | 35 | 1.5 | 1.5 | 2.2 | 39.0 | 0.387 | 0.0046 | 130 | 142 | 2700 | 500 |
| | 70 | 35 | Stranded | 35 | 1.5 | 1.5 | 2.2 | 43.0 | 0.268 | 0.0039 | 162 | 178 | 3500 | 500 |
| | 70 | 50 | Stranded | 50 | 1.5 | 1.5 | 2.2 | 43.0 | 0.268 | 0.0039 | 162 | 178 | 3600 | 500 |
| | 95 | 50 | Stranded | 50 | 1.7 | 1.5 | 2.4 | 48.0 | 0.193 | 0.0038 | 200 | 219 | 4700 | 500 |
| | 95 | 70 | Stranded | 70 | 1.7 | 1.5 | 2.4 | 49.0 | 0.193 | 0.0038 | 200 | 219 | 4900 | 500 |
| | 120 | 70 | Stranded | 70 | 1.7 | 1.8 | 2.6 | 53.0 | 0.153 | 0.0034 | 233 | 254 | 6000 | 500 |
| | 120 | 95 | Stranded | 95 | 1.7 | 1.8 | 2.6 | 54.0 | 0.153 | 0.0034 | 233 | 254 | 6000 | 500 |
| | 150 | 70 | Stranded | 70 | 1.9 | 1.8 | 2.8 | 58.0 | 0.124 | 0.0034 | 266 | 290 | 7000 | 500 |
| | 150 | 95 | Stranded | 95 | 1.9 | 1.8 | 2.8 | 58.0 | 0.124 | 0.0034 | 266 | 290 | 7500 | 500 |
| | 150 | 120 | Stranded | 120 | 1.9 | 1.8 | 2.8 | 59.0 | 0.124 | 0.0034 | 266 | 290 | 7500 | 500 |
| | 185 | 95 | Stranded | 95 | 2.1 | 2.0 | 3.0 | 64.0 | 0.0991 | 0.0034 | 306 | 332 | 9000 | 300 |
| | 185 | 120 | Stranded | 120 | 2.1 | 2.0 | 3.0 | 65.0 | 0.0991 | 0.0034 | 306 | 332 | 9000 | 300 |
| | 240 | 120 | Stranded | 120 | 2.3 | 2.0 | 3.2 | 72.0 | 0.0754 | 0.0033 | 364 | 389 | 11500 | 300 |
| | 300 | 150 | Stranded | 150 | 2.5 | 2.2 | 3.4 | 79.0 | 0.0601 | 0.0032 | 417 | 445 | 14000 | 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

# NYCY

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




## CABLE STRUCTURE

**Conductor** : Solid and Stranded annealed copper wire

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

**Core identification** 3 Cores : Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Concentric shield** : Annealed copper wires with helix of copper tape fully covers

**Sheath** : Black polyvinyl choride (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

**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 ($mm^2$) | Conductor type | A.C. Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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 |

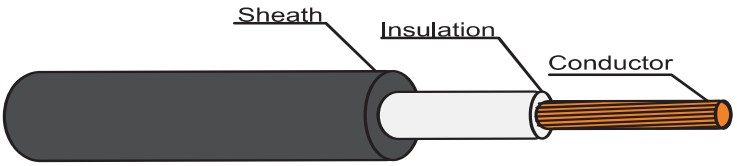
B

# FD-0.6/1KV-CV

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

IEC 60502-1

TIS 2143-2546




Category C
FLAME RETARDANT

### CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** Single-core : 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

**Testing voltag** : 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.

B

| Number of core | Nominal cross sectional area ($mm^2$) | Conductor type | 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 | | | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Space (A) | Touching (A) | Trefoil (A) | | | |
| 1 | 1.5 | Non-Compacted | 0.7 | 1.4 | 6.3 | 12.1 | 2,500 | 31 | 24 | 23 | 33 | 50 | 500/D |
| | 300 | Compacted | 1.8 | 1.8 | 29 | 0.0601 | 600 | 821 | 670 | 640 | 601 | 3100 | 500/D |
| | 400 | Compacted | 2.0 | 1.9 | 32 | 0.0470 | 600 | 987 | 790 | 749 | 684 | 3900 | 500/D |
| | 500 | Compacted | 2.2 | 2.0 | 36 | 0.0366 | 600 | 1140 | 908 | 861 | 777 | 5000 | 500/D |
| | 630 | Compacted | 2.4 | 2.2 | 40 | 0.0283 | 550 | 1298 | 1064 | 1014 | 1229 | 6500 | 500/D |
| | 800 | Compacted | 2.6 | 2.3 | 45 | 0.0221 | 550 | 1494 | 1220 | 1156 | 1380 | 8000 | 500/D |
| | 1000 | Compacted | 2.8 | 2.4 | 51 | 0.0176 | 500 | 1712 | 1391 | 1307 | 1532 | 10500 | 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) 0.3 m

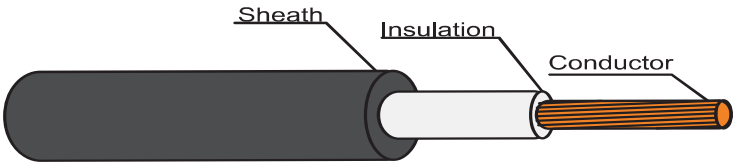
D : Packing in drum

# FD-0.6/1KV-CV

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

IEC 60502-1

TIS 2143-2546




Category C
FLAME RETARDANT

### CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** Single-core : 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

**Testing voltag** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
IEC 60332-3-24 ( Cat.C )

### APPLICATION

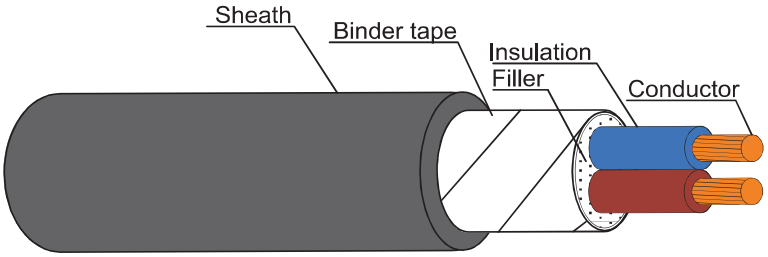
For installation exposed, or in raceway, wet or dry location, or direct burial in ground.

| Number of core | Nominal cross sectional area ($mm^2$) | 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 | 0.6630 | 0.5244 | 0.4782 | 0.2083 | 0.1647 | 0.1502 | 15.4301 | 15.4296 | 15.4294 |
| | 300 | 0.0779 | 0.0787 | 0.0792 | 0.4413 | 0.3027 | 0.2565 | 0.1387 | 0.0951 | 0.0806 | 0.1591 | 0.1234 | 0.1130 |
| | 400 | 0.0616 | 0.0625 | 0.0632 | 0.4393 | 0.3007 | 0.2545 | 0.1380 | 0.0945 | 0.0800 | 0.1511 | 0.1133 | 0.1019 |
| | 500 | 0.0488 | 0.0499 | 0.0509 | 0.4365 | 0.2979 | 0.2517 | 0.1371 | 0.0936 | 0.0791 | 0.1455 | 0.1061 | 0.0940 |
| | 630 | 0.0387 | 0.0402 | 0.0414 | 0.4341 | 0.2954 | 0.2492 | 0.1364 | 0.0928 | 0.0783 | 0.1418 | 0.1011 | 0.0886 |
| | 800 | 0.0314 | 0.0332 | 0.0346 | 0.4309 | 0.2923 | 0.2461 | 0.1354 | 0.0918 | 0.0773 | 0.1390 | 0.0977 | 0.0847 |
| | 1000 | 0.0263 | 0.0284 | 0.0301 | 0.4265 | 0.2879 | 0.2416 | 0.1340 | 0.0904 | 0.0759 | 0.1366 | 0.0948 | 0.0817 |

B

# FD-0.6/1KV-CV

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




IEC 60502-1

TIS 2143-2546

Category C
FLAME RETARDANT

### CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
2 Cores: Blue, Brown

**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

**Testing voltag** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
IEC 60332-3-24 ( Cat.C )

B

### APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 1.5 | Non-Compacted | 0.7 | 1.8 | 11.0 | 12.1 | 2,500 | 27 | 33 | 130 | 500/D |
| | 95 | Compacted | 1.1 | 2.0 | 33 | 0.193 | 650 | 329 | 350 | 2200 | 500/D |
| | 120 | Compacted | 1.2 | 2.1 | 37 | 0.153 | 650 | 381 | 400 | 2800 | 500/D |
| | 150 | Compacted | 1.4 | 2.2 | 41 | 0.124 | 700 | 436 | 450 | 3400 | 500/D |
| | 185 | Compacted | 1.6 | 2.3 | 45 | 0.0991 | 700 | 503 | 505 | 4200 | 500/D |
| | 240 | Compacted | 1.7 | 2.5 | 51 | 0.0754 | 650 | 593 | 585 | 5500 | 500/D |
| | 300 | Compacted | 1.8 | 2.7 | 56 | 0.0601 | 600 | 676 | 665 | 7000 | 500/D |
| | 400 | Compacted | 2.0 | 2.9 | 63 | 0.0470 | 600 | 777 | 750 | 8500 | 500/D |

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

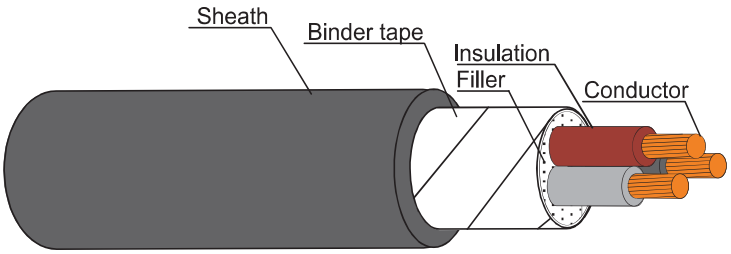
D : Packing in Drum

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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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 |
| | 95 | 0.2468 | 0.2331 | 0.0732 | 0.2575 |
| | 120 | 0.1960 | 0.2315 | 0.0727 | 0.2091 |
| | 150 | 0.1593 | 0.2302 | 0.0723 | 0.1749 |
| | 185 | 0.1278 | 0.2338 | 0.0734 | 0.1474 |
| | 240 | 0.0981 | 0.2295 | 0.0721 | 0.1217 |
| | 300 | 0.0791 | 0.2260 | 0.0710 | 0.1063 |
| | 400 | 0.0630 | 0.2259 | 0.0710 | 0.0949 |

# FD-0.6/1KV-CV

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




IEC 60502-1

TIS 2143-2546

Category C
FLAME RETARDANT

### CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
3 Cores: Brown, Black, Grey

**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

**Testing voltag** : 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 ($mm^2$) | Conductor type | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1.5 | Non-Compacted | 0.7 | 1.8 | 11.5 | 12.1 | 2,500 | 22 | 28 | 150 | 500/D |
| | 95 | Compacted | 1.1 | 2.0 | 36 | 0.193 | 650 | 272 | 295 | 3100 | 500/D |
| | 120 | Compacted | 1.2 | 2.1 | 39 | 0.153 | 650 | 320 | 335 | 3900 | 500/D |
| | 150 | Compacted | 1.4 | 2.3 | 44 | 0.124 | 700 | 366 | 380 | 4800 | 500/D |
| | 185 | Compacted | 1.6 | 2.4 | 49 | 0.0991 | 700 | 422 | 425 | 6000 | 500/D |
| | 240 | Compacted | 1.7 | 2.6 | 55 | 0.0754 | 650 | 498 | 495 | 8000 | 500/D |
| | 300 | Compacted | 1.8 | 2.8 | 61 | 0.0601 | 600 | 567 | 560 | 9500 | 500/D |
| | 400 | Compacted | 2.0 | 3.1 | 68 | 0.0470 | 600 | 652 | 630 | 12500 | 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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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 |
| | 95 | 0.2471 | 0.2331 | 0.0732 | 0.2577 |
| | 120 | 0.1964 | 0.2315 | 0.0727 | 0.2094 |
| | 150 | 0.1597 | 0.2302 | 0.0723 | 0.1753 |
| | 185 | 0.1282 | 0.2338 | 0.0734 | 0.1478 |
| | 240 | 0.0987 | 0.2295 | 0.0721 | 0.1222 |
| | 300 | 0.0798 | 0.2260 | 0.0710 | 0.1068 |
| | 400 | 0.0639 | 0.2259 | 0.0710 | 0.0955 |

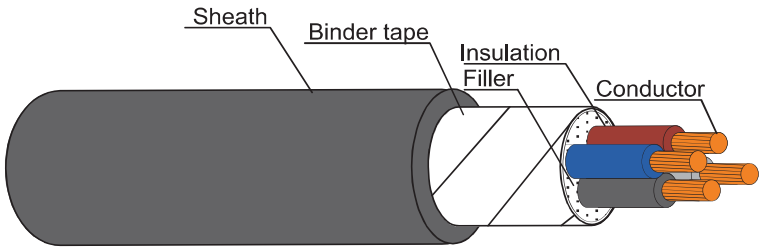
B

# FD-0.6/1KV-CV

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

IEC 60502-1

TIS 2143-2546




Category C
FLAME RETARDANT

### CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
4 Cores: Blue, Brown, Black, Grey

**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

**Testing voltag** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
IEC 60332-3-24 ( Cat.C )

B

### APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | Number of wires | 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 | 1.5 | Non-Compacted | 0.7 | 1.8 | 12.0 | 12.1 | 2,500 | 22 | 28 | 180 | 500/D |
| | 95 | Compacted | 1.1 | 2.0 | 39 | 0.193 | 650 | 272 | 295 | 4000 | 500/D |
| | 120 | Compacted | 1.2 | 2.1 | 44 | 0.153 | 650 | 320 | 335 | 5000 | 500/D |
| | 150 | Compacted | 1.4 | 2.3 | 49 | 0.124 | 700 | 366 | 380 | 6500 | 500/D |
| | 185 | Compacted | 1.6 | 2.4 | 54 | 0.0991 | 700 | 422 | 425 | 8000 | 500/D |
| | 240 | Compacted | 1.7 | 2.6 | 61 | 0.0754 | 650 | 498 | 495 | 10000 | 500/D |
| | 300 | Compacted | 1.8 | 2.8 | 68 | 0.0601 | 600 | 567 | 560 | 12500 | 500/D |
| | 400 | Compacted | 2.0 | 3.1 | 76 | 0.0470 | 600 | 652 | 630 | 16000 | 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

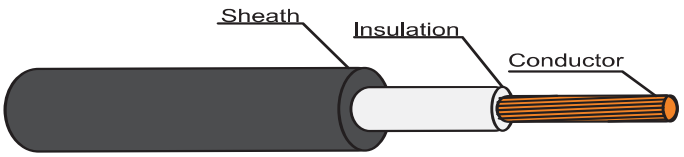
D : Packing in Drum

| Number of cores | Nominal cross sectional area ($mm^2$) | 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 |
| | 95 | 0.2471 | 0.2331 | 0.0732 | 0.2577 |
| | 120 | 0.1964 | 0.2315 | 0.0727 | 0.2094 |
| | 150 | 0.1597 | 0.2302 | 0.0723 | 0.1753 |
| | 185 | 0.1282 | 0.2338 | 0.0734 | 0.1478 |
| | 240 | 0.0987 | 0.2295 | 0.0721 | 0.1222 |
| | 300 | 0.0798 | 0.2260 | 0.0710 | 0.1068 |
| | 400 | 0.0639 | 0.2259 | 0.0710 | 0.0955 |

# YK FD-0.6/1KV-CV

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

SUPER SOFT YK SERIES CABLE




IEC 60502-1

TIS 2143-2546

Category C FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : Single-core : 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

**Testing voltag** : 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.

B

| Number of core | Nominal cross sectional area (mm²) | Conductor type | 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 | | | Continuous current rating in ground at 30°C maximum (A) | Cable weight approx. (kg/km) | Standard Length | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced (A) | Touching (A) | Trefoil (A) | | | | |
| 1 | 2.5 | Non-Compacted | 0.7 | 1.4 | 6.80 | 7.41 | 2,100 | 42 | 32 | 31 | 43 | 65 | 1000 | 2000 |
| | 4 | Non-Compacted | 0.7 | 1.4 | 7.30 | 4.61 | 1,700 | 54 | 42 | 41 | 55 | 80 | 1000 | 2000 |
| | 6 | Non-Compacted | 0.7 | 1.4 | 7.90 | 3.08 | 1,450 | 68 | 53 | 52 | 70 | 100 | 1000 | 2000 |
| | 10 | Non-Compacted | 0.7 | 1.4 | 8.80 | 1.83 | 1,250 | 90 | 73 | 71 | 92 | 150 | 1000 | 2000 |
| | 16 | Compacted | 0.7 | 1.4 | 9.50 | 1.15 | 1,000 | 124 | 95 | 93 | 119 | 200 | 1000 | 2000 |
| | 25 | Compacted | 0.9 | 1.4 | 11.0 | 0.727 | 1,050 | 166 | 128 | 123 | 152 | 300 | 1000 | 2000 |
| | 35 | Compacted | 0.9 | 1.4 | 12.2 | 0.524 | 900 | 206 | 160 | 154 | 184 | 390 | 1000 | 2000 |
| | 50 | Compacted | 1.0 | 1.4 | 13.5 | 0.387 | 850 | 250 | 197 | 188 | 217 | 500 | 1000 | 2000 |
| | 70 | Compacted | 1.1 | 1.4 | 15.5 | 0.268 | 800 | 321 | 254 | 244 | 266 | 700 | 1000 | 2000 |
| | 95 | Compacted | 1.1 | 1.5 | 17.5 | 0.193 | 650 | 391 | 311 | 298 | 318 | 950 | 1000 | 2000 |
| | 120 | Compacted | 1.2 | 1.5 | 19.0 | 0.153 | 650 | 455 | 364 | 349 | 362 | 1200 | 1000 | 2000 |
| | 150 | Compacted | 1.4 | 1.6 | 21 | 0.124 | 700 | 525 | 422 | 404 | 406 | 1500 | 1000 | 2000 |
| | 185 | Compacted | 1.6 | 1.6 | 23 | 0.0991 | 700 | 602 | 485 | 464 | 459 | 1800 | 1000 | 2000 |
| | 240 | Compacted | 1.7 | 1.7 | 26 | 0.0754 | 650 | 711 | 577 | 552 | 533 | 2400 | 1000 | 1500 |

| 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 | 2.5 | 9.4485 | 9.4485 | 9.4485 | 0.6314 | 0.4928 | 0.4466 | 0.1984 | 0.1548 | 0.1403 | 9.4506 | 9.4498 | 9.4495 |
| | 4 | 5.8782 | 5.8782 | 5.8782 | 0.5988 | 0.4602 | 0.4140 | 0.1881 | 0.1446 | 0.1301 | 5.8812 | 5.8800 | 5.8797 |
| | 6 | 3.9273 | 3.9273 | 3.9273 | 0.5754 | 0.4368 | 0.3906 | 0.1808 | 0.1372 | 0.1227 | 3.9315 | 3.9297 | 3.9293 |
| | 10 | 2.3335 | 2.3335 | 2.3335 | 0.5459 | 0.4072 | 0.3610 | 0.1715 | 0.1279 | 0.1134 | 2.3398 | 2.3370 | 2.3362 |
| | 16 | 1.4664 | 1.4664 | 1.4665 | 0.5284 | 0.3898 | 0.3436 | 0.1660 | 0.1225 | 0.1079 | 1.4758 | 1.4715 | 1.4704 |
| | 25 | 0.9271 | 0.9271 | 0.9272 | 0.5159 | 0.3772 | 0.3310 | 0.1621 | 0.1185 | 0.1040 | 0.9412 | 0.9347 | 0.9330 |
| | 35 | 0.6683 | 0.6683 | 0.6684 | 0.5017 | 0.3630 | 0.3168 | 0.1576 | 0.1141 | 0.0995 | 0.6866 | 0.6780 | 0.6758 |
| | 50 | 0.4937 | 0.4937 | 0.4938 | 0.4913 | 0.3527 | 0.3065 | 0.1544 | 0.1108 | 0.0963 | 0.5172 | 0.5060 | 0.5031 |
| | 70 | 0.3420 | 0.3421 | 0.3422 | 0.4716 | 0.3330 | 0.2867 | 0.1482 | 0.1046 | 0.0901 | 0.3727 | 0.3578 | 0.3539 |
| | 95 | 0.2465 | 0.2467 | 0.2468 | 0.4651 | 0.3265 | 0.2803 | 0.1461 | 0.1026 | 0.0881 | 0.2865 | 0.2672 | 0.2621 |
| | 120 | 0.1956 | 0.1959 | 0.1961 | 0.4587 | 0.3201 | 0.2738 | 0.1441 | 0.1005 | 0.0860 | 0.2429 | 0.2202 | 0.2141 |
| | 150 | 0.1587 | 0.1591 | 0.1593 | 0.4555 | 0.3169 | 0.2706 | 0.1431 | 0.0995 | 0.0850 | 0.2137 | 0.1876 | 0.1806 |
| | 185 | 0.1271 | 0.1275 | 0.1279 | 0.4536 | 0.3149 | 0.2687 | 0.1425 | 0.0989 | 0.0844 | 0.1910 | 0.1614 | 0.1532 |
| | 240 | 0.0972 | 0.0977 | 0.0982 | 0.4484 | 0.3098 | 0.2635 | 0.1409 | 0.0973 | 0.0828 | 0.1711 | 0.1379 | 0.1284 |

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

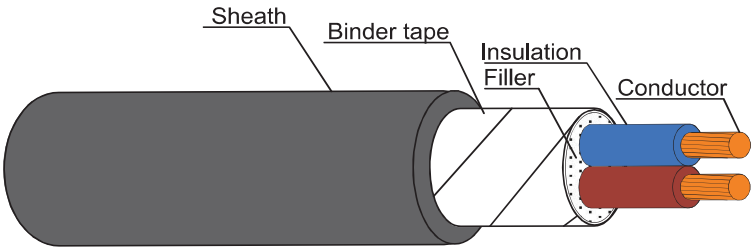
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

# YK FD-0.6/1KV-CV

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

SUPER SOFT YK SERIES CABLE




IEC 60502-1

TIS 2143-2546

Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** 2 Cores: Blue, Brown

**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

**Testing voltag** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
: IEC 60332-3-24 ( Cat.C )

B

## APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | 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/D) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 | 2.5 | Non-Compacted | 0.7 | 1.8 | 11.5 | 7.41 | 2,100 | 36 | 44 | 150 | 1000 | 2000 |
| | 4 | Non-Compacted | 0.7 | 1.8 | 12.5 | 4.61 | 1,700 | 47 | 58 | 190 | 1000 | 2000 |
| | 6 | Non-Compacted | 0.7 | 1.8 | 13.5 | 3.08 | 1,450 | 60 | 73 | 240 | 1000 | 2000 |
| | 10 | Non-Compacted | 0.7 | 1.8 | 15.8 | 1.83 | 1,250 | 81 | 97 | 340 | 1000 | 2000 |
| | 16 | Compacted | 0.7 | 1.8 | 17.5 | 1.15 | 1,000 | 107 | 125 | 500 | 1000 | 2000 |
| | 25 | Compacted | 0.9 | 1.8 | 21 | 0.727 | 1,050 | 143 | 165 | 700 | 1000 | 2000 |
| | 35 | Compacted | 0.9 | 1.8 | 23 | 0.524 | 900 | 175 | 195 | 900 | 1000 | 2000 |
| | 50 | Compacted | 1.0 | 1.8 | 26 | 0.387 | 850 | 214 | 235 | 1200 | 1000 | 2000 |
| | 70 | Compacted | 1.1 | 1.8 | 30 | 0.268 | 800 | 270 | 290 | 1700 | 1000 | |

**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

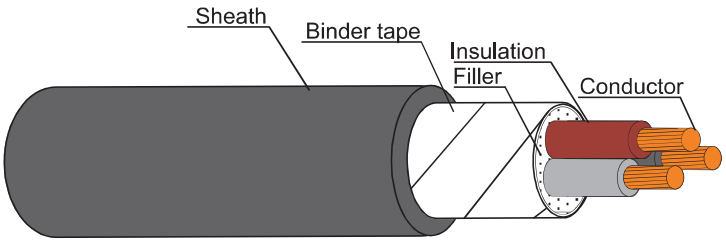
D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 2 | 2.5 | 9.4485 | 0.3210 | 0.1009 | 9.4490 |
| | 4 | 5.8782 | 0.3010 | 0.0946 | 5.8790 |
| | 6 | 3.9273 | 0.2871 | 0.0902 | 3.9284 |
| | 10 | 2.3335 | 0.2710 | 0.0851 | 2.3351 |
| | 16 | 1.4665 | 0.2624 | 0.0824 | 1.4688 |
| | 25 | 0.9272 | 0.2645 | 0.0831 | 0.9309 |
| | 35 | 0.6684 | 0.2569 | 0.0807 | 0.6733 |
| | 50 | 0.4938 | 0.2536 | 0.0797 | 0.5002 |
| | 70 | 0.3422 | 0.2421 | 0.0761 | 0.3506 |

# YK FD-0.6/1KV-CV

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

SUPER SOFT YK SERIES CABLE




IEC 60502-1

TIS 2143-2546

Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** 3 Cores: Brown, Black, Grey

**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

**Testing voltag** : 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

B

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | 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/D) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 2.5 | Non-Compacted | 0.7 | 1.8 | 12.5 | 7.41 | 2,100 | 29 | 43 | 190 | 1000 2000 |
| | 4 | Non-Compacted | 0.7 | 1.8 | 13.5 | 4.61 | 1,700 | 38 | 55 | 250 | 1000 2000 |
| | 6 | Non-Compacted | 0.7 | 1.8 | 14.5 | 3.08 | 1,450 | 49 | 70 | 320 | 1000 2000 |
| | 10 | Non-Compacted | 0.7 | 1.8 | 16.5 | 1.83 | 1,250 | 68 | 92 | 460 | 1000 2000 |
| | 16 | Compacted | 0.7 | 1.8 | 18.5 | 1.15 | 1,000 | 91 | 119 | 650 | 1000 2000 |
| | 25 | Compacted | 0.9 | 1.8 | 22 | 0.727 | 1,050 | 116 | 152 | 950 | 1000 2000 |
| | 35 | Compacted | 0.9 | 1.8 | 25 | 0.524 | 900 | 144 | 184 | 1200 | 1000 2000 |
| | 50 | Compacted | 1.0 | 1.8 | 28 | 0.387 | 850 | 175 | 217 | 1600 | 1000 |
| | 70 | Compacted | 1.1 | 1.9 | 32 | 0.268 | 800 | 224 | 266 | 2300 | 1000 |

**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

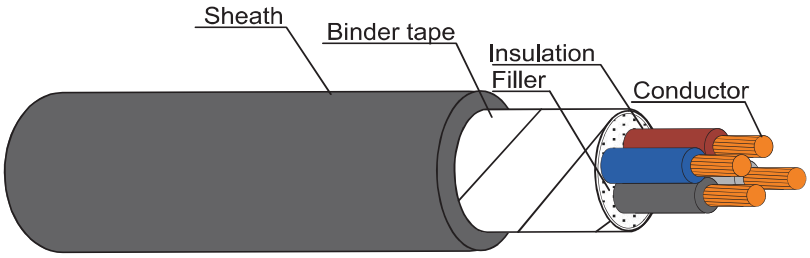
D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 2.5 | 9.4485 | 0.3210 | 0.1009 | 9.4490 |
| | 4 | 5.8782 | 0.3010 | 0.0946 | 5.8790 |
| | 6 | 3.9274 | 0.2871 | 0.0902 | 3.9284 |
| | 10 | 2.3335 | 0.2710 | 0.0851 | 2.3351 |
| | 16 | 1.4665 | 0.2624 | 0.0824 | 1.4688 |
| | 25 | 0.9272 | 0.2645 | 0.0831 | 0.9309 |
| | 35 | 0.6685 | 0.2569 | 0.0807 | 0.6733 |
| | 50 | 0.4939 | 0.2536 | 0.0797 | 0.5003 |
| | 70 | 0.3424 | 0.2421 | 0.0761 | 0.3507 |

# YK FD-0.6/1KV-CV

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

SUPER SOFT YK SERIES CABLE




IEC 60502-1

TIS 2143-2546

Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** 4 Cores : Blue, Brown, Black, Grey

**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

**Testing voltag** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
: IEC 60332-3-24 ( Cat.C )

B

## APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | 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/D) | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 2.5 | Non-Compacted | 0.7 | 1.8 | 13.0 | 7.41 | 2,100 | 29 | 43 | 230 | 1000 | 2000 |
| | 4 | Non-Compacted | 0.7 | 1.8 | 14.5 | 4.61 | 1,700 | 38 | 55 | 300 | 1000 | 2000 |
| | 6 | Non-Compacted | 0.7 | 1.8 | 16.0 | 3.08 | 1,450 | 49 | 70 | 390 | 1000 | 2000 |
| | 10 | Non-Compacted | 0.7 | 1.8 | 18.0 | 1.83 | 1,250 | 68 | 92 | 550 | 1000 | 2000 |
| | 16 | Compacted | 0.7 | 1.8 | 20 | 1.15 | 1,000 | 91 | 119 | 800 | 1000 | 2000 |
| | 25 | Compacted | 0.9 | 1.8 | 24 | 0.727 | 1,050 | 116 | 152 | 1200 | 1000 | 2000 |
| | 35 | Compacted | 0.9 | 1.8 | 27 | 0.524 | 900 | 144 | 184 | 1600 | 1000 | 2000 |
| | 50 | Compacted | 1.0 | 1.9 | 30 | 0.387 | 850 | 175 | 217 | 2100 | 1000 | |
| | 70 | Compacted | 1.1 | 2.0 | 35 | 0.268 | 800 | 224 | 266 | 3000 | 1000 | |

**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

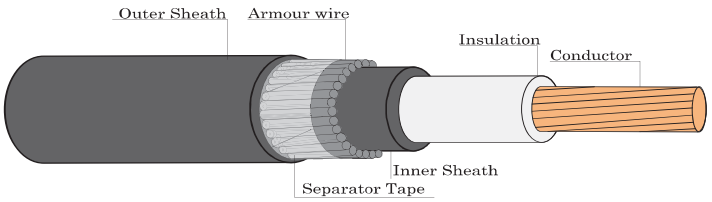
| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 4 | 2.5 | 9.4485 | 0.3210 | 0.1009 | 9.4490 |
| | 4 | 5.8782 | 0.3010 | 0.0946 | 5.8790 |
| | 6 | 3.9274 | 0.2871 | 0.0902 | 3.9284 |
| | 10 | 2.3335 | 0.2710 | 0.0851 | 2.3351 |
| | 16 | 1.4665 | 0.2624 | 0.0824 | 1.4688 |
| | 25 | 0.9272 | 0.2645 | 0.0831 | 0.9309 |
| | 35 | 0.6685 | 0.2569 | 0.0807 | 0.6733 |
| | 50 | 0.4939 | 0.2536 | 0.0797 | 0.5003 |
| | 70 | 0.3424 | 0.2421 | 0.0761 | 0.3507 |

# 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

TIS 2143-2546




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
Single-core : Natural (Translucent)

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Aluminium wires

**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

**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 ($mm^2$) | 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 (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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Spaced | Touching | Trefoil | | | |
| 1 | 1.5 | Non-Compacted | 0.7 | 1.2 | 5.9 | 1.25 | 1.8 | 12.5 | 12.1 | 2,500 | 36 | 30 | 29 | 32 | 200 | 500/D |
| | 2.5 | Non-Compacted | 0.7 | 1.2 | 6.4 | 1.25 | 1.8 | 13.0 | 7.41 | 2,100 | 48 | 39 | 38 | 41 | 220 | 500/D |
| | 4 | Non-Compacted | 0.7 | 1.2 | 6.9 | 1.25 | 1.8 | 13.5 | 4.61 | 1,700 | 62 | 51 | 50 | 53 | 250 | 500/D |
| | 6 | Non-Compacted | 0.7 | 1.2 | 7.5 | 1.25 | 1.8 | 14.0 | 3.08 | 1,450 | 78 | 64 | 63 | 65 | 280 | 500/D |
| | 10 | Compacted | 0.7 | 1.2 | 8.0 | 1.25 | 1.8 | 14.5 | 1.83 | 1,250 | 104 | 85 | 83 | 86 | 330 | 500/D |
| | 15 | Compacted | 0.7 | 1.2 | 9.0 | 1.25 | 1.8 | 16 | 1.15 | 1,000 | 136 | 112 | 109 | 110 | 410 | 500/D |
| | 25 | Compacted | 0.9 | 1.2 | 10.5 | 1.25 | 1.8 | 17 | 0.727 | 1,050 | 179 | 147 | 143 | 141 | 550 | 500/D |
| | 35 | Compacted | 0.9 | 1.2 | 11.5 | 1.25 | 1.8 | 19 | 0.524 | 900 | 217 | 179 | 174 | 169 | 650 | 500/D |
| | 50 | Compacted | 1.0 | 1.2 | 13.0 | 1.25 | 1.8 | 20 | 0.387 | 850 | 261 | 216 | 210 | 199 | 800 | 500/D |
| | 70 | Compacted | 1.1 | 1.2 | 15.0 | 1.25 | 1.8 | 22 | 0.268 | 800 | 327 | 270 | 262 | 243 | 1,000 | 500/D |
| | 95 | Compacted | 1.1 | 1.2 | 16.5 | 1.60 | 1.8 | 24 | 0.193 | 650 | 404 | 334 | 325 | 292 | 1,400 | 500/D |
| | 120 | Compacted | 1.2 | 1.2 | 18.5 | 1.60 | 1.8 | 26 | 0.153 | 650 | 467 | 387 | 376 | 331 | 1,600 | 500/D |
| | 150 | Compacted | 1.4 | 1.2 | 20 | 1.60 | 1.8 | 28 | 0.124 | 700 | 532 | 442 | 429 | 371 | 2,000 | 500/D |
| | 185 | Compacted | 1.6 | 1.2 | 22 | 2.00 | 1.8 | 31 | 0.0991 | 700 | 617 | 515 | 499 | 421 | 2,500 | 500/D |
| | 240 | Compacted | 1.7 | 1.2 | 25 | 2.00 | 1.9 | 33 | 0.0754 | 650 | 733 | 613 | 594 | 487 | 3,100 | 500/D |
| | 300 | Compacted | 1.8 | 1.2 | 28 | 2.00 | 2.0 | 36 | 0.0601 | 600 | 844 | 707 | 684 | 549 | 3,700 | 500/D |
| | 400 | Compacted | 2.0 | 1.2 | 31 | 2.00 | 2.2 | 40 | 0.0470 | 600 | 979 | 822 | 794 | 622 | 4,700 | 500/D |
| | 500 | Compacted | 2.2 | 1.2 | 34 | 2.00 | 2.3 | 43 | 0.0366 | 600 | 1139 | 957 | 921 | 703 | 6,000 | 500/D |
| | 630 | Compacted | 2.4 | 1.3 | 38 | 2.50 | 2.4 | 49 | 0.0283 | 550 | 1333 | 1120 | 1075 | 795 | 7,500 | 500/D |
| | 800 | Compacted | 2.6 | 1.3 | 43 | 2.50 | 2.6 | 53 | 0.0221 | 550 | 1527 | 1280 | 1222 | 881 | 9,000 | 300/D |
| | 1000 | Compacted | 2.8 | 1.4 | 49 | 2.50 | 2.7 | 60 | 0.0176 | 500 | 1739 | 1453 | 1377 | 965 | 12,000 | 300/D |

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

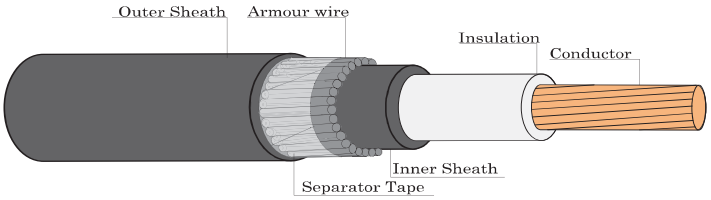
B

# 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

TIS 2143-2546




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
Single-core : Natural (Translucent)

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Aluminium wires

**Sheath** : Black flame retardant polyvinyl chloride (PVC/ST2)

## TECHNICAL DATA

**Classification** : Maximum concuctor 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

**Testing voltage** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
IEC 60332-3-24 (Cat.C)

B

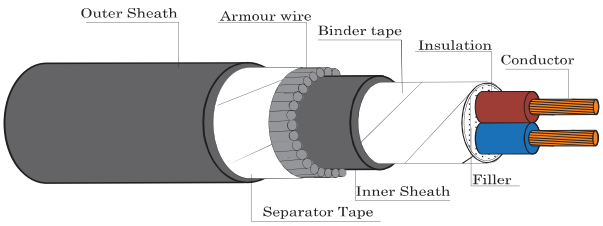
## APPLICATION

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

| Number of core | Nominal cross sectional area ($mm^2$) | 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

TIS 2143-2546

Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : 2 Cores: Blue, Brown

**Inner Sheath:** Black polyvinyl chloride (PVC)

**Armour** : Galvanized Steel Wires

**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

**Testing voltag** : 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

B

| Number of cores | Nominal cross sectional area ($mm^2$) | 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 | 9.7 | 0.8 | 1.8 | 15.0 | 12.1 | 2,500 | 28 | 33 | 380 | 500/D |
| | 2.5 | Non-Compacted | 0.7 | 1.2 | 10.5 | 0.8 | 1.8 | 16.5 | 7.41 | 2,100 | 37 | 43 | 420 | 500/D |
| | 4 | Non-Compacted | 0.7 | 1.2 | 11.5 | 1.25 | 1.8 | 18.0 | 4.61 | 1,700 | 50 | 57 | 600 | 500/D |
| | 6 | Non-Compacted | 0.7 | 1.2 | 12.5 | 1.25 | 1.8 | 19.5 | 3.08 | 1,450 | 63 | 71 | 700 | 500/D |
| | 10 | Compacted | 0.7 | 1.2 | 14.0 | 1.25 | 1.8 | 20 | 1.83 | 1,250 | 83 | 93 | 800 | 500/D |
| | 16 | Compacted | 0.7 | 1.2 | 16.0 | 1.25 | 1.8 | 23 | 1.150 | 1,000 | 111 | 121 | 1,200 | 500/D |
| | 25 | Compacted | 0.9 | 1.2 | 19.0 | 1.6 | 1.8 | 26 | 0.727 | 1,050 | 147 | 156 | 1,500 | 500/D |
| | 35 | Compacted | 0.9 | 1.2 | 22 | 2.0 | 1.8 | 30 | 0.524 | 900 | 182 | 188 | 2,000 | 500/D |
| | 50 | Compacted | 1.0 | 1.2 | 24 | 2.0 | 1.9 | 33 | 0.387 | 850 | 219 | 222 | 2,400 | 500/D |
| | 70 | Compacted | 1.1 | 1.2 | 28 | 2.0 | 2.0 | 36 | 0.268 | 800 | 275 | 271 | 3,100 | 500/D |
| | 95 | Compacted | 1.1 | 1.2 | 32 | 2.0 | 2.1 | 40 | 0.193 | 650 | 337 | 325 | 3,800 | 500/D |
| | 120 | Compacted | 1.2 | 1.2 | 35 | 2.0 | 2.3 | 44 | 0.153 | 650 | 389 | 368 | 4,600 | 500/D |
| | 150 | Compacted | 1.4 | 1.3 | 39 | 2.0 | 2.4 | 48 | 0.124 | 700 | 444 | 412 | 6,000 | 500/D |
| | 185 | Compacted | 1.6 | 1.3 | 43 | 2.5 | 2.6 | 54 | 0.0991 | 700 | 509 | 463 | 7,000 | 500/D |
| | 240 | Compacted | 1.7 | 1.4 | 49 | 2.5 | 2.7 | 60 | 0.0754 | 650 | 600 | 534 | 8,500 | 500/D |
| | 300 | Compacted | 1.8 | 1.5 | 54 | 2.5 | 2.9 | 66 | 0.0601 | 600 | 684 | 597 | 10,000 | 300/D |
| | 400 | Compacted | 2.0 | 1.7 | 61 | 2.5 | 3.2 | 73 | 0.0470 | 600 | 783 | 670 | 12,500 | 300/D |

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

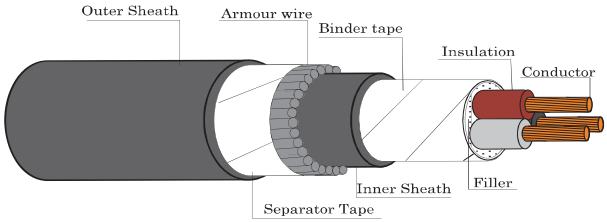
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | 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 | 0.0765 | 0.4997 |
| | 70 | 0.3423 | 0.2395 | 0.0752 | 0.3504 |
| | 95 | 0.2468 | 0.2331 | 0.0732 | 0.2575 |
| | 120 | 0.1960 | 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

TIS 2143-2546

Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : 3 Cores: Brown, Black, Grey

**Inner Sheath:** Black polyvinyl chloride (PVC)

**Armour** : Galvanized Steel Wires

**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

**Testing voltag** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
: IEC 60332-3-24 ( Cat.C )

B

## APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 1.5 | Non-Compacted | 0.7 | 1.2 | 10.0 | 0.8 | 1.8 | 16.0 | 12.1 | 2,500 | 24 | 26 | 400 | 500/D |
| | 2.5 | Non-Compacted | 0.7 | 1.2 | 11.0 | 1.25 | 1.8 | 18.0 | 7.41 | 2,100 | 32 | 34 | 550 | 500/D |
| | 4 | Non-Compacted | 0.7 | 1.2 | 12.0 | 1.25 | 1.8 | 19.0 | 4.61 | 1,700 | 42 | 44 | 650 | 500/D |
| | 6 | Non-Compacted | 0.7 | 1.2 | 13.5 | 1.25 | 1.8 | 20 | 3.08 | 1,450 | 53 | 55 | 800 | 500/D |
| | 10 | Compacted | 0.7 | 1.2 | 14.5 | 1.6 | 1.8 | 21 | 1.83 | 1,250 | 71 | 72 | 950 | 500/D |
| | 16 | Compacted | 0.7 | 1.2 | 17.0 | 1.6 | 1.8 | 24 | 1.150 | 1,000 | 94 | 93 | 1,300 | 500/D |
| | 25 | Compacted | 0.9 | 1.2 | 21 | 2.0 | 1.8 | 28 | 0.727 | 1,050 | 125 | 120 | 1,800 | 500/D |
| | 35 | Compacted | 0.9 | 1.2 | 23 | 2.0 | 1.8 | 31 | 0.524 | 900 | 154 | 145 | 2,400 | 500/D |
| | 50 | Compacted | 1.0 | 1.2 | 26 | 2.0 | 2.0 | 34 | 0.387 | 850 | 186 | 171 | 3,000 | 500/D |
| | 70 | Compacted | 1.1 | 1.2 | 30 | 2.0 | 2.1 | 39 | 0.268 | 800 | 233 | 208 | 3,800 | 500/D |
| | 95 | Compacted | 1.1 | 1.2 | 34 | 2.0 | 2.2 | 43 | 0.193 | 650 | 286 | 249 | 4,800 | 500/D |
| | 120 | Compacted | 1.2 | 1.2 | 38 | 2.0 | 2.3 | 47 | 0.153 | 650 | 332 | 283 | 6,000 | 500/D |
| | 150 | Compacted | 1.4 | 1.3 | 42 | 2.5 | 2.5 | 52 | 0.124 | 700 | 376 | 315 | 7,500 | 500/D |
| | 185 | Compacted | 1.6 | 1.4 | 47 | 2.5 | 2.7 | 58 | 0.0991 | 700 | 430 | 354 | 9,000 | 500/D |
| | 240 | Compacted | 1.7 | 1.5 | 53 | 2.5 | 2.9 | 64 | 0.0754 | 650 | 505 | 406 | 11,000 | 300/D |
| | 300 | Compacted | 1.8 | 1.6 | 58 | 2.5 | 3.0 | 70 | 0.0601 | 600 | 574 | 453 | 13,500 | 300/D |
| | 400 | Compacted | 2.0 | 1.8 | 65 | 3.15 | 3.4 | 80 | 0.0470 | 600 | 652 | 501 | 17,500 | 300/D |

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

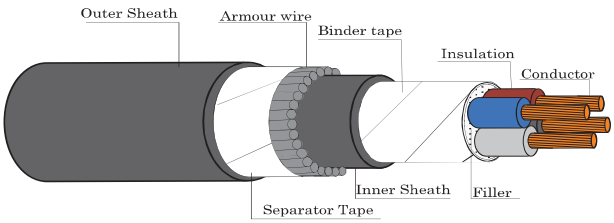
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | 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

TIS 2143-2546

Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : 4 Cores: Blue, Brown, Black, Grey

**Inner Sheath:** Black polyvinyl chloride (PVC)

**Armour** : Galvanized Steel Wires

**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

**Testing voltag** : 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 ($mm^2$) | 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 | 17.5 | 12.1 | 2,500 | 24 | 26 | 550 | 500/D |
| | 2.5 | Non-Compacted | 0.7 | 1.2 | 12.0 | 1.25 | 1.8 | 19.0 | 7.41 | 2,100 | 32 | 34 | 650 | 500/D |
| | 4 | Non-Compacted | 0.7 | 1.2 | 13.5 | 1.25 | 1.8 | 20.0 | 4.61 | 1,700 | 42 | 44 | 750 | 500/D |
| | 6 | Non-Compacted | 0.7 | 1.2 | 15.0 | 1.25 | 1.8 | 21 | 3.08 | 1,450 | 53 | 55 | 900 | 500/D |
| | 10 | Compacted | 0.7 | 1.2 | 16.0 | 1.25 | 1.8 | 23 | 1.83 | 1,250 | 71 | 72 | 1100 | 500/D |
| | 16 | Compacted | 0.7 | 1.2. | 18.5 | 1.6 | 1.8 | 26 | 1.150 | 1,000 | 94 | 93 | 1,600 | 500/D |
| | 25 | Compacted | 0.9 | 1.2 | 23 | 2.0 | 1.8 | 31 | 0.727 | 1,050 | 125 | 120 | 2,300 | 500/D |
| | 35 | Compacted | 0.9 | 1.2 | 25 | 2.0 | 1.9 | 34 | 0.524 | 900 | 154 | 145 | 2,900 | 500/D |
| | 50 | Compacted | 1.0 | 1.2 | 29 | 2.0 | 2.1 | 38 | 0.387 | 850 | 186 | 171 | 3,600 | 500/D |
| | 70 | Compacted | 1.1 | 1.2 | 33 | 2.0 | 2.2 | 42 | 0.268 | 800 | 233 | 208 | 4,700 | 500/D |
| | 95 | Compacted | 1.1 | 1.2 | 38 | 2.0 | 2.3 | 48 | 0.193 | 650 | 286 | 249 | 6,000 | 500/D |
| | 120 | Compacted | 1.2 | 1.3 | 42 | 2.5 | 2.5 | 53 | 0.153 | 650 | 332 | 283 | 7,500 | 500/D |
| | 150 | Compacted | 1.4 | 1.4 | 46 | 2.5 | 2.7 | 58 | 0.124 | 700 | 376 | 315 | 9,000 | 500/D |
| | 185 | Compacted | 1.6 | 1.5 | 52 | 2.5 | 2.8 | 64 | 0.0991 | 700 | 430 | 354 | 11,000 | 500/D |
| | 240 | Compacted | 1.7 | 1.6 | 59 | 2.5 | 3.1 | 71 | 0.0754 | 650 | 505 | 406 | 14,000 | 300/D |
| | 300 | Compacted | 1.8 | 1.7 | 65 | 3.15 | 3.3 | 79 | 0.0601 | 600 | 574 | 453 | 17,000 | 300/D |
| | 400 | Compacted | 2.0 | 1.9 | 73 | 3.15 | 3.6 | 87 | 0.0470 | 600 | 652 | 501 | 22,000 | 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

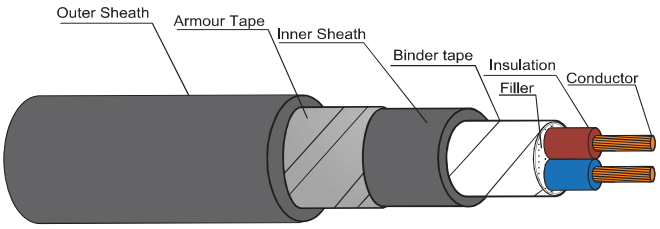
D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | 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 |

B

# 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

Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper
: Multi-core : Sizes 1.5 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : 2 Cores: Blue, Brown

**Inner Sheath:** Black polyvinyl chloride (PVC)

**Armour** : Two galvanized flat steel 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

**Testing voltag** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
: IEC 60332-3-24 ( Cat.C )

B

## 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) | 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 | 9.70 | 0.2 | 1.8 | 15.0 | 12.1 | 2,500 | 28 | 33 | 330 | 500/D |
| | 2.5 | Non-Compacted | 0.7 | 1.2 | 10.5 | 0.2 | 1.8 | 16.0 | 7.41 | 2,100 | 37 | 43 | 380 | 500/D |
| | 4 | Non-Compacted | 0.7 | 1.2 | 11.5 | 0.2 | 1.8 | 17.0 | 4.61 | 1,700 | 48 | 56 | 440 | 500/D |
| | 6 | Non-Compacted | 0.7 | 1.2 | 12.5 | 0.2 | 1.8 | 18.0 | 3.08 | 1,450 | 61 | 70 | 500 | 500/D |
| | 10 | Compacted | 0.7 | 1.2 | 13.5 | 0.2 | 1.8 | 19.0 | 1.83 | 1,250 | 82 | 92 | 600 | 500/D |
| | 16 | Compacted | 0.7 | 1.2 | 16.0 | 0.2 | 1.8 | 21 | 1.150 | 1,000 | 108 | 120 | 800 | 500/D |
| | 25 | Compacted | 0.9 | 1.2 | 19.0 | 0.2 | 1.8 | 24 | 0.727 | 1,050 | 144 | 154 | 1100 | 500/D |
| | 35 | Compacted | 0.9 | 1.2 | 21 | 0.2 | 1.8 | 26 | 0.524 | 900 | 176 | 185 | 1300 | 500/D |
| | 50 | Compacted | 1.0 | 1.2 | 24 | 0.2 | 1.9 | 30 | 0.387 | 850 | 213 | 219 | 1700 | 500/D |
| | 70 | Compacted | 1.1 | 1.2 | 28 | 0.2 | 2.0 | 33 | 0.268 | 800 | 267 | 268 | 2200 | 500/D |
| | 95 | Compacted | 1.1 | 1.2 | 31 | 0.5 | 2.2 | 38 | 0.193 | 650 | 331 | 322 | 3100 | 500/D |
| | 120 | Compacted | 1.2 | 1.2 | 35 | 0.5 | 2.3 | 42 | 0.153 | 650 | 383 | 366 | 3800 | 500/D |
| | 150 | Compacted | 1.4 | 1.3 | 39 | 0.5 | 2.4 | 46 | 0.124 | 700 | 435 | 409 | 4500 | 500/D |
| | 185 | Compacted | 1.6 | 1.3 | 43 | 0.5 | 2.6 | 51 | 0.0991 | 700 | 500 | 461 | 5400 | 500/D |
| | 240 | Compacted | 1.7 | 1.4 | 49 | 0.5 | 2.8 | 57 | 0.0754 | 650 | 590 | 531 | 6900 | 500/D |
| | 300 | Compacted | 1.8 | 1.5 | 54 | 0.5 | 2.9 | 62 | 0.0601 | 600 | 676 | 596 | 8300 | 500/D |
| | 400 | Compacted | 2.0 | 1.7 | 61 | 0.5 | 3.2 | 70 | 0.0470 | 600 | 765 | 664 | 10500 | 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

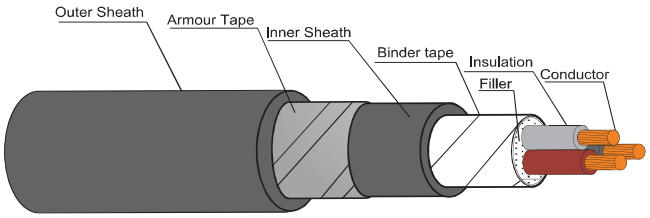
D : Packing in drum

| 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) |
|---|---|---|---|---|---|
| 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 | 0.0765 | 0.4997 |
| | 70 | 0.3423 | 0.2395 | 0.0752 | 0.3504 |
| | 95 | 0.2468 | 0.2331 | 0.0732 | 0.2575 |
| | 120 | 0.1960 | 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-STA

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

IEC 60502-1




Category C
FLAME RETARDANT

### CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper
: Multi-core : Sizes 1.5 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : 3 Cores: Brown, Black, Grey

**Inner Sheath:** Black polyvinyl chloride (PVC)

**Armour** : Two galvanized flat steel 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

**Testing voltag** : 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 (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 | 10.0 | 0.2 | 1.8 | 15.5 | 12.1 | 2,500 | 24 | 28 | 370 | 500/D |
| | 2.5 | Non-Compacted | 0.7 | 1.2 | 11.0 | 0.2 | 1.8 | 16.5 | 7.41 | 2,100 | 31 | 37 | 420 | 500/D |
| | 4 | Non-Compacted | 0.7 | 1.2 | 12.0 | 0.2 | 1.8 | 17.5 | 4.61 | 1,700 | 41 | 48 | 500 | 500/D |
| | 6 | Non-Compacted | 0.7 | 1.2 | 13.5 | 0.2 | 1.8 | 19.0 | 3.08 | 1,450 | 52 | 59 | 600 | 500/D |
| | 10 | Compacted | 0.7 | 1.2 | 14.5 | 0.2 | 1.8 | 20 | 1.83 | 1,250 | 69 | 78 | 700 | 500/D |
| | 16 | Compacted | 0.7 | 1.2 | 17.0 | 0.2 | 1.8 | 22 | 1.150 | 1,000 | 91 | 101 | 1000 | 500/D |
| | 25 | Compacted | 0.9 | 1.2 | 20 | 0.2 | 1.8 | 26 | 0.727 | 1,050 | 122 | 130 | 1300 | 500/D |
| | 35 | Compacted | 0.9 | 1.2 | 23 | 0.2 | 1.9 | 28 | 0.524 | 900 | 149 | 156 | 1700 | 500/D |
| | 50 | Compacted | 1.0 | 1.2 | 26 | 0.2 | 2.0 | 31 | 0.387 | 850 | 181 | 185 | 2200 | 500/D |
| | 70 | Compacted | 1.1 | 1.2 | 30 | 0.2 | 2.1 | 36 | 0.268 | 800 | 227 | 226 | 2900 | 500/D |
| | 95 | Compacted | 1.1 | 1.2 | 34 | 0.5 | 2.3 | 41 | 0.193 | 650 | 281 | 272 | 4000 | 500/D |
| | 120 | Compacted | 1.2 | 1.2 | 37 | 0.5 | 2.4 | 45 | 0.153 | 650 | 325 | 309 | 5000 | 500/D |
| | 150 | Compacted | 1.4 | 1.3 | 41 | 0.5 | 2.5 | 49 | 0.124 | 700 | 370 | 345 | 6000 | 500/D |
| | 185 | Compacted | 1.6 | 1.4 | 47 | 0.5 | 2.7 | 55 | 0.0991 | 700 | 426 | 389 | 7500 | 500/D |
| | 240 | Compacted | 1.7 | 1.5 | 53 | 0.5 | 2.9 | 61 | 0.0754 | 650 | 504 | 449 | 9500 | 300/D |
| | 300 | Compacted | 1.8 | 1.6 | 58 | 0.5 | 3.1 | 67 | 0.0601 | 600 | 576 | 504 | 11500 | 300/D |
| | 400 | Compacted | 2.0 | 1.8 | 65 | 0.5 | 3.4 | 75 | 0.0470 | 600 | 662 | 567 | 14500 | 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

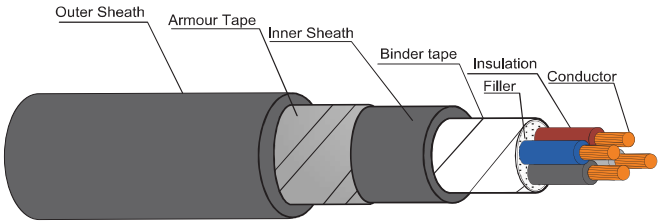
| Number of cores | Nominal cross sectional area (mm²) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 1.5 | 15.4287 | 0.3427 | 0.1077 | 15.4291 |
| | 2.5 | 9.4485 | 0.3249 | 0.1021 | 9.4491 |
| | 4 | 5.8782 | 0.3026 | 0.0951 | 5.8790 |
| | 6 | 3.9274 | 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 |

B

# 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




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Non-compacted and compacted round annealed copper
: Multi-core : Sizes 1.5 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification** : 4 Cores: Blue, Brown, Black, Grey

**Inner Sheath:** Black polyvinyl chloride (PVC)

**Armour** : Two galvanized flat steel 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

**Testing voltag** : 3,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
: IEC 60332-3-24 ( Cat.C )

B

## 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) | 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 | 0.2 | 1.8 | 16.0 | 12.1 | 2,500 | 24 | 28 | 410 | 500/D |
| | 2.5 | Non-Compacted | 0.7 | 1.2 | 12.0 | 0.2 | 1.8 | 17.5 | 7.41 | 2,100 | 31 | 37 | 480 | 500/D |
| | 4 | Non-Compacted | 0.7 | 1.2 | 13.5 | 0.2 | 1.8 | 18.5 | 4.61 | 1,700 | 41 | 48 | 550 | 500/D |
| | 6 | Non-Compacted | 0.7 | 1.2 | 15.0 | 0.2 | 1.8 | 20 | 3.08 | 1,450 | 52 | 59 | 700 | 500/D |
| | 10 | Compacted | 0.7 | 1.2 | 16.0 | 0.2 | 1.8 | 22 | 1.83 | 1,250 | 69 | 78 | 850 | 500/D |
| | 16 | Compacted | 0.7 | 1.2 | 18.5 | 0.2 | 1.8 | 23 | 1.150 | 1,000 | 91 | 101 | 1200 | 500/D |
| | 25 | Compacted | 0.9 | 1.2 | 22 | 0.2 | 1.8 | 28 | 0.727 | 1,050 | 122 | 130 | 1700 | 500/D |
| | 35 | Compacted | 0.9 | 1.2 | 25 | 0.2 | 1.9 | 30 | 0.524 | 900 | 149 | 156 | 2100 | 500/D |
| | 50 | Compacted | 1.0 | 1.2 | 28 | 0.2 | 2.1 | 34 | 0.387 | 850 | 181 | 185 | 2700 | 500/D |
| | 70 | Compacted | 1.1 | 1.2 | 33 | 0.5 | 2.2 | 40 | 0.268 | 800 | 227 | 226 | 3900 | 500/D |
| | 95 | Compacted | 1.1 | 1.2 | 37 | 0.5 | 2.4 | 45 | 0.193 | 650 | 281 | 272 | 5000 | 500/D |
| | 120 | Compacted | 1.2 | 1.3 | 42 | 0.5 | 2.5 | 49 | 0.153 | 650 | 325 | 309 | 6500 | 500/D |
| | 150 | Compacted | 1.4 | 1.4 | 46 | 0.5 | 2.7 | 54 | 0.124 | 700 | 370 | 345 | 7500 | 500/D |
| | 185 | Compacted | 1.6 | 1.5 | 52 | 0.5 | 2.9 | 61 | 0.0991 | 700 | 426 | 389 | 9500 | 500/D |
| | 240 | Compacted | 1.7 | 1.6 | 59 | 0.5 | 3.1 | 68 | 0.0754 | 650 | 504 | 449 | 12000 | 500/D |
| | 300 | Compacted | 1.8 | 1.7 | 65 | 0.5 | 3.4 | 74 | 0.0601 | 600 | 576 | 504 | 14500 | 500/D |
| | 400 | Compacted | 2.0 | 1.9 | 73 | 0.5 | 3.6 | 83 | 0.0470 | 600 | 662 | 567 | 18500 | 500/D |

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

D : Packing in drum

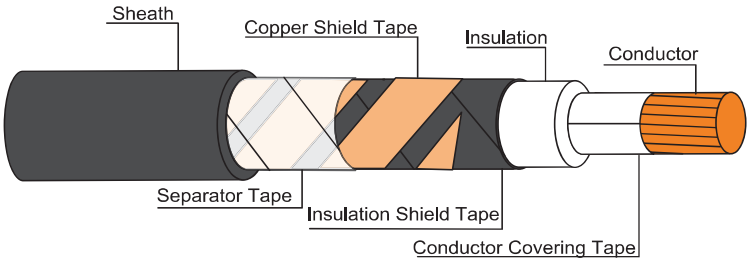
Deep of laying (For cable laid direct in ground) 0.8 m

| 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 | 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 PVC SHEATHED POWER CABLE

IEC 60502-1




### CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive tape

**Core identification**
Single-core : Natural (Translucent)

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC/ST2)

### TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 3,300 Volts

**Rated voltage** : 1,800 Volts between Line to Earth
: 3,000 Volts between Line to Line

**Testing voltage** : 6,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

### APPLICATION

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

| Number of core | Nominal cross sectional area ($mm^2$) | 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) | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced (A) | Touching (A) | Trefoil (A) | | | |
| 1 | 10 | 6 | 2.0 | 1.8 | 12.0 | 1.83 | 2,900 | 100 | 81 | 79 | 85 | 220 | 500/D |
| | 16 | 6 | 2.0 | 1.8 | 13.0 | 1.15 | 2,450 | 132 | 106 | 104 | 109 | 290 | 500/D |
| | 25 | 6 | 2.0 | 1.8 | 14.5 | 0.727 | 2,050 | 173 | 140 | 136 | 140 | 390 | 300/D |
| | 35 | 6 | 2.0 | 1.9 | 15.5 | 0.524 | 1,800 | 211 | 171 | 166 | 167 | 490 | 300/D |
| | 50 | 6 | 2.0 | 2.0 | 16.5 | 0.387 | 1,550 | 255 | 207 | 201 | 198 | 600 | 300/D |
| | 70 | 12 | 2.0 | 2.1 | 18.5 | 0.268 | 1,350 | 321 | 261 | 253 | 241 | 850 | 300/D |
| | 95 | 15 | 2.0 | 2.2 | 21 | 0.193 | 1,150 | 395 | 321 | 311 | 289 | 1,100 | 300/D |
| | 120 | 18 | 2.0 | 2.3 | 22 | 0.153 | 1,050 | 457 | 373 | 362 | 328 | 1,400 | 300/D |
| | 150 | 18 | 2.0 | 2.4 | 24 | 0.124 | 950 | 522 | 426 | 413 | 368 | 1,600 | 300/D |
| | 185 | 30 | 2.0 | 2.5 | 26 | 0.0991 | 850 | 601 | 492 | 476 | 415 | 2,000 | 300/D |
| | 240 | 34 | 2.0 | 2.7 | 28 | 0.0754 | 750 | 716 | 587 | 567 | 480 | 2,600 | 300/D |
| | 300 | 34 | 2.0 | 2.9 | 30 | 0.0601 | 700 | 827 | 678 | 654 | 541 | 3,200 | 300/D |
| | 400 | 53 | 2.0 | 3.1 | 33 | 0.0470 | 600 | 963 | 791 | 762 | 611 | 4,000 | 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

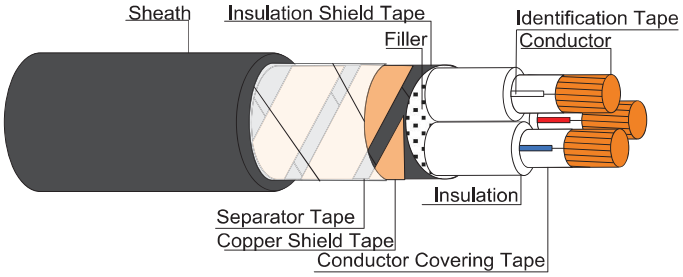
| Number of core | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | | | Inductance L (mH/km) | | | Reactance XL (Ω/km) | | | Impedance Z (Ω/km) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Space | Touching | Trefoil | Space | Touching | Trefoil | Space | Touching | Trefoil | Space | Touching | Trefoil |
| 1 | 10 | 2.3335 | 2.3335 | 2.3335 | 0.6258 | 0.4872 | 0.4410 | 0.1966 | 0.1531 | 0.1385 | 2.3417 | 2.3385 | 2.3376 |
| | 16 | 1.4664 | 1.4664 | 1.4664 | 0.5945 | 0.4559 | 0.4096 | 0.1868 | 0.1432 | 0.1287 | 1.4783 | 1.4734 | 1.4721 |
| | 25 | 0.9271 | 0.9271 | 0.9271 | 0.5669 | 0.4283 | 0.3820 | 0.1781 | 0.1345 | 0.1200 | 0.9440 | 0.9368 | 0.9349 |
| | 35 | 0.6683 | 0.6683 | 0.6683 | 0.5492 | 0.4106 | 0.3644 | 0.1725 | 0.1290 | 0.1145 | 0.6902 | 0.6807 | 0.6781 |
| | 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 | 0.3570 |
| | 95 | 0.2465 | 0.2466 | 0.2467 | 0.4940 | 0.3553 | 0.3091 | 0.1552 | 0.1116 | 0.0971 | 0.2913 | 0.2707 | 0.2652 |
| | 120 | 0.1956 | 0.1958 | 0.1959 | 0.4829 | 0.3443 | 0.2981 | 0.1517 | 0.1082 | 0.0936 | 0.2475 | 0.2237 | 0.2172 |
| | 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 | 0.0840 | 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 | 0.1039 |

B

# 1.8/3KV-CV

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

IEC 60502-1




### CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive tape

**Core identification**
3 Cores : White, Red, Blue

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC/ST2)

### TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 3,300 Volts

**Rated voltage** : 1,800 Volts between Line to Earth
: 3,000 Volts between Line to Line

**Testing voltage** : 6,500 Volts

**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

B

### APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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) | 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 | 10 | 6 | 2.0 | 1.8 | 23 | 1.83 | 2,900 | 73 | 80 | 650 | 500/D |
| | 16 | 6 | 2.0 | 1.8 | 25 | 1.15 | 2,450 | 96 | 103 | 850 | 500/D |
| | 25 | 6 | 2.0 | 1.8 | 28 | 0.727 | 2,050 | 126 | 133 | 1,200 | 300/D |
| | 35 | 6 | 2.0 | 1.9 | 30 | 0.524 | 1,800 | 154 | 159 | 1,500 | 300/D |
| | 50 | 6 | 2.0 | 2.0 | 33 | 0.387 | 1,550 | 186 | 188 | 1,900 | 300/D |
| | 70 | 12 | 2.0 | 2.1 | 37 | 0.268 | 1,350 | 233 | 230 | 2,600 | 300/D |
| | 95 | 15 | 2.0 | 2.2 | 41 | 0.193 | 1,150 | 286 | 275 | 3,500 | 300/D |
| | 120 | 18 | 2.0 | 2.3 | 44 | 0.153 | 1,050 | 331 | 313 | 4,300 | 300/D |
| | 150 | 18 | 2.0 | 2.4 | 48 | 0.124 | 950 | 377 | 350 | 5,000 | 300/D |
| | 185 | 30 | 2.0 | 2.5 | 52 | 0.0991 | 850 | 434 | 395 | 6,500 | 300/D |
| | 240 | 34 | 2.0 | 2.7 | 57 | 0.0754 | 750 | 514 | 457 | 8,000 | 300/D |
| | 300 | 34 | 2.0 | 2.9 | 62 | 0.0601 | 700 | 589 | 513 | 12,000 | 300/D |
| | 400 | 53 | 2.0 | 3.1 | 69 | 0.0470 | 600 | 679 | 578 | 12,500 | 200/D |

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

D : Packing in drum

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

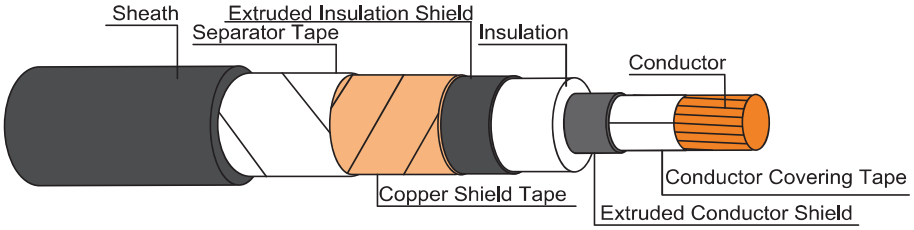
| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 10 | 2.3335 | 0.3685 | 0.1158 | 2.3364 |
| | 16 | 1.4665 | 0.3435 | 0.1079 | 1.4704 |
| | 25 | 0.9272 | 0.3222 | 0.1012 | 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 | 0.2118 |
| | 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 PVC SHEATHED POWER CABLE

IEC 60502-2

TIS 2143-2546




### CABLE STRUCTURE

**Conductor** : Compacted round annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
Single-core : Natural (Translucent)

**Shield** : Copper 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

**Testing voltage** : 12,500 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced
*Insulation shield shall be applied semi-conductive tape

### APPLICATION

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

B

| 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 | Continuous current rating in free air at 40°C maximum | | | Continuous current rating in ground at 30°C maximum | Cable weight approx. | Standard Length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced | Touching | Trefoil | | | |
| | ($mm^2$) | (No.) | (mm) | (mm) | (mm) | (Ω/km) | (MΩ-km) | (A) | (A) | (A) | (A) | (kg/km) | (m) |
| 1 | *10 | 6 | 2.5 | 1.4 | 14.0 | 1.83 | 2,850 | 100 | 83 | 81 | 84 | 260 | 500/D |
| | *16 | 6 | 2.5 | 1.5 | 15.6 | 1.15 | 2,500 | 132 | 109 | 107 | 108 | 350 | 500/D |
| | 25 | 6 | 2.5 | 1.5 | 17.5 | 0.727 | 2,150 | 175 | 145 | 142 | 139 | 480 | 500/D |
| | 35 | 6 | 2.5 | 1.5 | 18.5 | 0.524 | 1,900 | 213 | 177 | 172 | 167 | 600 | 500/D |
| | 50 | 6 | 2.5 | 1.6 | 20 | 0.387 | 1,700 | 256 | 213 | 208 | 197 | 750 | 500/D |
| | 70 | 12 | 2.5 | 1.6 | 21 | 0.268 | 1,500 | 321 | 267 | 259 | 240 | 950 | 500/D |
| | 95 | 15 | 2.5 | 1.7 | 24 | 0.193 | 1,300 | 393 | 327 | 318 | 288 | 1200 | 500/D |
| | 120 | 18 | 2.5 | 1.7 | 25 | 0.153 | 1,200 | 455 | 379 | 368 | 327 | 1500 | 500/D |
| | 150 | 18 | 2.5 | 1.8 | 27 | 0.124 | 1,100 | 518 | 432 | 419 | 366 | 1800 | 500/D |
| | 185 | 30 | 2.5 | 1.8 | 28 | 0.0991 | 1,000 | 597 | 498 | 484 | 414 | 2200 | 500/D |
| | 240 | 34 | 2.6 | 1.9 | 31 | 0.0754 | 900 | 710 | 594 | 575 | 479 | 2800 | 500/D |
| | 300 | 34 | 2.8 | 2.0 | 34 | 0.0601 | 900 | 822 | 688 | 666 | 541 | 3400 | 500/D |
| | 400 | 53 | 3.0 | 2.1 | 37 | 0.0470 | 850 | 960 | 804 | 777 | 614 | 4300 | 500/D |
| | 500 | 53 | 3.2 | 2.2 | 42 | 0.0366 | 800 | 1126 | 943 | 908 | 696 | 5500 | 500/D |
| | 630 | 53 | 3.2 | 2.4 | 46 | 0.0283 | 700 | 1308 | 1094 | 1048 | 782 | 7000 | 500/D |
| | 800 | 53 | 3.2 | 2.5 | 50 | 0.0221 | 600 | 1504 | 1251 | 1191 | 865 | 8500 | 300/D |
| | 1000 | 53 | 3.2 | 2.6 | 55 | 0.0176 | 550 | 1720 | 1422 | 1343 | 944 | 11000 | 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

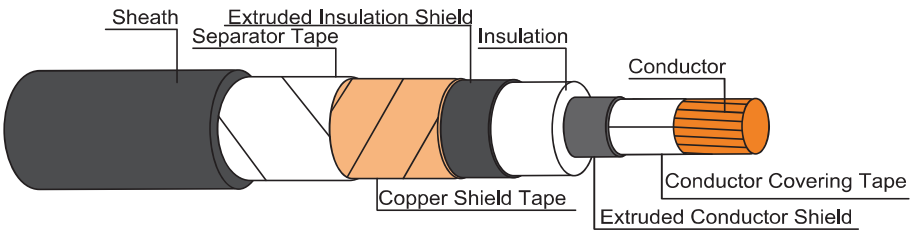
D : Packing in drum

# 3.6/6KV-CV

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

IEC 60502-2

TIS 2143-2546




### CABLE STRUCTURE

**Conductor** : Compacted round annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
Single-core : Natural (Translucent)

**Shield** : Copper 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

**Testing voltage** : 12,500 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

### APPLICATION

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

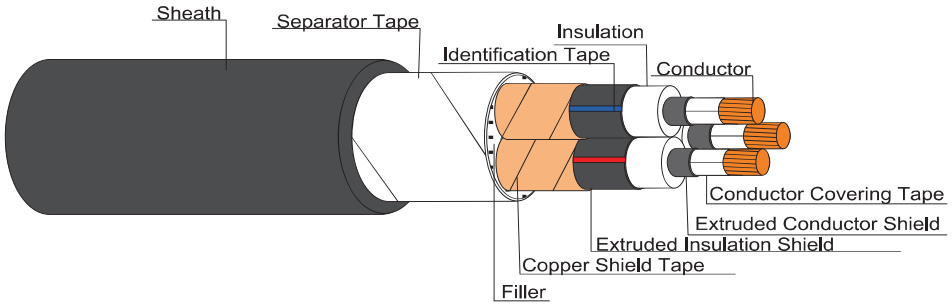
B

| Number of core | Nominal cross sectional area ($mm^2$) | 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 | 2.3381 |
| | 16 | 1.4664 | 1.4664 | 1.4664 | 0.6260 | 0.4873 | 0.4411 | 0.1967 | 0.1531 | 0.1386 | 1.4796 | 1.4744 | 1.4730 |
| | 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 | 0.1172 | 0.5238 | 0.5109 | 0.5074 |
| | 70 | 0.3420 | 0.3421 | 0.3421 | 0.5377 | 0.3990 | 0.3528 | 0.1689 | 0.1254 | 0.1108 | 0.3814 | 0.3643 | 0.3596 |
| | 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 | 0.1957 | 0.1958 | 0.5072 | 0.3686 | 0.3223 | 0.1593 | 0.1158 | 0.1013 | 0.2523 | 0.2274 | 0.2205 |
| | 150 | 0.1587 | 0.1589 | 0.1591 | 0.4992 | 0.3606 | 0.3144 | 0.1568 | 0.1133 | 0.0988 | 0.2231 | 0.1952 | 0.1872 |
| | 185 | 0.1271 | 0.1274 | 0.1276 | 0.4915 | 0.3529 | 0.3067 | 0.1544 | 0.1109 | 0.0963 | 0.2000 | 0.1689 | 0.1599 |
| | 240 | 0.0971 | 0.0975 | 0.0978 | 0.4821 | 0.3435 | 0.2973 | 0.1515 | 0.1079 | 0.0934 | 0.1799 | 0.1454 | 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 | 0.0615 | 0.0622 | 0.0627 | 0.4719 | 0.3332 | 0.2870 | 0.1482 | 0.1047 | 0.0902 | 0.1605 | 0.1217 | 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 | 0.1496 | 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 | 0.0907 |
| | 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 PVC SHEATHED POWER CABLE

IEC 60502-2




### CABLE STRUCTURE

**Conductor** : Compacted round annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
3 Cores : White, Red, Blue

**Shield** : Copper 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

**Testing voltage** : 12,500 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced
: *Insulation shield shall be applied semi-conductive tape

### APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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) | 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 | *10 | 6 | 2.5 | 2.0 | 28 | 1.83 | 2,850 | 81 | 85 | 850 | 500/D |
| | *16 | 6 | 2.5 | 2.0 | 30 | 1.15 | 2,500 | 106 | 108 | 1,100 | 500/D |
| | 25 | 6 | 2.5 | 2.1 | 35 | 0.727 | 2,150 | 139 | 139 | 1,600 | 500/D |
| | 35 | 6 | 2.5 | 2.2 | 38 | 0.524 | 1,900 | 170 | 174 | 1,900 | 500/D |
| | 50 | 6 | 2.5 | 2.3 | 40 | 0.387 | 1,700 | 203 | 195 | 2,400 | 500/D |
| | 70 | 12 | 2.5 | 2.4 | 44 | 0.268 | 1,500 | 252 | 238 | 3,100 | 500/D |
| | 95 | 15 | 2.5 | 2.5 | 48 | 0.193 | 1,300 | 308 | 284 | 4,000 | 500/D |
| | 120 | 18 | 2.5 | 2.6 | 52 | 0.153 | 1,200 | 355 | 322 | 4,900 | 500/D |
| | 150 | 18 | 2.5 | 2.8 | 55 | 0.124 | 1,100 | 402 | 360 | 6,000 | 500/D |
| | 185 | 30 | 2.5 | 2.9 | 59 | 0.0991 | 1,000 | 461 | 406 | 7,000 | 500/D |
| | 240 | 34 | 2.6 | 3.1 | 65 | 0.0754 | 900 | 545 | 470 | 9,000 | 500/D |
| | 300 | 34 | 2.8 | 3.3 | 71 | 0.0601 | 900 | 625 | 529 | 11,000 | 300/D |
| | 400 | 53 | 3.0 | 3.5 | 79 | 0.0470 | 850 | 724 | 598 | 13,500 | 300/D |

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

D : Packing in drum

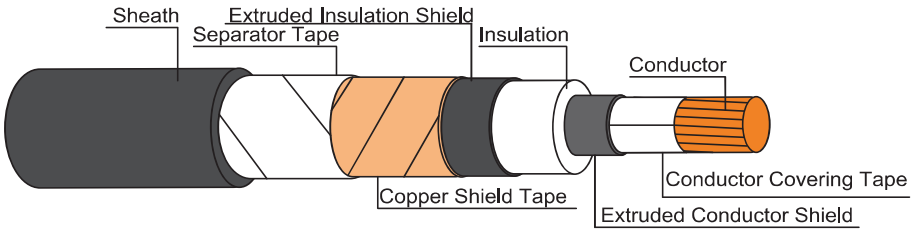
Deep of laying (For cable laid direct in ground) 0.8 m

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 10 | 2.3335 | 0.4117 | 0.1294 | 2.3371 |
| | 16 | 1.4664 | 0.3827 | 0.1202 | 1.4714 |
| | 25 | 0.9271 | 0.3694 | 0.1161 | 0.9344 |
| | 35 | 0.6684 | 0.3539 | 0.1112 | 0.6775 |
| | 50 | 0.4938 | 0.3265 | 0.1026 | 0.5043 |
| | 70 | 0.3422 | 0.3102 | 0.0975 | 0.3558 |
| | 95 | 0.2468 | 0.2962 | 0.0931 | 0.2637 |
| | 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 PVC SHEATHED POWER CABLE

IEC 60502-2




### CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
Single-core : Natural (Translucent)

**Shield** : Copper 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

**Testing voltage** : 21,000 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

### APPLICATION

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

B

| 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 | Continuous current rating in free air at 40°C maximum | | | Continuous current rating in ground at 30°C maximum | Cable weight approx. | Standard Length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced | Touching | Trefoil | | | |
| | ($mm^2$) | (No.) | (mm) | (mm) | (mm) | (Ω/km) | (MΩ-km) | (A) | (A) | (A) | (A) | (kg/km) | (m) |
| 1 | 16 | 6 | 3.4 | 1.5 | 18.5 | 1.15 | 3,100 | 135 | 114 | 112 | 109 | 440 | 500/D |
| | 25 | 6 | 3.4 | 1.6 | 20 | 0.727 | 2,700 | 177 | 150 | 146 | 140 | 550 | 500/D |
| | 35 | 6 | 3.4 | 1.6 | 21 | 0.524 | 2,450 | 216 | 182 | 177 | 167 | 700 | 500/D |
| | 50 | 6 | 3.4 | 1.7 | 22 | 0.387 | 2,200 | 260 | 219 | 213 | 197 | 850 | 500/D |
| | 70 | 12 | 3.4 | 1.7 | 24 | 0.268 | 1,900 | 324 | 273 | 265 | 241 | 1100 | 500/D |
| | 95 | 15 | 3.4 | 1.8 | 26 | 0.193 | 1,700 | 397 | 334 | 325 | 289 | 1300 | 500/D |
| | 120 | 18 | 3.4 | 1.8 | 27 | 0.153 | 1,550 | 459 | 386 | 375 | 328 | 1600 | 500/D |
| | 150 | 18 | 3.4 | 1.9 | 29 | 0.124 | 1,450 | 521 | 439 | 426 | 367 | 1900 | 500/D |
| | 185 | 30 | 3.4 | 1.9 | 31 | 0.0991 | 1,300 | 601 | 506 | 492 | 415 | 2300 | 500/D |
| | 240 | 34 | 3.4 | 2.0 | 33 | 0.0754 | 1,150 | 713 | 601 | 583 | 481 | 2900 | 500/D |
| | 300 | 34 | 3.4 | 2.1 | 36 | 0.0601 | 1,050 | 820 | 692 | 670 | 542 | 3500 | 500/D |
| | 400 | 53 | 3.4 | 2.2 | 39 | 0.0470 | 950 | 954 | 804 | 777 | 614 | 4400 | 500/D |
| | 500 | 53 | 3.4 | 2.3 | 42 | 0.0366 | 850 | 1116 | 939 | 905 | 695 | 5500 | 500/D |
| | 630 | 53 | 3.4 | 2.4 | 46 | 0.0283 | 750 | 1299 | 1090 | 1045 | 781 | 7000 | 500/D |
| | 800 | 53 | 3.4 | 2.5 | 50 | 0.0221 | 650 | 1494 | 1247 | 1188 | 865 | 8500 | 500/D |
| | 1000 | 53 | 3.4 | 2.6 | 56 | 0.0176 | 600 | 1708 | 1417 | 1340 | 945 | 11000 | 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

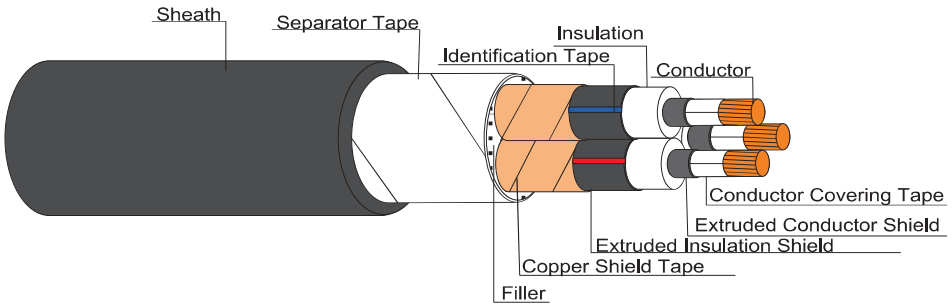
D : Packing in drum

| Number of core | Nominal cross sectional area | 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 |
| | ($mm^2$) | | | | | | | | | | | | |
| 1 | 16 | 1.4664 | 1.4664 | 1.4664 | 0.6597 | 0.5210 | 0.4748 | 0.6597 | 0.1637 | 0.1492 | 1.4810 | 1.4755 | 1.4740 |
| | 25 | 0.9271 | 0.9271 | 0.9271 | 0.6295 | 0.4908 | 0.4446 | 0.6295 | 0.1542 | 0.1397 | 0.9479 | 0.9398 | 0.9376 |
| | 35 | 0.6683 | 0.6683 | 0.6683 | 0.6093 | 0.4707 | 0.4244 | 0.6093 | 0.1479 | 0.1333 | 0.6952 | 0.6845 | 0.6815 |
| | 50 | 0.4936 | 0.4937 | 0.4937 | 0.5792 | 0.4406 | 0.3944 | 0.5792 | 0.1384 | 0.1239 | 0.5261 | 0.5127 | 0.5090 |
| | 70 | 0.3420 | 0.3420 | 0.3421 | 0.5576 | 0.4190 | 0.3728 | 0.5576 | 0.1316 | 0.1171 | 0.3842 | 0.3665 | 0.3616 |
| | 95 | 0.2465 | 0.2465 | 0.2466 | 0.5401 | 0.4015 | 0.3553 | 0.5401 | 0.1261 | 0.1116 | 0.2992 | 0.2769 | 0.2707 |
| | 120 | 0.1956 | 0.1957 | 0.1958 | 0.5245 | 0.3859 | 0.3397 | 0.5245 | 0.1212 | 0.1067 | 0.2557 | 0.2302 | 0.2230 |
| | 150 | 0.1587 | 0.1589 | 0.1590 | 0.5156 | 0.3770 | 0.3307 | 0.5156 | 0.1184 | 0.1039 | 0.2268 | 0.1981 | 0.1899 |
| | 185 | 0.1271 | 0.1273 | 0.1275 | 0.5068 | 0.3681 | 0.3219 | 0.5068 | 0.1157 | 0.1011 | 0.2037 | 0.1720 | 0.1627 |
| | 240 | 0.0971 | 0.0974 | 0.0977 | 0.4955 | 0.3569 | 0.3107 | 0.4955 | 0.1121 | 0.0976 | 0.1835 | 0.1485 | 0.1381 |
| | 300 | 0.0778 | 0.0783 | 0.0787 | 0.4868 | 0.3482 | 0.3020 | 0.4868 | 0.1094 | 0.0949 | 0.1716 | 0.1345 | 0.1232 |
| | 400 | 0.0615 | 0.0621 | 0.0626 | 0.4781 | 0.3394 | 0.2932 | 0.4781 | 0.1066 | 0.0921 | 0.1623 | 0.1234 | 0.1114 |
| | 500 | 0.0486 | 0.0495 | 0.0501 | 0.4709 | 0.3323 | 0.2861 | 0.4709 | 0.1044 | 0.0899 | 0.1557 | 0.1155 | 0.1029 |
| | 630 | 0.0386 | 0.0397 | 0.0406 | 0.4625 | 0.3239 | 0.2776 | 0.4625 | 0.1017 | 0.0872 | 0.1503 | 0.1092 | 0.0962 |
| | 800 | 0.0313 | 0.0327 | 0.0338 | 0.4552 | 0.3166 | 0.2703 | 0.4552 | 0.0994 | 0.0849 | 0.1464 | 0.1047 | 0.0914 |
| | 1000 | 0.0262 | 0.0279 | 0.0292 | 0.4466 | 0.3080 | 0.2618 | 0.4466 | 0.0968 | 0.0822 | 0.1427 | 0.1007 | 0.0873 |

# 6/10KV-CV

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

IEC 60502-2




## CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
3 Cores : White, Red, Blue

**Shield** : Copper 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

**Testing voltage** : 21,000 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

## APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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) | 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 | 16 | 6 | 3.4 | 2.0 | 30 | 1.15 | 2,500 | 109 | 108 | 1100 | 500/D |
| | 25 | 6 | 3.4 | 2.1 | 35 | 0.727 | 2,150 | 142 | 139 | 1600 | 500/D |
| | 35 | 6 | 3.4 | 2.2 | 38 | 0.524 | 1,900 | 173 | 166 | 1900 | 500/D |
| | 50 | 6 | 3.4 | 2.3 | 40 | 0.387 | 1,700 | 207 | 196 | 2400 | 500/D |
| | 70 | 12 | 3.4 | 2.4 | 44 | 0.268 | 1,500 | 257 | 239 | 3100 | 500/D |
| | 95 | 15 | 3.4 | 2.5 | 48 | 0.193 | 1,300 | 313 | 285 | 4000 | 500/D |
| | 120 | 18 | 3.4 | 2.6 | 52 | 0.153 | 1,200 | 360 | 323 | 49000 | 500/D |
| | 150 | 18 | 3.4 | 2.8 | 55 | 0.124 | 1,100 | 407 | 361 | 6000 | 500/D |
| | 185 | 30 | 3.4 | 2.9 | 59 | 0.0991 | 1,000 | 467 | 408 | 7000 | 500/D |
| | 240 | 34 | 3.4 | 3.1 | 65 | 0.0754 | 900 | 549 | 471 | 9000 | 500/D |
| | 300 | 34 | 3.4 | 3.3 | 71 | 0.0601 | 900 | 628 | 529 | 11000 | 300/D |
| | 400 | 53 | 3.4 | 3.5 | 79 | 0.0470 | 800 | 721 | 597 | 13500 | 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

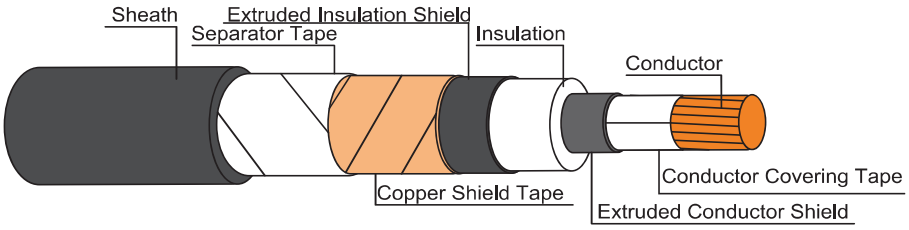
D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 16 | 1.4664 | 0.4267 | 0.1340 | 1.4726 |
| | 25 | 0.9271 | 0.3977 | 0.1250 | 0.9355 |
| | 35 | 0.6683 | 0.3803 | 0.1195 | 0.6789 |
| | 50 | 0.4937 | 0.3511 | 0.1103 | 0.5059 |
| | 70 | 0.3421 | 0.3327 | 0.1045 | 0.3577 |
| | 95 | 0.2467 | 0.3167 | 0.0995 | 0.2660 |
| | 120 | 0.1959 | 0.3034 | 0.0953 | 0.2179 |
| | 150 | 0.1592 | 0.2950 | 0.0927 | 0.1842 |
| | 185 | 0.1277 | 0.2886 | 0.0907 | 0.1566 |
| | 240 | 0.0980 | 0.2782 | 0.0874 | 0.1313 |
| | 300 | 0.0790 | 0.2705 | 0.0850 | 0.1160 |
| | 400 | 0.0631 | 0.2630 | 0.0826 | 0.1039 |

# 8.7/15KV-CV

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

IEC 60502-2




### CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
Single-core : Natural (Translucent)

**Shield** : Copper 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

Testing voltage : 30,500 Volts

Reference standard : IEC 60502-2, IEC 60228, IEC 60332-1

Remark : Special protection can be produced

B

### 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 | Continuous current rating in free air at 40°C maximum | | | Continuous current rating in ground at 30°C maximum | Cable weight approx. | Standard Length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced | Touching | Trefoil | | | |
| | ($mm^2$) | (No.) | (mm) | (mm) | (mm) | (Ω/km) | (MΩ-km) | (A) | (A) | (A) | (A) | (kg/km) | (m) |
| | 25 | 6 | 4.5 | 1.6 | 22 | 0.727 | 3,300 | 177 | 151 | 148 | 140 | 650 | 500/D |
| | 35 | 6 | 4.5 | 1.7 | 23 | 0.524 | 3,000 | 215 | 184 | 179 | 167 | 750 | 500/D |
| | 50 | 6 | 4.5 | 1.7 | 25 | 0.387 | 2,700 | 258 | 220 | 215 | 197 | 900 | 500/D |
| | 70 | 12 | 4.5 | 1.8 | 26 | 0.268 | 2,400 | 322 | 275 | 268 | 240 | 1,200 | 500/D |
| | 95 | 15 | 4.5 | 1.8 | 28 | 0.193 | 2,100 | 394 | 336 | 327 | 288 | 1,400 | 500/D |
| | 120 | 18 | 4.5 | 1.9 | 30 | 0.153 | 1,950 | 454 | 388 | 377 | 327 | 1,700 | 500/D |
| | 150 | 18 | 4.5 | 1.9 | 31 | 0.124 | 1,800 | 517 | 441 | 429 | 367 | 2,000 | 500/D |
| 1 | 185 | 30 | 4.5 | 2.0 | 33 | 0.0991 | 1,650 | 595 | 508 | 494 | 414 | 2,400 | 500/D |
| | 240 | 34 | 4.5 | 2.1 | 36 | 0.0754 | 1,500 | 705 | 602 | 584 | 480 | 3,000 | 500/D |
| | 300 | 34 | 4.5 | 2.1 | 38 | 0.0601 | 1,350 | 805 | 688 | 667 | 539 | 3,700 | 500/D |
| | 400 | 53 | 4.5 | 2.2 | 41 | 0.0470 | 1,200 | 935 | 798 | 773 | 611 | 4,500 | 500/D |
| | 500 | 53 | 4.5 | 2.3 | 45 | 0.0366 | 1,100 | 1093 | 932 | 900 | 693 | 5,500 | 500/D |
| | 630 | 53 | 4.5 | 2.4 | 48 | 0.0283 | 950 | 1272 | 1081 | 1039 | 780 | 7,000 | 500/D |
| | 800 | 53 | 4.5 | 2.6 | 53 | 0.0221 | 850 | 1460 | 1235 | 1181 | 864 | 8,500 | 500/D |
| | 1000 | 53 | 4.5 | 2.7 | 58 | 0.0176 | 750 | 1669 | 1403 | 1331 | 945 | 11,500 | 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

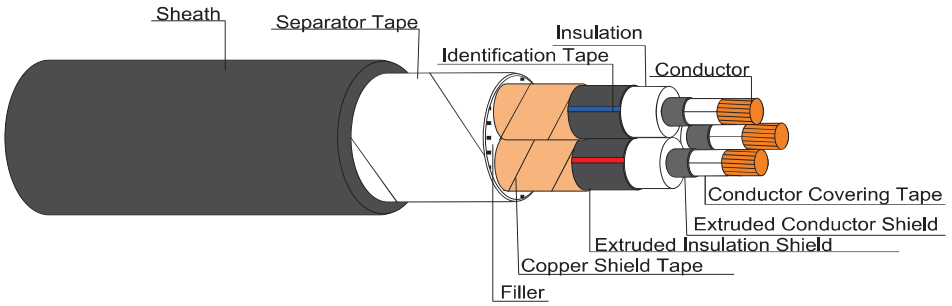
D : Packing in drum

| Number of core | Nominal cross sectional area | 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 |
| | ($mm^2$) | | | | | | | | | | | | |
| | 25 | 0.9271 | 0.9271 | 0.9271 | 0.6511 | 0.5125 | 0.4663 | 0.2046 | 0.1610 | 0.1465 | 0.9494 | 0.9410 | 0.9386 |
| | 35 | 0.6683 | 0.6683 | 0.6683 | 0.6316 | 0.4930 | 0.4467 | 0.1984 | 0.1549 | 0.1403 | 0.6971 | 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 | 0.3420 | 0.3421 | 0.5773 | 0.4387 | 0.3925 | 0.1814 | 0.1378 | 0.1233 | 0.3871 | 0.3687 | 0.3636 |
| | 95 | 0.2465 | 0.2465 | 0.2466 | 0.5569 | 0.4183 | 0.3721 | 0.1750 | 0.1314 | 0.1169 | 0.3022 | 0.2794 | 0.2729 |
| | 120 | 0.1955 | 0.1957 | 0.1957 | 0.5418 | 0.4032 | 0.3570 | 0.1702 | 0.1267 | 0.1121 | 0.2593 | 0.2331 | 0.2256 |
| | 150 | 0.1587 | 0.1588 | 0.1589 | 0.5307 | 0.3921 | 0.3459 | 0.1667 | 0.1232 | 0.1087 | 0.2302 | 0.2010 | 0.1925 |
| 1 | 185 | 0.1271 | 0.1273 | 0.1274 | 0.5227 | 0.3841 | 0.3379 | 0.1642 | 0.1207 | 0.1061 | 0.2076 | 0.1754 | 0.1659 |
| | 240 | 0.0971 | 0.0974 | 0.0976 | 0.5097 | 0.3711 | 0.3249 | 0.1601 | 0.1166 | 0.1021 | 0.1873 | 0.1519 | 0.1412 |
| | 300 | 0.0778 | 0.0782 | 0.0785 | 0.4991 | 0.3604 | 0.3142 | 0.1568 | 0.1132 | 0.0987 | 0.1750 | 0.1376 | 0.1261 |
| | 400 | 0.0615 | 0.0620 | 0.0624 | 0.4895 | 0.3508 | 0.3046 | 0.1538 | 0.1102 | 0.0957 | 0.1656 | 0.1265 | 0.1143 |
| | 500 | 0.0486 | 0.0494 | 0.0500 | 0.4814 | 0.3427 | 0.2965 | 0.1512 | 0.1077 | 0.0932 | 0.1588 | 0.1184 | 0.1057 |
| | 630 | 0.0386 | 0.0396 | 0.0404 | 0.4721 | 0.3335 | 0.2872 | 0.1483 | 0.1048 | 0.0902 | 0.1532 | 0.1120 | 0.0989 |
| | 800 | 0.0313 | 0.0325 | 0.0335 | 0.4648 | 0.3262 | 0.2799 | 0.1460 | 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 | 0.0850 | 0.1454 | 0.1033 | 0.0898 |

# 8.7/15KV-CV

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

IEC 60502-2




### CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
3 Cores : White, Red, Blue

**Shield** : Copper 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

**Testing voltage** : 30,500 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

### APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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) | 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 | 25 | 6 | 4.5 | 2.4 | 45 | 0.727 | 3,300 | 142 | 137 | 2,200 | 500/D |
| | 35 | 6 | 4.5 | 2.5 | 48 | 0.524 | 3,000 | 173 | 165 | 2,600 | 500/D |
| | 50 | 6 | 4.5 | 2.6 | 51 | 0.387 | 2,700 | 208 | 195 | 3,100 | 500/D |
| | 70 | 12 | 4.5 | 2.7 | 54 | 0.268 | 2,400 | 258 | 238 | 3,900 | 500/D |
| | 95 | 15 | 4.5 | 2.8 | 58 | 0.193 | 2,100 | 314 | 284 | 4,800 | 500/D |
| | 120 | 18 | 4.5 | 2.9 | 62 | 0.153 | 1,950 | 362 | 323 | 5,500 | 500/D |
| | 150 | 18 | 4.5 | 3.1 | 66 | 0.124 | 1,800 | 409 | 361 | 6,500 | 500/D |
| | 185 | 30 | 4.5 | 3.2 | 69 | 0.0991 | 1,650 | 468 | 407 | 8,000 | 500/D |
| | 240 | 34 | 4.5 | 3.4 | 75 | 0.0754 | 1,500 | 551 | 470 | 10,000 | 300/D |
| | 300 | 34 | 4.5 | 3.5 | 80 | 0.0601 | 1,350 | 629 | 529 | 12,000 | 300/D |
| | 400 | 53 | 4.5 | 3.7 | 86 | 0.0470 | 1,200 | 722 | 598 | 15,000 | 300/D |

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

D : Packing in drum

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

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 25 | 0.9271 | 0.4248 | 0.1334 | 0.9367 |
| | 35 | 0.6683 | 0.4057 | 0.1274 | 0.6804 |
| | 50 | 0.4937 | 0.3749 | 0.1178 | 0.5076 |
| | 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 | 0.2205 |
| | 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 |

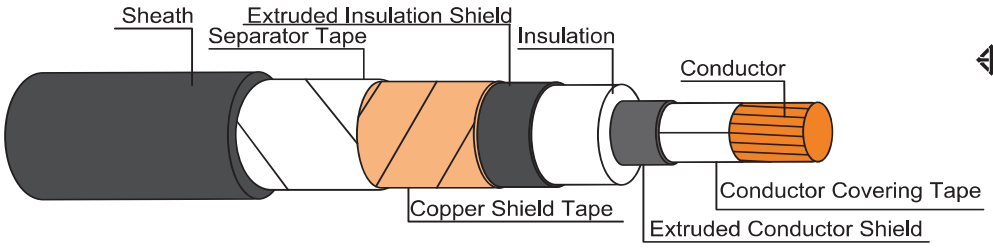
B

# 12/20KV-CV

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

IEC 60502-2

TIS 2143-2546




### CABLE STRUCTURE

**Conductor** : Compacted round annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
Single-core : Natural (Translucent)

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC/ST2)

### TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 24,000 Volts

**Rated voltage** : 12,000 Volts between Line to Earth
: 20,000 Volts between Line to Line

**Testing voltage** : 42,000 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

B

### 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 | Continuous current rating in free air at 40°C maximum | | | Continuous current rating in ground at 30°C maximum | Cable weight approx. | Standard Length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced | Touching | Trefoil | | | |
| | ($mm^2$) | (No.) | (mm) | (mm) | (mm) | (Ω/km) | (MΩ-km) | (A) | (A) | (A) | (A) | (kg/km) | (m) |
| 1 | 35 | 6 | 5.5 | 1.8 | 26 | 0.524 | 3,460 | 210 | 183 | 179 | 165 | 850 | 500/D |
| | 50 | 6 | 5.5 | 1.8 | 27 | 0.387 | 3,130 | 253 | 219 | 214 | 195 | 1,000 | 500/D |
| | 70 | 12 | 5.5 | 1.8 | 28 | 0.268 | 2,790 | 315 | 273 | 266 | 238 | 1,300 | 500/D |
| | 95 | 15 | 5.5 | 1.9 | 30 | 0.193 | 2,500 | 385 | 333 | 325 | 285 | 1,600 | 500/D |
| | 120 | 18 | 5.5 | 2.0 | 32 | 0.153 | 2,290 | 445 | 385 | 375 | 324 | 1,900 | 500/D |
| | 150 | 18 | 5.5 | 2.0 | 34 | 0.124 | 2,130 | 506 | 438 | 426 | 364 | 2,200 | 500/D |
| | 185 | 30 | 5.5 | 2.1 | 35 | 0.0991 | 1,970 | 581 | 503 | 490 | 411 | 2,600 | 500/D |
| | 240 | 34 | 5.5 | 2.1 | 38 | 0.0754 | 1,770 | 689 | 595 | 579 | 477 | 3,200 | 500/D |
| | 300 | 34 | 5.5 | 2.2 | 40 | 0.0601 | 1,620 | 792 | 684 | 665 | 538 | 3,800 | 500/D |
| | 400 | 53 | 5.5 | 2.3 | 43 | 0.0470 | 1,480 | 920 | 794 | 770 | 610 | 4,700 | 500/D |
| | 500 | 53 | 5.5 | 2.4 | 47 | 0.0366 | 1,320 | 1066 | 920 | 890 | 689 | 6,000 | 500/D |
| | 630 | 53 | 5.5 | 2.5 | 51 | 0.0283 | 1,190 | 1241 | 1067 | 1028 | 777 | 7,500 | 500/D |
| | 800 | 53 | 5.5 | 2.6 | 55 | 0.0221 | 1,070 | 1426 | 1221 | 1169 | 863 | 9,000 | 500/D |
| | 1000 | 53 | 5.5 | 2.8 | 60 | 0.0176 | 940 | 1628 | 1385 | 1318 | 945 | 11,500 | 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

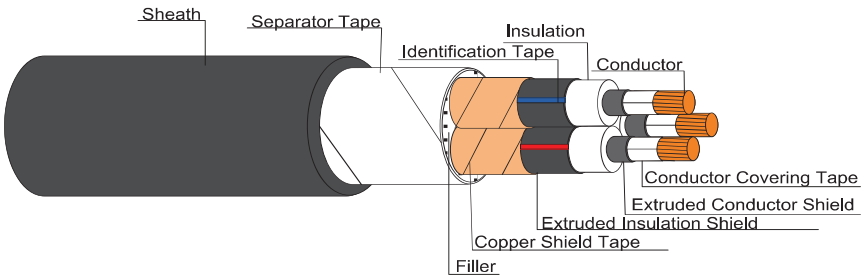
D : Packing in drum

| Number of core | Nominal cross sectional area | 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 |
| | ($mm^2$) | | | | | | | | | | | | |
| 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 | 0.5302 | 0.5159 | 0.5119 |
| | 70 | 0.3420 | 0.3420 | 0.3420 | 0.5918 | 0.4531 | 0.4069 | 0.1859 | 0.1424 | 0.1278 | 0.3892 | 0.3705 | 0.3652 |
| | 95 | 0.2464 | 0.2465 | 0.2466 | 0.5718 | 0.4332 | 0.3870 | 0.1796 | 0.1361 | 0.1216 | 0.3050 | 0.2816 | 0.2749 |
| | 120 | 0.1955 | 0.1956 | 0.1957 | 0.5565 | 0.4179 | 0.3716 | 0.1748 | 0.1313 | 0.1168 | 0.2623 | 0.2356 | 0.2279 |
| | 150 | 0.1587 | 0.1588 | 0.1589 | 0.5448 | 0.4061 | 0.3599 | 0.1711 | 0.1276 | 0.1131 | 0.2334 | 0.2037 | 0.1950 |
| | 185 | 0.1271 | 0.1272 | 0.1274 | 0.5353 | 0.3967 | 0.3505 | 0.1682 | 0.1246 | 0.1101 | 0.2108 | 0.1781 | 0.1684 |
| | 240 | 0.0971 | 0.0973 | 0.0975 | 0.5204 | 0.3818 | 0.3355 | 0.1635 | 0.1199 | 0.1054 | 0.1901 | 0.1545 | 0.1436 |
| | 300 | 0.0778 | 0.0782 | 0.0785 | 0.5101 | 0.3715 | 0.3253 | 0.1603 | 0.1167 | 0.1022 | 0.1781 | 0.1405 | 0.1288 |
| | 400 | 0.0614 | 0.0619 | 0.0623 | 0.4998 | 0.3612 | 0.3150 | 0.1570 | 0.1135 | 0.0989 | 0.1686 | 0.1293 | 0.1169 |
| | 500 | 0.0486 | 0.0493 | 0.0498 | 0.4908 | 0.3522 | 0.3060 | 0.1542 | 0.1107 | 0.0961 | 0.1617 | 0.1211 | 0.1083 |
| | 630 | 0.0386 | 0.0395 | 0.0402 | 0.4809 | 0.3422 | 0.2960 | 0.1511 | 0.1075 | 0.0930 | 0.1559 | 0.1145 | 0.1013 |
| | 800 | 0.0313 | 0.0324 | 0.0333 | 0.4722 | 0.3335 | 0.2873 | 0.1483 | 0.1048 | 0.0903 | 0.1516 | 0.1097 | 0.0962 |
| | 1000 | 0.0261 | 0.0276 | 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 PVC SHEATHED POWER CABLE

IEC 60502-2




## CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
3 Cores : White, Red, Blue

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC/ST2)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 24,000 Volts

**Rated voltage** : 12,000 Volts between Line to Earth
: 20,000 Volts between Line to Line

**Testing voltage** : 42,000 Volts

**Reference standard** : IEC 60502-2, IEC 60228, IEC 60332-1

**Remark** : Special protection can be produced

## APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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) | 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 | 35 | 6 | 5.5 | 2.7 | 53 | 0.524 | 3,460 | 169 | 161 | 3,000 | 500/D |
| | 50 | 6 | 5.5 | 2.8 | 55 | 0.387 | 3,130 | 204 | 191 | 3,500 | 500/D |
| | 70 | 12 | 5.5 | 2.9 | 59 | 0.268 | 2,790 | 254 | 234 | 4,300 | 500/D |
| | 95 | 15 | 5.5 | 3.0 | 63 | 0.193 | 2,500 | 311 | 281 | 5,000 | 500/D |
| | 120 | 18 | 5.5 | 3.1 | 67 | 0.153 | 2,290 | 358 | 319 | 6,000 | 500/D |
| | 150 | 18 | 5.5 | 3.2 | 70 | 0.124 | 2,130 | 405 | 358 | 7,000 | 300/D |
| | 185 | 30 | 5.5 | 3.3 | 74 | 0.0991 | 1,970 | 463 | 404 | 8,500 | 300/D |
| | 240 | 34 | 5.5 | 3.5 | 80 | 0.0754 | 1,770 | 546 | 468 | 10,500 | 300/D |
| | 300 | 34 | 5.5 | 3.7 | 85 | 0.0601 | 1,620 | 622 | 526 | 12,500 | 300/D |
| | 400 | 53 | 5.5 | 3.9 | 91 | 0.0470 | 1,480 | 715 | 595 | 15,000 | 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

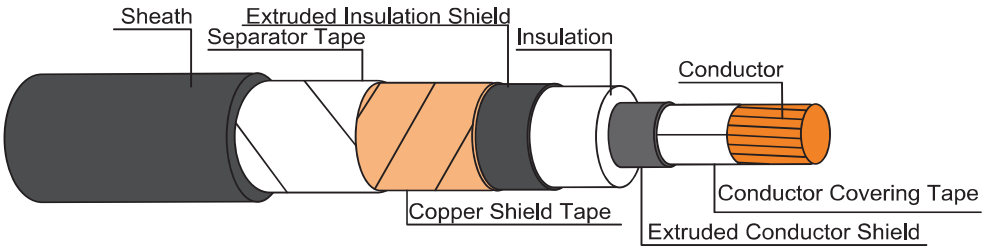
D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 35 | 0.6683 | 0.4254 | 0.1336 | 0.6815 |
| | 50 | 0.4937 | 0.3935 | 0.1236 | 0.5089 |
| | 70 | 0.3421 | 0.3720 | 0.1169 | 0.3615 |
| | 95 | 0.2466 | 0.3530 | 0.1109 | 0.2704 |
| | 120 | 0.1958 | 0.3375 | 0.1060 | 0.2227 |
| | 150 | 0.1590 | 0.3273 | 0.1028 | 0.1894 |
| | 185 | 0.1275 | 0.3187 | 0.1001 | 0.1621 |
| | 240 | 0.0977 | 0.3059 | 0.0961 | 0.1371 |
| | 300 | 0.0787 | 0.2964 | 0.0931 | 0.1219 |
| | 400 | 0.0627 | 0.2870 | 0.0902 | 0.1098 |

# 18/30KV-CV

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

IEC 60502-2




### CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
Single-core : Natural (Translucent)

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC/ST2)

### TECHNICAL DATA

Classification : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 36,000 Volts

Rated voltage : 18,000 Volts between Line to Earth
: 30,000 Volts between Line to Line

Testing voltage : 63,000 Volts

Reference standard : IEC 60502-2, IEC 60228, IEC 60332-1

Remark : Special protection can be produced

### APPLICATION

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

B

| 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 | Continuous current rating in free air at 40°C maximum | | | Continuous current rating in ground at 30°C maximum | Cable weight approx. | Standard Length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced | Touching | Trefoil | | | |
| | ($mm^2$) | (No.) | (mm) | (mm) | (mm) | (Ω/km) | (MΩ-km) | (A) | (A) | (A) | (A) | (kg/km) | (m) |
| 1 | 35 | 6 | 8.9 | 2.0 | 33 | 0.524 | 4,680 | 213 | 190 | 186 | 166 | 1,200 | 500/D |
| | 50 | 6 | 8.0 | 2.0 | 32 | 0.387 | 4,010 | 256 | 226 | 221 | 196 | 1,300 | 500/D |
| | 70 | 12 | 8.0 | 2.0 | 34 | 0.267 | 3,620 | 319 | 281 | 275 | 240 | 1,500 | 500/D |
| | 95 | 15 | 8.0 | 2.1 | 36 | 0.193 | 3,260 | 390 | 343 | 335 | 287 | 1,900 | 500/D |
| | 120 | 18 | 8.0 | 2.1 | 37 | 0.153 | 3,020 | 450 | 395 | 385 | 327 | 2,200 | 500/D |
| | 150 | 18 | 8.0 | 2.2 | 39 | 0.124 | 2,820 | 510 | 448 | 437 | 366 | 2,500 | 500/D |
| | 185 | 30 | 8.0 | 2.2 | 41 | 0.0991 | 2,620 | 586 | 514 | 501 | 414 | 2,900 | 500/D |
| | 240 | 34 | 8.0 | 2.3 | 43 | 0.0754 | 2,370 | 693 | 607 | 591 | 480 | 3,500 | 500/D |
| | 300 | 34 | 8.0 | 2.4 | 46 | 0.0601 | 2,190 | 796 | 696 | 678 | 541 | 4,200 | 500/D |
| | 400 | 53 | 8.0 | 2.5 | 48 | 0.0470 | 2,000 | 923 | 807 | 784 | 615 | 5,000 | 500/D |
| | 500 | 53 | 8.0 | 2.6 | 52 | 0.0366 | 1,800 | 1076 | 939 | 910 | 698 | 6,500 | 500/D |
| | 630 | 53 | 8.0 | 2.7 | 56 | 0.0283 | 1,630 | 1251 | 1088 | 1051 | 788 | 7,500 | 500/D |
| | 800 | 53 | 8.0 | 2.8 | 60 | 0.0221 | 1,480 | 1437 | 1243 | 1195 | 877 | 9,500 | 300/D |
| | 1000 | 53 | 8.0 | 3 | 66 | 0.0176 | 1,300 | 1640 | 1411 | 1348 | 962 | 12,000 | 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

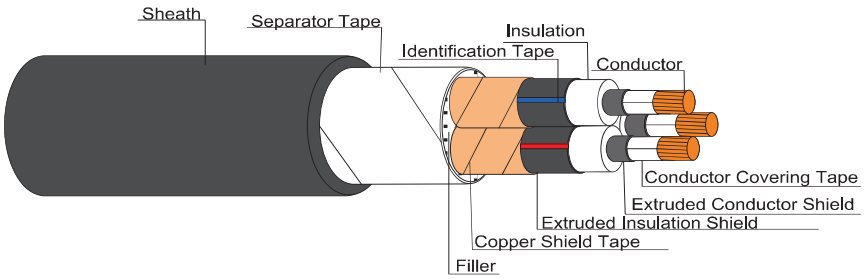
D : Packing in drum

| Number of core | Nominal cross sectional area | 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 |
| | ($mm^2$) | | | | | | | | | | | | |
| 1 | 35 | 0.6683 | 0.6683 | 0.6683 | 0.6990 | 0.5604 | 0.5142 | 0.2196 | 0.1760 | 0.1615 | 0.7034 | 0.6911 | 0.6875 |
| | 50 | 0.4936 | 0.4936 | 0.4937 | 0.6525 | 0.5139 | 0.4676 | 0.2050 | 0.1614 | 0.1469 | 0.5345 | 0.5194 | 0.5151 |
| | 70 | 0.3420 | 0.3420 | 0.3420 | 0.6268 | 0.4882 | 0.4420 | 0.1969 | 0.1534 | 0.1388 | 0.3946 | 0.3748 | 0.3691 |
| | 95 | 0.2464 | 0.2465 | 0.2465 | 0.6048 | 0.4661 | 0.4199 | 0.1900 | 0.1464 | 0.1319 | 0.3112 | 0.2867 | 0.2796 |
| | 120 | 0.1955 | 0.1956 | 0.1957 | 0.5862 | 0.4475 | 0.4013 | 0.1842 | 0.1406 | 0.1261 | 0.2686 | 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 | 0.2096 | 0.2005 |
| | 185 | 0.1271 | 0.1272 | 0.1273 | 0.5622 | 0.4236 | 0.3774 | 0.1766 | 0.1331 | 0.1186 | 0.2176 | 0.1841 | 0.1739 |
| | 240 | 0.0971 | 0.0973 | 0.0974 | 0.5466 | 0.4080 | 0.3618 | 0.1717 | 0.1282 | 0.1137 | 0.1973 | 0.1609 | 0.1497 |
| | 300 | 0.0778 | 0.0781 | 0.0783 | 0.5349 | 0.3963 | 0.3501 | 0.1680 | 0.1245 | 0.1100 | 0.1852 | 0.1469 | 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 | 0.0486 | 0.0491 | 0.0495 | 0.5124 | 0.3738 | 0.3275 | 0.1610 | 0.1174 | 0.1029 | 0.1681 | 0.1273 | 0.1142 |
| | 630 | 0.0385 | 0.0392 | 0.0398 | 0.5009 | 0.3622 | 0.3160 | 0.1574 | 0.1138 | 0.0993 | 0.1620 | 0.1204 | 0.1070 |
| | 800 | 0.0312 | 0.0321 | 0.0329 | 0.4908 | 0.3522 | 0.3059 | 0.1542 | 0.1106 | 0.0961 | 0.1573 | 0.1152 | 0.1016 |
| | 1000 | 0.0261 | 0.0272 | 0.0282 | 0.4802 | 0.3415 | 0.2953 | 0.1508 | 0.1073 | 0.0928 | 0.1531 | 0.1107 | 0.0970 |

# 18/30KV-CV

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

IEC 60502-2




### CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Conductor shield** : Semi-conductive Cross-linked polyethylene compound

**Insulation** : Cross-Linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive Cross-linked polyethylene compound

**Core identification**
3 Cores : White, Red, Blue

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC/ST2)

### TECHNICAL DATA

Classification : Maximum conductor temperature 90°C
: Circuit voltage not exceeding 36,000 Volts

Rated voltage : 18,000 Volts between Line to Earth
: 30,000 Volts between Line to Line

Testing voltage : 63,000 Volts

Reference standard : IEC 60502-2, IEC 60228, IEC 60332-1

Remark : Special protection can be produced

### APPLICATION

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

| Number of cores | Nominal cross sectional area ($mm^2$) | 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) | 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 | 35 | 6 | 8.9 | 3.1 | 68 | 0.524 | 4,680 | 141 | 139 | 4,300 | 500/D |
| | 50 | 6 | 8.0 | 3.2 | 67 | 0.387 | 4,010 | 205 | 190 | 4,500 | 500/D |
| | 70 | 12 | 8.0 | 3.3 | 71 | 0.267 | 3,620 | 262 | 236 | 5,500 | 300/D |
| | 95 | 15 | 8.0 | 3.4 | 75 | 0.193 | 3,260 | 320 | 284 | 6,500 | 300/D |
| | 120 | 18 | 8.0 | 3.5 | 79 | 0.153 | 3,020 | 368 | 323 | 7,500 | 300/D |
| | 150 | 18 | 8.0 | 3.6 | 82 | 0.124 | 2,820 | 417 | 362 | 8,500 | 300/D |
| | 185 | 30 | 8.0 | 3.7 | 86 | 0.0991 | 2,620 | 477 | 409 | 10,000 | 300/D |
| | 240 | 34 | 8.0 | 3.9 | 91 | 0.0754 | 2,370 | 561 | 473 | 12,000 | 300/D |
| | 300 | 34 | 8.0 | 4.0 | 97 | 0.0601 | 2,190 | 640 | 533 | 14,000 | 300/D |
| | 400 | 53 | 8.0 | 4.3 | 103 | 0.0470 | 2,000 | 734 | 603 | 17,000 | 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

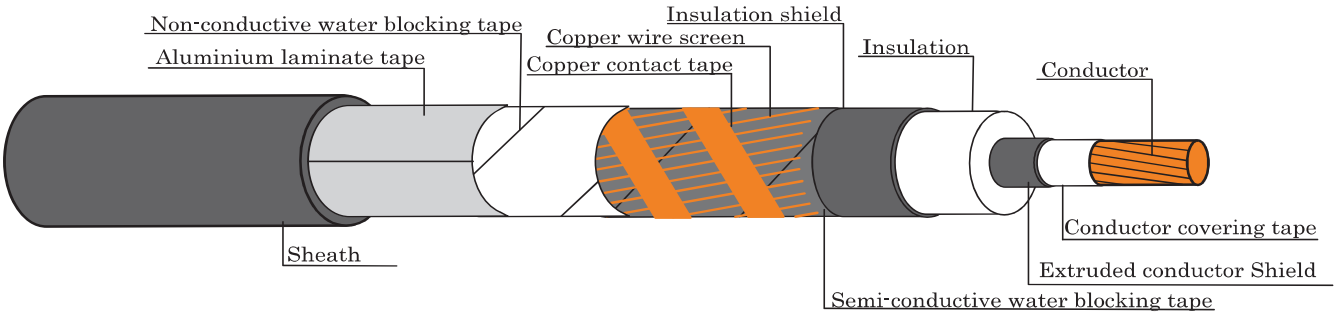
D : Packing in drum

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 3 | 35 | 0.6683 | 0.4808 | 0.1510 | 0.6852 |
| | 50 | 0.4937 | 0.4336 | 0.1362 | 0.5121 |
| | 70 | 0.3420 | 0.4097 | 0.1287 | 0.3655 |
| | 95 | 0.2466 | 0.3883 | 0.1220 | 0.2751 |
| | 120 | 0.1957 | 0.3710 | 0.1166 | 0.2278 |
| | 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

## 69 kV 90°C CROSS-LINKED POLYETHYLENE INSULATED WITH COPPER WIRE SCREEN AND POLYETHYLENE SHEATH POWER CABLE

TIS 2202-2547 (IEC 60840)




### CABLE STRUCTURE

| | |
|---|---|
| **Conductor** | : Compacted round stranded annealed copper |
| **Conductor shield** | : Semi conductive tape with extruded Semi-conductive cross-linked polyethylene compound |
| **Insulation** | : Cross-linked polyethylene (XLPE) |
| **Insulation shield** | : Semi-conductive tape cross-linked polyethylene compound |
| **Water blocking tape** | : Semi-conductive waler blocking tape |
| **Metallic screen** | : Copper wire screen with copper contact tape |
| **Synthetic water blocking and cushioning tape** | : Non-conductive water blocking tape |
| **Radial water barrier** | : Aluminium laminate tape |
| **Sheath** | : Black polyethylene (PE/ST7) |

### TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C

**Testing voltage** : 90,000 Volts

**Reference standard** : TIS 2202, TIS 2427 (IEC 60840,IEC60228)

B

### APPLICATION

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

| Number of core | Nominal cross sectional area ($mm^2$) | Number of wires minimum (No.) | Conductor diameter approx. (mm) | Conductor shield thickness nominal (mm) | Insulation thickness nominal (mm) | Insulation shield thickness nominal (mm) | Copper wire area nominal ($mm^2$) | sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 400/95 | 53 | 23.5 | 1.5 | 11.0 | 1.5 | 95 | 3.1 | 66.0 | 0.0470 | 7,000 | 300/D |
| | 500/95 | 53 | 26.7 | 1.5 | 11.0 | 1.5 | 95 | 3.2 | 69.0 | 0.0366 | 8,000 | 300/D |
| | 630/120 | 53 | 30.3 | 1.5 | 11.0 | 1.5 | 120 | 3.4 | 74.0 | 0.0283 | 10,000 | 300/D |
| | 800/120 | 53 | 34.1 | 1.5 | 11.0 | 1.5 | 120 | 3.5 | 78.0 | 0.0221 | 11,500 | 300/D |

D : Packing in drum

| Number of core | Nominal cross sectional area | Continuous current rating in ground at 30°C maximum | | | A.C.Resistance R (Ω/km) | | | Inductance L (mH/km) | | | Reactance XL (Ω/km) | | | Impedance Z (Ω/km) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Spaced | Touching | Trefoil | Space | Touching | Trefoil | Space | Touching | Trefoil | Space | Touching | Trefoil | Space | Touching | Trefoil |
| 1 | 400/95 | 873 | 871 | 611 | 0.0613 | 0.0616 | 0.0617 | 0.5835 | 0.4449 | 0.3987 | 0.1833 | 0.1398 | 0.1252 | 0.1933 | 0.1527 | 0.1396 |
| | 500/95 | 1001 | 997 | 695 | 0.0485 | 0.0488 | 0.0490 | 0.5679 | 0.4293 | 0.3831 | 0.1784 | 0.1349 | 0.1203 | 0.1849 | 0.1434 | 0.1300 |
| | 630/120 | 1145 | 1138 | 788 | 0.0384 | 0.0388 | 0.0392 | 0.5543 | 0.4156 | 0.3694 | 0.1741 | 0.1306 | 0.1161 | 0.1783 | 0.1362 | 0.1225 |
| | 800/120 | 1295 | 1282 | 881 | 0.0311 | 0.0316 | 0.0321 | 0.5411 | 0.4025 | 0.3563 | 0.1700 | 0.1264 | 0.1119 | 0.1728 | 0.1303 | 0.1164 |

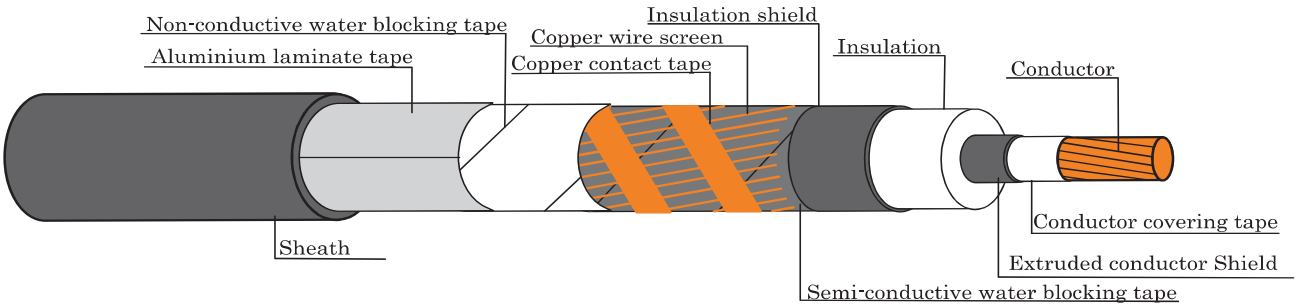
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W

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

# 115KV-CE

## 115 kV 90°C CROSS LINKED POLYETHYLENE INSULATED WITH COPPER WIRE SCREEN AND POLYETHYLENE SHEATH POWER CABLE

TIS 2202-2547 (IEC 60840)




### CABLE STRUCTURE

**Conductor** : Compacted round stranded annealed copper

**Conductor shield** : Semi conductive tape with extruded Semi-conductive cross-linked polyethylene compound

**Insulation** : Cross-linked polyethylene (XLPE)

**Insulation shield** : Semi-conductive tape cross-linked polyethylene compound

**Water blocking tape** : Semi-conductive waler blocking tape

**Metallic screen** : Copper wire screen with copper contact tape

**Synthetic water blocking and cushioning tape** : Non-conductive water blocking tape

**Radial water barrier** : Aluminium laminate tape

**Sheath** : Black polyethylene (PE/ST7)

### TECHNICAL DATA

**Classification** : Maximum conductor temperature 90°C

**Testing voltage** : 160,000 Volts

**Reference standard** : TIS 2202, TIS 2427 (IEC 60840,IEC60228)

B

### APPLICATION

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

| Number of core | Nominal cross sectional area ($mm^2$) | Number of wires minimum (No.) | Conductor diameter approx. (mm) | Conductor shield thickness nominal (mm) | Insulation thickness nominal (mm) | Insulation shield thickness nominal (mm) | Copper wire area nominal ($mm^2$) | sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 400/95 | 53 | 23.5 | 1.5 | 16.0 | 1.5 | 95 | 3.5 | 76 | 0.0470 | 8,000 | 300/D |
| | 500/95 | 53 | 26.7 | 1.5 | 16.0 | 1.5 | 95 | 3.6 | 80 | 0.0366 | 9,000 | 300/D |
| | 630/120 | 53 | 30.3 | 1.5 | 16.0 | 1.5 | 120 | 3.7 | 84 | 0.0283 | 11,000 | 300/D |
| | 800/120 | 53 | 34.1 | 1.5 | 16.0 | 1.5 | 120 | 3.9 | 88 | 0.0221 | 13,000 | 300/D |

D : Packing in drum

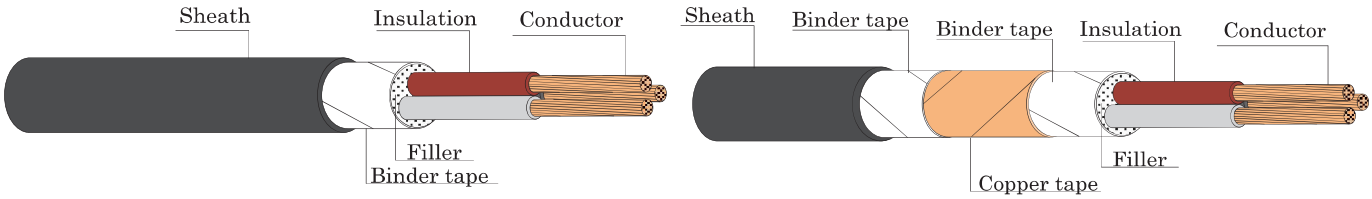
| Number of core | Nominal cross sectional area | Continuous current rating in ground at 30°C maximum | | | A.C.Resistance R (Ω/km) | | | Inductance L (mH/km) | | | Reactance XL (Ω/km) | | | Impedance Z (Ω/km) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Spaced | Touching | Trefoil | Space | Touching | Trefoil | Space | Touching | Trefoil | Space | Touching | Trefoil | Space | Touching | Trefoil |
| 1 | 400/95 | 850 | 849 | 607 | 0.0613 | 0.0615 | 0.0616 | 0.6128 | 0.4741 | 0.4279 | 0.1925 | 0.1490 | 0.1344 | 0.2020 | 0.1611 | 0.1479 |
| | 500/95 | 975 | 972 | 691 | 0.0485 | 0.0487 | 0.0489 | 0.5958 | 0.4572 | 0.4110 | 0.1872 | 0.1436 | 0.1291 | 0.1934 | 0.1517 | 0.1381 |
| | 630/120 | 1117 | 1112 | 785 | 0.0384 | 0.0387 | 0.0390 | 0.5805 | 0.4418 | 0.3956 | 0.1824 | 0.1388 | 0.1243 | 0.1864 | 0.1441 | 0.1302 |
| | 800/120 | 1264 | 1254 | 879 | 0.0310 | 0.0315 | 0.0318 | 0.5665 | 0.4279 | 0.3817 | 0.1780 | 0.1344 | 0.1199 | 0.1807 | 0.1381 | 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

# 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**




## 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 throungout the whole length of insulated wires for the porpose of core identification.

**Filler** : polypropylene (non-hygroscopic materail)

**Binder tape and Separator tape** : Spunbond tape

**Shield** : Copper tape

**Sheath** : Black polyvinyl chloride (PVC)

## TECHNICAL DATA

**Classification** : Maximum conductor temperature 70°C
: Circuit voltage not exceeding 600 Volts

**Testing voltage** : 2,000 Volts

**Reference standard** : THAI YAZAKI STANDARD

B

## APPLICATION

For supervisory electrical equipment, station control circuits, outdoor, suitable installation in the dry or wet cable trenches.

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 2 | 0.5 | Flexible | 0.6 | 0.9 | 7.5 | 39.0 | 0.0130 | 49 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.2 | 8.5 | 26.0 | 0.0114 | 65 | 300/D |
| | 1 | Flexible | 0.6 | 1.2 | 8.7 | 19.5 | 0.0104 | 75 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.2 | 9.3 | 13.3 | 0.0089 | 90 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.2 | 10.5 | 7.98 | 0.0081 | 130 | 300/D |
| | 4 | Flexible | 0.8 | 1.2 | 12.0 | 4.95 | 0.0076 | 170 | 300/D |
| | 6 | Flexible | 0.8 | 1.4 | 14.0 | 3.30 | 0.0061 | 250 | 300/D |
| 3 | 0.5 | Flexible | 0.6 | 1.2 | 8.5 | 39.0 | 0.0130 | 65 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.2 | 8.9 | 26.0 | 0.0114 | 80 | 300/D |
| | 1 | Flexible | 0.6 | 1.2 | 9.1 | 19.5 | 0.0104 | 90 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.2 | 9.8 | 13.3 | 0.0089 | 110 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.2 | 11.0 | 7.98 | 0.0081 | 160 | 300/D |
| | 4 | Flexible | 0.8 | 1.2 | 13.0 | 4.95 | 0.0076 | 230 | 300/D |
| | 6 | Flexible | 0.8 | 1.4 | 15.0 | 3.30 | 0.0061 | 330 | 300/D |
| 4 | 0.5 | Flexible | 0.6 | 1.2 | 9.1 | 39.0 | 0.0130 | 80 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.2 | 9.6 | 26.0 | 0.0114 | 95 | 300/D |
| | 1 | Flexible | 0.6 | 1.2 | 9.8 | 19.5 | 0.0104 | 110 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.2 | 10.5 | 13.3 | 0.0089 | 140 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.2 | 12.0 | 7.98 | 0.0081 | 200 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 14.5 | 4.95 | 0.0076 | 300 | 300/D |
| | 6 | Flexible | 0.8 | 1.4 | 16.5 | 3.30 | 0.0061 | 410 | 300/D |
| 5 | 0.5 | Flexible | 0.6 | 1.2 | 9.8 | 39.0 | 0.0130 | 90 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.2 | 10.0 | 26.0 | 0.0114 | 110 | 300/D |
| | 1 | Flexible | 0.6 | 1.2 | 10.5 | 19.5 | 0.0104 | 130 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.2 | 11.5 | 13.3 | 0.0089 | 160 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 13.5 | 7.98 | 0.0081 | 250 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 15.5 | 4.95 | 0.0076 | 350 | 300/D |
| | 6 | Flexible | 0.8 | 1.4 | 18.0 | 3.30 | 0.0061 | 500 | 300/D |

D = Packing in drum

# 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**

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 6 | 0.5 | Flexible | 0.6 | 1.2 | 10.5 | 39.0 | 0.0130 | 110 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.2 | 11.0 | 26.0 | 0.0114 | 130 | 300/D |
| | 1 | Flexible | 0.6 | 1.2 | 11.5 | 19.5 | 0.0104 | 150 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.2 | 12.0 | 13.3 | 0.0089 | 190 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 14.5 | 7.98 | 0.0081 | 290 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 17.0 | 4.95 | 0.0076 | 420 | 300/D |
| | 6 | Flexible | 0.8 | 1.4 | 19.5 | 3.30 | 0.0061 | 600 | 300/D |
| 7 | 0.5 | Flexible | 0.6 | 1.2 | 10.5 | 39.0 | 0.0130 | 110 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.2 | 11.0 | 26.0 | 0.0114 | 140 | 300/D |
| | 1 | Flexible | 0.6 | 1.2 | 11.5 | 19.5 | 0.0104 | 160 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.2 | 12.0 | 13.3 | 0.0089 | 210 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 14.5 | 7.98 | 0.0081 | 320 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 17.0 | 4.95 | 0.0076 | 460 | 300/D |
| | 6 | Flexible | 0.8 | 1.4 | 19.5 | 3.30 | 0.0061 | 650 | 300/D |
| 8 | 0.5 | Flexible | 0.6 | 1.2 | 11.0 | 39.0 | 0.0130 | 130 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.2 | 11.5 | 26.0 | 0.0114 | 160 | 300/D |
| | 1 | Flexible | 0.6 | 1.2 | 12.0 | 19.5 | 0.0104 | 180 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 13.5 | 13.3 | 0.0089 | 240 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 16.0 | 7.98 | 0.0081 | 360 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 18.5 | 4.95 | 0.0076 | 550 | 300/D |
| | 6 | Flexible | 0.8 | 1.4 | 21.0 | 3.30 | 0.0061 | 750 | 300/D |
| 9 | 0.5 | Flexible | 0.6 | 1.2 | 12.0 | 39.0 | 0.0130 | 150 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.2 | 12.5 | 26.0 | 0.0114 | 180 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 13.5 | 19.5 | 0.0104 | 220 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 14.5 | 13.3 | 0.0089 | 270 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 17.0 | 7.98 | 0.0081 | 410 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 20.0 | 4.95 | 0.0076 | 600 | 300/D |
| | 6 | Flexible | 0.8 | 1.4 | 23.0 | 3.30 | 0.0061 | 850 | 300/D |
| 10 | 0.5 | Flexible | 0.6 | 1.2 | 12.5 | 39.0 | 0.0130 | 150 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 14.0 | 26.0 | 0.0114 | 210 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 14.5 | 19.5 | 0.0104 | 240 | 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 | 18.0 | 7.98 | 0.0081 | 460 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 21.0 | 4.95 | 0.0076 | 650 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 25.0 | 3.30 | 0.0061 | 1,000 | 300/D |
| 11 | 0.5 | Flexible | 0.6 | 1.2 | 12.5 | 39.0 | 0.0130 | 170 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 14.0 | 26.0 | 0.0114 | 210 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 14.5 | 19.5 | 0.0104 | 250 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 15.5 | 13.3 | 0.0089 | 320 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 18.0 | 7.98 | 0.0081 | 480 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 21.0 | 4.95 | 0.0076 | 700 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 25.0 | 3.30 | 0.0061 | 1,100 | 300/D |
| 12 | 0.5 | Flexible | 0.6 | 1.2 | 13.0 | 39.0 | 0.0130 | 180 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 14.5 | 26.0 | 0.0114 | 220 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 15.0 | 19.5 | 0.0104 | 280 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 16.0 | 13.3 | 0.0089 | 350 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 19.0 | 7.98 | 0.0081 | 550 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 22.0 | 4.95 | 0.0076 | 750 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 26.0 | 3.30 | 0.0061 | 1,200 | 300/D |
| 13 | 0.5 | Flexible | 0.6 | 1.4 | 14.0 | 39.0 | 0.0130 | 200 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 15.0 | 26.0 | 0.0114 | 250 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 15.5 | 19.5 | 0.0104 | 290 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 17.0 | 13.3 | 0.0089 | 370 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 20.0 | 7.98 | 0.0081 | 550 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 23.0 | 4.95 | 0.0076 | 850 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 28.0 | 3.30 | 0.0061 | 1,200 | 300/D |
| 14 | 0.5 | Flexible | 0.6 | 1.4 | 14.0 | 39.0 | 0.0130 | 210 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 15.0 | 26.0 | 0.0114 | 250 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 15.5 | 19.5 | 0.0104 | 300 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 17.0 | 13.3 | 0.0089 | 390 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 20.0 | 7.98 | 0.0081 | 600 | 300/D |
| | 4 | Flexible | 0.8 | 1.4 | 23.0 | 4.95 | 0.0076 | 850 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 28.0 | 3.30 | 0.0061 | 1,300 | 300/D |

D = Packing in drum

# 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**

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 15 | 0.5 | Flexible | 0.6 | 1.4 | 14.5 | 39.0 | 0.0130 | 220 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 15.5 | 26.0 | 0.0114 | 270 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 16.0 | 19.5 | 0.0104 | 320 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 17.5 | 13.3 | 0.0089 | 420 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 21.0 | 7.98 | 0.0081 | 650 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 25.0 | 4.95 | 0.0076 | 950 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 29.0 | 3.30 | 0.0061 | 1,400 | 300/D |
| 16 | 0.5 | Flexible | 0.6 | 1.4 | 15.0 | 39.0 | 0.0130 | 230 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 15.5 | 26.0 | 0.0114 | 280 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 16.0 | 19.5 | 0.0104 | 340 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 17.5 | 13.3 | 0.0089 | 430 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 21.0 | 7.98 | 0.0081 | 650 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 25.0 | 4.95 | 0.0076 | 1,000 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 29.0 | 3.30 | 0.0061 | 1,400 | 300/D |
| 17 | 0.5 | Flexible | 0.6 | 1.4 | 15.5 | 39.0 | 0.0130 | 240 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 16.5 | 26.0 | 0.0114 | 310 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 17.0 | 19.5 | 0.0104 | 370 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 18.5 | 13.3 | 0.0089 | 470 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 22.0 | 7.98 | 0.0081 | 700 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 27.0 | 4.95 | 0.0076 | 1,100 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 31.0 | 3.30 | 0.0061 | 1,600 | 300/D |
| 18 | 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 | 310 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 17.0 | 19.5 | 0.0104 | 370 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 18.5 | 13.3 | 0.0089 | 470 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 22.0 | 7.98 | 0.0081 | 700 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 27.0 | 4.95 | 0.0076 | 1,100 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 31.0 | 3.30 | 0.0061 | 1,600 | 300/D |
| 19 | 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 | 320 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 17.0 | 19.5 | 0.0104 | 380 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 18.5 | 13.3 | 0.0089 | 490 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 22.0 | 7.98 | 0.0081 | 750 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 27.0 | 4.95 | 0.0076 | 1,100 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 31.0 | 3.30 | 0.0061 | 1,600 | 300/D |
| 20 | 0.5 | Flexible | 0.6 | 1.4 | 16.0 | 39.0 | 0.0130 | 270 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 17.0 | 26.0 | 0.0114 | 330 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 17.5 | 19.5 | 0.0104 | 400 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 19.0 | 13.3 | 0.0089 | 500 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 23.0 | 7.98 | 0.0081 | 800 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 28.0 | 4.95 | 0.0076 | 1,200 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 32.0 | 3.30 | 0.0061 | 1,700 | 300/D |
| 21 | 0.5 | Flexible | 0.6 | 1.4 | 16.5 | 39.0 | 0.0130 | 280 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 17.5 | 26.0 | 0.0114 | 350 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 18.0 | 19.5 | 0.0104 | 420 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 19.5 | 13.3 | 0.0089 | 550 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.4 | 23.0 | 7.98 | 0.0081 | 800 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 28.0 | 4.95 | 0.0076 | 1,300 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 32.0 | 3.30 | 0.0061 | 1,800 | 300/D |
| 22 | 0.5 | Flexible | 0.6 | 1.4 | 17.0 | 39.0 | 0.0130 | 300 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 18.0 | 26.0 | 0.0114 | 370 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 18.5 | 19.5 | 0.0104 | 450 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 20.0 | 13.3 | 0.0089 | 550 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 25.0 | 7.98 | 0.0081 | 900 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 30.0 | 4.95 | 0.0076 | 1,300 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 34.0 | 3.30 | 0.0061 | 1,900 | 300/D |
| 23 | 0.5 | Flexible | 0.6 | 1.4 | 17.0 | 39.0 | 0.0130 | 310 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 18.0 | 26.0 | 0.0114 | 380 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 18.5 | 19.5 | 0.0104 | 460 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 20.0 | 13.3 | 0.0089 | 600 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 25.0 | 7.98 | 0.0081 | 950 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 30.0 | 4.95 | 0.0076 | 1,400 | 300/D |
| | 6 | Flexible | 0.8 | 1.8 | 34.0 | 3.30 | 0.0061 | 2,000 | 300/D |

D = Packing in drum

# 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**

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 24 | 0.5 | Flexible | 0.6 | 1.4 | 18.0 | 39.0 | 0.0130 | 320 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 19.0 | 26.0 | 0.0114 | 400 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 19.5 | 19.5 | 0.0104 | 500 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 21.0 | 13.3 | 0.0089 | 600 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 26.0 | 7.98 | 0.0081 | 1,000 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 31.0 | 4.95 | 0.0076 | 1,400 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 37.0 | 3.30 | 0.0061 | 2,100 | 300/D |
| 25 | 0.5 | Flexible | 0.6 | 1.4 | 18.0 | 39.0 | 0.0130 | 330 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 19.0 | 26.0 | 0.0114 | 410 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 19.5 | 19.5 | 0.0104 | 490 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 21.0 | 13.3 | 0.0089 | 650 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 26.0 | 7.98 | 0.0081 | 1,000 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 31.0 | 4.95 | 0.0076 | 1,500 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 37.0 | 3.30 | 0.0061 | 2,200 | 300/D |
| 26 | 0.5 | Flexible | 0.6 | 1.4 | 18.0 | 39.0 | 0.0130 | 340 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 19.0 | 26.0 | 0.0114 | 420 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 19.5 | 19.5 | 0.0104 | 500 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 21.0 | 13.3 | 0.0089 | 650 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 26.0 | 7.98 | 0.0081 | 1,000 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 31.0 | 4.95 | 0.0076 | 1,500 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 37.0 | 3.30 | 0.0061 | 2,300 | 300/D |
| 27 | 0.5 | Flexible | 0.6 | 1.4 | 18.5 | 39.0 | 0.0130 | 340 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 19.5 | 26.0 | 0.0114 | 430 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 20.0 | 19.5 | 0.0104 | 500 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 22.0 | 13.3 | 0.0089 | 650 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 27.0 | 7.98 | 0.0081 | 1,100 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 32.0 | 4.95 | 0.0076 | 1,600 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 38.0 | 3.30 | 0.0061 | 2,400 | 300/D |
| 28 | 0.5 | Flexible | 0.6 | 1.4 | 19.0 | 39.0 | 0.0130 | 370 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 20.0 | 26.0 | 0.0114 | 460 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 21.0 | 19.5 | 0.0104 | 550 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 23.0 | 13.3 | 0.0089 | 700 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 28.0 | 7.98 | 0.0081 | 1,100 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 33.0 | 4.95 | 0.0076 | 1,700 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 39.0 | 3.30 | 0.0061 | 2,500 | 300/D |
| 29 | 0.5 | Flexible | 0.6 | 1.4 | 19.0 | 39.0 | 0.0130 | 370 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 20.0 | 26.0 | 0.0114 | 460 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 21.0 | 19.5 | 0.0104 | 550 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 23.0 | 13.3 | 0.0089 | 700 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 28.0 | 7.98 | 0.0081 | 1,100 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 33.0 | 4.95 | 0.0076 | 1,700 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 39.0 | 3.30 | 0.0061 | 2,500 | 300/D |
| 30 | 0.5 | Flexible | 0.6 | 1.4 | 19.0 | 39.0 | 0.0130 | 370 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 20.0 | 26.0 | 0.0114 | 470 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 21.0 | 19.5 | 0.0104 | 550 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.4 | 23.0 | 13.3 | 0.0089 | 750 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 28.0 | 7.98 | 0.0081 | 1,200 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 33.0 | 4.95 | 0.0076 | 1,700 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 39.0 | 3.30 | 0.0061 | 2,600 | 300/D |
| 31 | 0.5 | Flexible | 0.6 | 1.4 | 19.5 | 39.0 | 0.0130 | 400 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 21.0 | 26.0 | 0.0114 | 500 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 22.0 | 19.5 | 0.0104 | 600 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 24.0 | 13.3 | 0.0089 | 850 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 29.0 | 7.98 | 0.0081 | 1,300 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 34.0 | 4.95 | 0.0076 | 1,800 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 41.0 | 3.30 | 0.0061 | 2,700 | 300/D |
| 32 | 0.5 | Flexible | 0.6 | 1.4 | 19.5 | 39.0 | 0.0130 | 400 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 21.0 | 26.0 | 0.0114 | 500 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 22.0 | 19.5 | 0.0104 | 600 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 24.0 | 13.3 | 0.0089 | 850 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 29.0 | 7.98 | 0.0081 | 1,300 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 34.0 | 4.95 | 0.0076 | 1,900 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 41.0 | 3.30 | 0.0061 | 2,800 | 300/D |

D = Packing in drum

B

# 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**

| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 33 | 0.5 | Flexible | 0.6 | 1.4 | 19.5 | 39.0 | 0.0130 | 400 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 21.0 | 26.0 | 0.0114 | 500 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 22.0 | 19.5 | 0.0104 | 600 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 24.0 | 13.3 | 0.0089 | 850 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 29.0 | 7.98 | 0.0081 | 1,300 | 300/D |
| | 4 | Flexible | 0.8 | 1.8 | 34.0 | 4.95 | 0.0076 | 1,900 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 41.0 | 3.30 | 0.0061 | 2,800 | 300/D |
| 34 | 0.5 | Flexible | 0.6 | 1.4 | 20.0 | 39.0 | 0.0130 | 430 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 21.0 | 26.0 | 0.0114 | 550 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 22.0 | 19.5 | 0.0104 | 650 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 25.0 | 13.3 | 0.0089 | 900 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 30.0 | 7.98 | 0.0081 | 1,400 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 37.0 | 4.95 | 0.0076 | 2,100 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 42.0 | 3.30 | 0.0061 | 3,000 | 300/D |
| 35 | 0.5 | Flexible | 0.6 | 1.4 | 20.0 | 39.0 | 0.0130 | 430 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 21.0 | 26.0 | 0.0114 | 550 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 22.0 | 19.5 | 0.0104 | 650 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 25.0 | 13.3 | 0.0089 | 900 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 30.3 | 7.98 | 0.0081 | 1,400 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 37.0 | 4.95 | 0.0076 | 2,100 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 42.0 | 3.30 | 0.0061 | 3,000 | 300/D |
| 36 | 0.5 | Flexible | 0.6 | 1.4 | 20.0 | 39.0 | 0.0130 | 440 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 21.0 | 26.0 | 0.0114 | 550 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 22.0 | 19.5 | 0.0104 | 650 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 25.0 | 13.3 | 0.0089 | 900 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 30.0 | 7.98 | 0.0081 | 1,400 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 37.0 | 4.95 | 0.0076 | 2,100 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 42.0 | 3.30 | 0.0061 | 3,100 | 300/D |
| 37 | 0.5 | Flexible | 0.6 | 1.4 | 20.0 | 39.0 | 0.0130 | 450 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 21.0 | 26.0 | 0.0114 | 550 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 22.0 | 19.5 | 0.0104 | 700 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 25.0 | 13.3 | 0.0089 | 950 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 30.0 | 7.98 | 0.0081 | 1,400 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 37.0 | 4.95 | 0.0076 | 2,200 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 42.0 | 3.30 | 0.0061 | 3,100 | 300/D |
| 38 | 0.5 | Flexible | 0.6 | 1.4 | 21.0 | 39.0 | 0.0130 | 460 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 22.0 | 26.0 | 0.0114 | 600 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 23.0 | 19.5 | 0.0104 | 700 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 26.0 | 13.3 | 0.0089 | 950 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 31.0 | 7.98 | 0.0081 | 1,500 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 38.0 | 4.95 | 0.0076 | 2,200 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 44.0 | 3.30 | 0.0061 | 3,300 | 300/D |
| 39 | 0.5 | Flexible | 0.6 | 1.4 | 21.0 | 39.0 | 0.0130 | 470 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 22.0 | 26.0 | 0.0114 | 600 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 23.0 | 19.5 | 0.0104 | 700 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 26.0 | 13.3 | 0.0089 | 1,000 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 31.0 | 7.98 | 0.0081 | 1,500 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 38.0 | 4.95 | 0.0076 | 2,300 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 44.0 | 3.30 | 0.0061 | 3,300 | 300/D |
| 40 | 0.5 | Flexible | 0.6 | 1.4 | 21.0 | 39.0 | 0.0130 | 480 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 22.0 | 26.0 | 0.0114 | 600 | 300/D |
| | 1 | Flexible | 0.6 | 1.4 | 23.0 | 19.5 | 0.0104 | 750 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 26.0 | 13.3 | 0.0089 | 1,000 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 31.0 | 7.98 | 0.0081 | 1,500 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 38.0 | 4.95 | 0.0076 | 2,300 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 44.0 | 3.30 | 0.0061 | 3,400 | 300/D |
| 41 | 0.5 | Flexible | 0.6 | 1.4 | 22.0 | 39.0 | 0.0130 | 500 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 23.0 | 26.0 | 0.0114 | 650 | 300/D |
| | 1 | Flexible | 0.6 | 1.8 | 25.0 | 19.5 | 0.0104 | 800 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 27.0 | 13.3 | 0.0089 | 1,000 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 33.0 | 7.98 | 0.0081 | 1,600 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 40.0 | 4.95 | 0.0076 | 2,400 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 46.0 | 3.30 | 0.0061 | 3,500 | 300/D |

D = Packing in drum

# 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**

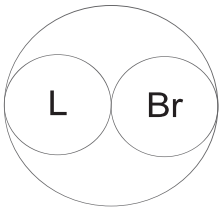
| Number of cores | Nominal cross sectional area ($mm^2$) | Conductor type | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 42 | 0.5 | Flexible | 0.6 | 1.4 | 22.0 | 39.0 | 0.0130 | 500 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 23.0 | 26.0 | 0.0114 | 650 | 300/D |
| | 1 | Flexible | 0.6 | 1.8 | 25.0 | 19.5 | 0.0104 | 800 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 27.0 | 13.3 | 0.0089 | 1100 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 33.0 | 7.98 | 0.0081 | 1,600 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 40.0 | 4.95 | 0.0076 | 2,500 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 46.0 | 3.30 | 0.0061 | 3,600 | 300/D |
| 43 | 0.5 | Flexible | 0.6 | 1.4 | 22.0 | 39.0 | 0.0130 | 500 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 23.0 | 26.0 | 0.0114 | 650 | 300/D |
| | 1 | Flexible | 0.6 | 1.8 | 25.0 | 19.5 | 0.0104 | 850 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 27.0 | 13.3 | 0.0089 | 1100 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 33.0 | 7.98 | 0.0081 | 1,600 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 40.0 | 4.95 | 0.0076 | 2,500 | 300/D |
| | 6 | Flexible | 0.8 | 2.2 | 46.0 | 3.30 | 0.0061 | 3,600 | 300/D |
| 44 | 0.5 | Flexible | 0.6 | 1.4 | 22.0 | 39.0 | 0.0130 | 550 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 24.0 | 26.0 | 0.0114 | 650 | 300/D |
| | 1 | Flexible | 0.6 | 1.8 | 26.0 | 19.5 | 0.0104 | 850 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 28.0 | 13.3 | 0.0089 | 1,100 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 34.0 | 7.98 | 0.0081 | 1,700 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 41.0 | 4.95 | 0.0076 | 2,600 | 300/D |
| | 6 | Flexible | 0.8 | 2.6 | 48.0 | 3.30 | 0.0061 | 3,800 | 300/D |
| 45 | 0.5 | Flexible | 0.6 | 1.4 | 22.0 | 39.0 | 0.0130 | 550 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 24.0 | 26.0 | 0.0114 | 700 | 300/D |
| | 1 | Flexible | 0.6 | 1.8 | 26.0 | 19.5 | 0.0104 | 850 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 28.0 | 13.3 | 0.0089 | 1,100 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 34.0 | 7.98 | 0.0081 | 1,700 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 41.0 | 4.95 | 0.0076 | 2,600 | 300/D |
| | 6 | Flexible | 0.8 | 2.6 | 48.0 | 3.30 | 0.0061 | 3,900 | 300/D |
| 46 | 0.5 | Flexible | 0.6 | 1.4 | 22.0 | 39.0 | 0.0130 | 550 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 24.0 | 26.0 | 0.0114 | 700 | 300/D |
| | 1 | Flexible | 0.6 | 1.8 | 26.0 | 19.5 | 0.0104 | 900 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 28.0 | 13.3 | 0.0089 | 1,100 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 34.0 | 7.98 | 0.0081 | 1,800 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 41.0 | 4.95 | 0.0076 | 2,700 | 300/D |
| | 6 | Flexible | 0.8 | 2.6 | 48.0 | 3.30 | 0.0061 | 4,000 | 300/D |
| 47 | 0.5 | Flexible | 0.6 | 1.4 | 22.0 | 39.0 | 0.0130 | 550 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.4 | 24.0 | 26.0 | 0.0114 | 700 | 300/D |
| | 1 | Flexible | 0.6 | 1.8 | 26.0 | 19.5 | 0.0104 | 900 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 28.0 | 13.3 | 0.0089 | 1,200 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 34.0 | 7.98 | 0.0081 | 1,800 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 41.0 | 4.95 | 0.0076 | 2,700 | 300/D |
| | 6 | Flexible | 0.8 | 2.6 | 48.0 | 3.30 | 0.0061 | 4,000 | 300/D |
| 48 | 0.5 | Flexible | 0.6 | 1.4 | 23.0 | 39.0 | 0.0130 | 550 | 300/D |
| | 0.75 | Flexible | 0.6 | 1.8 | 25.0 | 26.0 | 0.0114 | 750 | 300/D |
| | 1 | Flexible | 0.6 | 1.8 | 26.0 | 19.5 | 0.0104 | 900 | 300/D |
| | 1.5 | Flexible | 0.6 | 1.8 | 29.0 | 13.3 | 0.0089 | 1,200 | 300/D |
| | 2.5 | Flexible | 0.7 | 1.8 | 34.0 | 7.98 | 0.0081 | 1,800 | 300/D |
| | 4 | Flexible | 0.8 | 2.2 | 42.0 | 4.95 | 0.0076 | 2,800 | 300/D |
| | 6 | Flexible | 0.8 | 2.6 | 49.0 | 3.30 | 0.0061 | 4,100 | 300/D |

D = Packing in drum

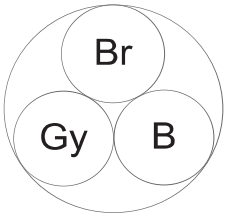
This table show only flexible stranded condutor. If you want to have solid or concentric conductor type, please contact with our sales department for CVV-S : The overall diameter of cable and cable weight shall be change a little bit more.
*Remark : Special protection can be produce.

## 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

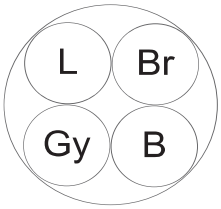
### ARRANGEMENT OF CORES FOR CVV or CVV-S



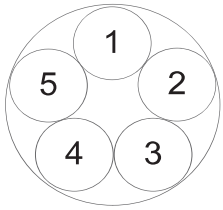
2 CORES



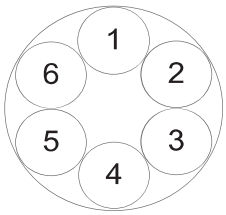
3 CORES



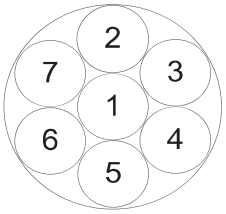
4 CORES



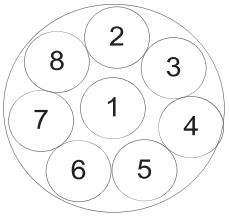
5 CORES



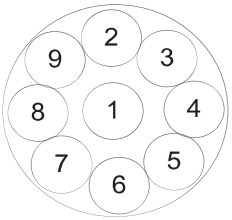
6 CORES



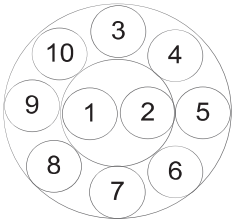
7 CORES



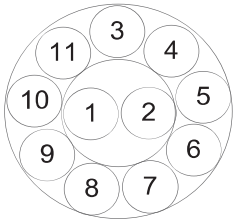
8 CORES



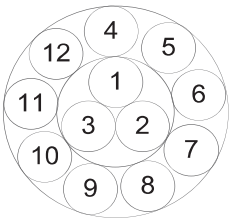
9 CORES



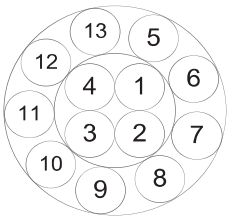
10 CORES



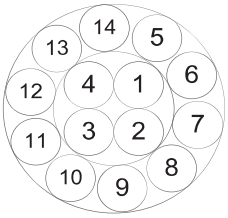
11 CORES



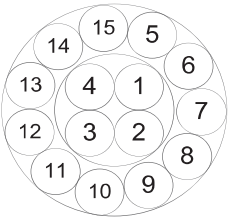
12 CORES



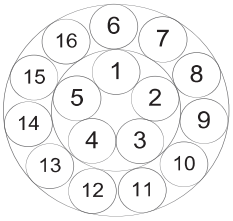
13 CORES



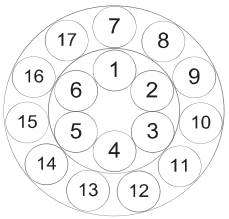
14 CORES



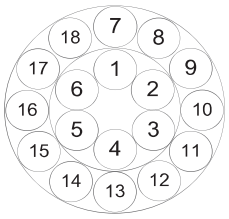
15 CORES



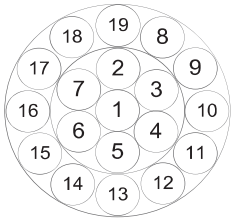
16 CORES



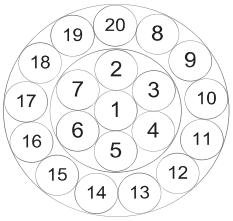
17 CORES



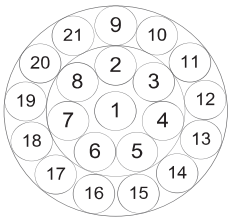
18 CORES



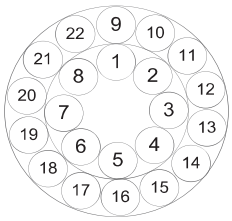
19 CORES



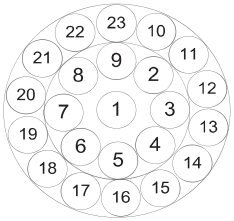
20 CORES



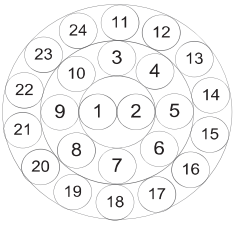
21 CORES



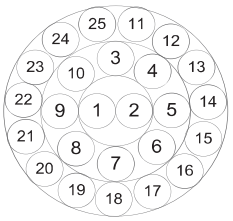
22 CORES



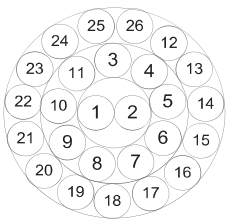
23 CORES



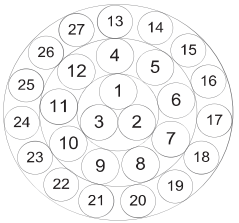
24 CORES



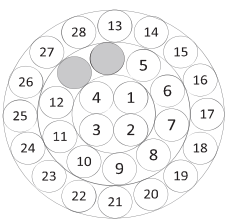
25 CORES



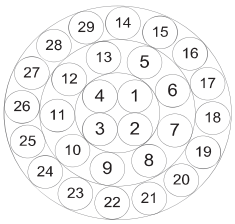
26 CORES



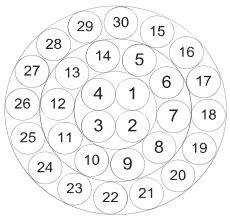
27 CORES



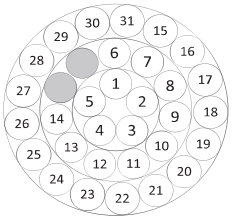
28 CORES



29 CORES



30 CORES



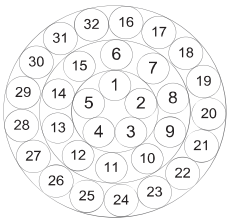
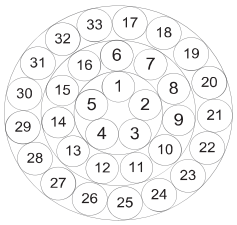
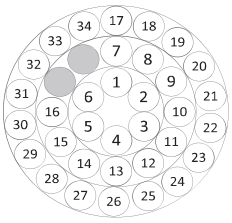
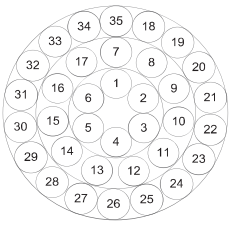
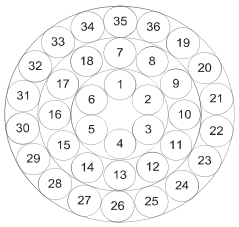
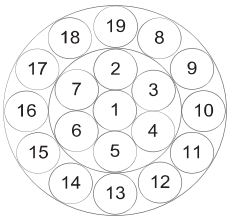
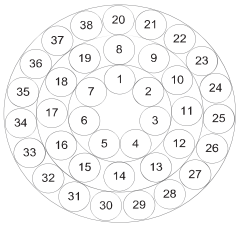
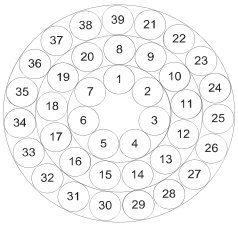
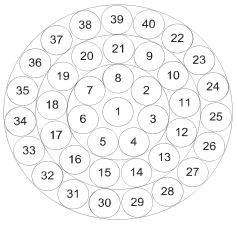
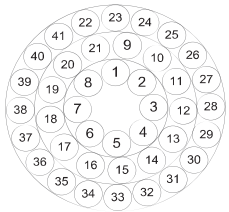
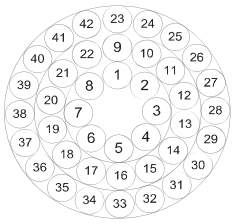
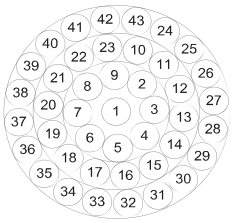
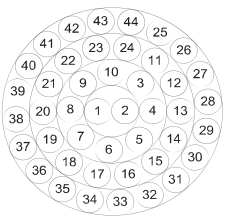
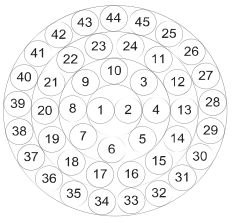
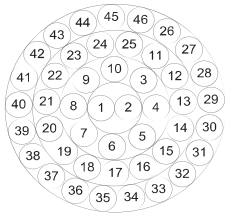
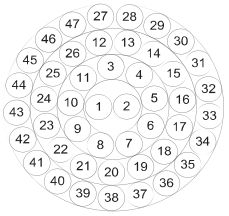
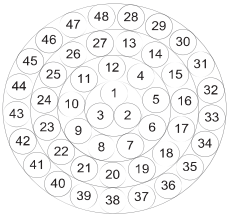
31 CORES

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

## 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 CVV or CVV-S

| | | | | |
|---|---|---|---|---|
|  32 CORES |  33 CORES |  34 CORES |  35 CORES |  36 CORES |
|  37 CORES |  38 CORES |  39 CORES |  40 CORES |  41 CORES |
|  42 CORES |  43 CORES |  44 CORES |  45 CORES |  46 CORES |
|  47 CORES |  48 CORES | | | |

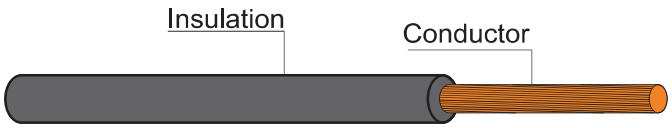
NOTE : Fillers are necessary to fill the cable a substantially circular cross section.
(If the stranded cores be circle enough, fillers shall not be necessary)

B

# T-AV

## 60°C LOW VOLTAGE FLEXIBLE CONDUCTOR PVC INSULATED FOR AUTOMOBILE

TIS 118-2522




### CABLE STRUCTURE

**Conductor** : Flexible annealed copper wire
Sizes 0.5 mm² up to 95 mm²

**Insulation** : Polyvinyl chloride (PVC)

**Core identification**
Single-cores : Any color

### TECHNICAL DATA

**Classification** : Maximum conductor temperature 60°C

**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

B

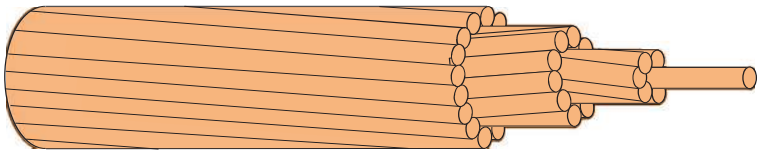
| Nominal cross sectional area ($mm^2$) | Number and diameter of wires (No./mm) | Conductor diameter approx. (mm) | Insulation thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Continuous currunt rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (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

# FHC

## HARD DRAWN COPPER STRANDED CONDUCTOR

TIS 64-2517



### CABLE STRUCTURE

**Conductor** : Hard drawn copper wires, concentric stranded conductor
Size 10 mm² up to 500 mm²
Stranding direction the outermost layer Z

### TECHNICAL DATA

**Reference standard** : TIS 64-2517

### APPLICATION

For grounding wire

| Nominal cross sectional area ($mm^2$) | Number and diameter of wires (No./mm) | Conductor diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Breaking strength (kgf) | Continuous currunt rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|
| 10 | 7/1.35 | 4.05 | 1.80548 | 438 | 90 | 90 | 100/C |
| 16 | 7/1.70 | 5.10 | 1.13857 | 694 | 125 | 140 | 100/C |
| 25 | 7/2.14 | 6.42 | 0.71851 | 1,076 | 160 | 230 | 100/C |
| 35 | 7/2.52 | 7.56 | 0.51815 | 1,459 | 200 | 320 | 100/C |
| 50 | 7/3.02 | 9.06 | 0.35896 | 2,095 | 250 | 450 | 100/C |
| 50 | 19/1.78 | 8.90 | 0.38252 | 2,021 | 250 | 430 | 100/C |
| 70 | 19/2.14 | 10.70 | 0.26466 | 2,921 | 310 | 600 | 500/D |
| 95 | 19/2.52 | 12.60 | 0.19183 | 3,961 | 380 | 850 | 500/D |
| 120 | 19/2.85 | 14.25 | 0.14922 | 5,067 | 440 | 1100 | 500/D |
| 150 | 37/2.25 | 15.75 | 0.12384 | 6,289 | 510 | 1300 | 500/D |
| 185 | 37/2.52 | 17.64 | 0.09813 | 7,713 | 585 | 1700 | 500/D |
| 240 | 61/2.25 | 20.25 | 0.07528 | 10,369 | 700 | 2200 | 500/D |
| 300 | 61/2.52 | 22.68 | 0.06002 | 12,717 | 800 | 2800 | 500/D |
| 400 | 61/2.85 | 25.65 | 0.04692 | 16,266 | 900 | 3600 | 500/D |
| 500 | 61/3.20 | 28.80 | 0.03703 | 20,506 | 1110 | 4500 | 500/D |

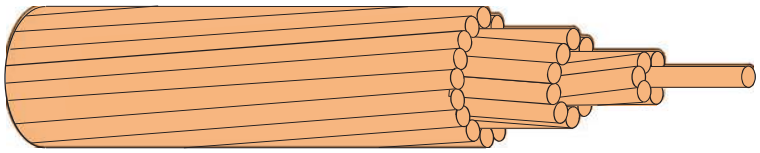
C : Packing in Coil
D : Packing in Drum

B

# FAC

## ANNEALED COPPER STRANDED CONDUCTOR

IEC 60228



### CABLE STRUCTURE

**Conductor** : Annealed copper wires, concentric stranded conductor
Size 1 $mm^2$ up to 1000 $mm^2$
Stranding direction the outermost layer S

### TECHNICAL DATA

**Reference standard** : IEC 60228 (Same as TIS 2427-2552)

### APPLICATION

Conductor for insulated cables and wires, grounded electrical system.

B

| Nominal cross sectional area ($mm^2$) | Number and diameter of wires (No./mm) | Conductor diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|
| 1 | 7/0.43 | 1.29 | 18.1 | 9 | 2000/D |
| 1.5 | 7/0.53 | 1.59 | 12.1 | 14 | 2000/D |
| 2.5 | 7/0.67 | 2.01 | 7.41 | 22 | 2000/D |
| 4 | 7/0.85 | 2.55 | 4.61 | 36 | 2000/D |
| 6 | 7/1.04 | 3.12 | 3.08 | 55 | 2000/D |
| 10 | 7/1.33 | 4.05 | 1.83 | 90 | 2000/D |
| 16 | 7/1.70 | 5.10 | 1.15 | 140 | 2000/D |
| 25 | 7/2.14 | 6.42 | 0.727 | 230 | 2000/D |
| 35 | 19/1.53 | 7.65 | 0.524 | 320 | 2000/D |
| 50 | 19/1.75 | 8.90 | 0.387 | 430 | 2000/D |
| 70 | 19/2.14 | 10.70 | 0.268 | 600 | 2000/D |
| 95 | 19/2.52 | 12.60 | 0.193 | 850 | 2000/D |
| 120 | 37/2.03 | 14.21 | 0.153 | 1100 | 1000/D |
| 150 | 37/2.25 | 15.75 | 0.124 | 1300 | 1000/D |
| 185 | 37/2.52 | 17.64 | 0.0991 | 1700 | 1000/D |
| 240 | 61/2.25 | 20.25 | 0.0754 | 2200 | 500/D |
| 300 | 61/2.52 | 22.68 | 0.0601 | 2800 | 500/D |
| 400 | 61/2.85 | 25.65 | 0.0470 | 3500 | 500/D |
| 500 | 61/3.20 | 28.80 | 0.0366 | 4500 | 500/D |
| 630 | 127/2.52 | 32.76 | 0.0283 | 6000 | 500/D |
| 800 | 127/2.85 | 37.05 | 0.0221 | 7500 | 500/D |
| 1000 | 127/3.20 | 41.6 | 0.0176 | 9500 | 300/D |

D : Packing in drum

# Aluminium Conductor Cables

## Building Wires and Cables



## Low Voltage Power Cables



C

## High Voltage Power Cables



## Bare Conductor

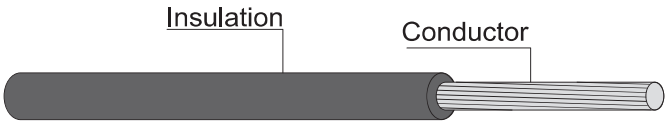


C

# THWA

## 750V 70°C ALUMINIUM CONDUCTOR PVC INSULATED, SINGLE CORE

TIS 293-2541




### CABLE STRUCTURE

**Conductor** : Solid and Stranded hard drawn aluminium wires
Sizes 10 mm² up to 500 mm²

**Insulation** : Black polyvinyl chloride (PVC)

### TECHNICAL DATA

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

**Testing voltage** : 2,500 Volts
**Reference standard** : TIS 293-2541, Table 1

### APPLICATION

For low voltage overhead distribution line

| Nominal cross sectional area (mm²) | Number and diameter of wires (No./mm) | Insulation thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Breaking strength of conductor minimum (N) | Continuous currunt rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|
| 10 | 1/3.49 | 1.1 | 6.0 | 3.08 | 0.0078 | 1,562 | 52 | 50 | 500/C |
| 10 | 7/1.32 | 1.1 | 6.5 | 3.08 | 0.0070 | 1,769 | 52 | 55 | 500/C |
| 16 | 1/4.43 | 1.1 | 7.0 | 1.91 | 0.0064 | 2,445 | 70 | 70 | 500/C |
| 16 | 7/1.68 | 1.1 | 7.6 | 1.91 | 0.0058 | 2,781 | 70 | 80 | 500/C |
| 25 | 7/2.12 | 1.3 | 9.3 | 1.20 | 0.0055 | 4,241 | 95 | 120 | 300/C |
| 35 | 7/2.49 | 1.3 | 10.5 | 0.868 | 0.0048 | 5,703 | 117 | 160 | 200/C |
| 50 | 7/2.90 | 1.5 | 12.0 | 0.641 | 0.0047 | 7,423 | 143 | 210 | 200/C |
| 50 | 19/1.76 | 1.5 | 12.5 | 0.641 | 0.0047 | 8,114 | 143 | 210 | 200/C |
| 70 | 19/2.12 | 1.5 | 14.0 | 0.443 | 0.0040 | 11,487 | 185 | 280 | 100/C |
| 95 | 19/2.49 | 1.7 | 16.5 | 0.320 | 0.0038 | 15,470 | 226 | 390 | 100/C |
| 120 | 19/2.80 | 1.7 | 18.0 | 0.253 | 0.0035 | 18,810 | 264 | 470 | 500/D |
| 120 | 37/2.01 | 1.7 | 18.0 | 0.253 | 0.0034 | 20,114 | 264 | 470 | 500/D |
| 150 | 37/2.23 | 1.9 | 20.0 | 0.206 | 0.0035 | 24,704 | 302 | 600 | 500/D |
| 185 | 37/2.50 | 2.1 | 22.0 | 0.164 | 0.0034 | 30,187 | 352 | 700 | 500/D |
| 240 | 61/2.23 | 2.3 | 25.0 | 0.125 | 0.0033 | 38,568 | 421 | 900 | 500/D |
| 300 | 61/2.49 | 2.5 | 28.0 | 0.100 | 0.0032 | 46,901 | 487 | 1,100 | 500/D |
| 400 | 61/2.82 | 2.7 | 32.0 | 0.0778 | 0.0031 | 57,948 | 574 | 1,400 | 500/D |
| 500 | 61/3.20 | 3.1 | 36.0 | 0.0605 | 0.0031 | 73,194 | 675 | 1,900 | 500/D |

C : Packing in coil
D : Packing in drum

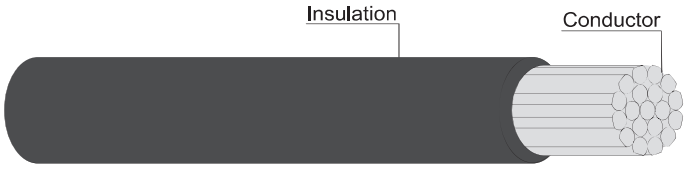
| Nominal cross sectional area (mm²) | Number and diameter of wires (No./mm) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| 10 | 1/3.49 | 3.7006 | 0.4819 | 0.1514 | 3.7037 |
| 10 | 7/1.32 | 3.7006 | 0.4868 | 0.1529 | 3.7038 |
| 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 |

C

# THWA-C

## 750V 70°C COMPACTED ALUMINIUM CONDUCTOR PVC INSULATED, SINGLE CORE

TIS 293-2541




## CABLE STRUCTURE

**Conductor** : Compact stranded hard drawn aluminium wires
Sizes 10 mm² up to 500 mm²

**Insulation** : Black Polyvinyl chloride (PVC)

## TECHNICAL DATA

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

**Testing voltage** : 2,500 Volts
**Reference standard** : TIS 293-2541, Table 2

## APPLICATION

For low voltage overhead distribution line

| Nominal cross sectional area ($mm^2$) | Actual cross sectional area ($mm^2$) | Minimum number of wires (No.) | Conductor diameter approx. (mm) | Insulation thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 70°C minimum (MΩ-km) | Breaking strength of conductor minimum (N) | Continuous currunt rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10 | 9.64 | 6 | 3.72 | 1.1 | 6.3 | 3.08 | 0.0084 | 1,768 | 52 | 50 | 500/C |
| 16 | 15.55 | 6 | 4.69 | 1.1 | 7.2 | 1.91 | 0.0068 | 2,734 | 69 | 75 | 500/C |
| 25 | 24.75 | 6 | 5.90 | 1.3 | 8.8 | 1.20 | 0.0064 | 4,120 | 93 | 110 | 300/C |
| 35 | 34.21 | 6 | 6.95 | 1.3 | 9.9 | 0.868 | 0.0056 | 5,591 | 115 | 150 | 300/C |
| 50 | 46.32 | 6 | 8.01 | 1.5 | 11.5 | 0.641 | 0.0059 | 7,313 | 141 | 200 | 200/C |
| 70 | 67.03 | 12 | 9.73 | 1.5 | 13.5 | 0.443 | 0.0050 | 10,420 | 178 | 270 | 100/C |
| 95 | 92.79 | 15 | 11.40 | 1.7 | 15.5 | 0.320 | 0.0047 | 14,098 | 220 | 370 | 100/C |
| 120 | 117.37 | 15 | 12.95 | 1.7 | 17.0 | 0.253 | 0.0042 | 18,518 | 258 | 450 | 100/C |
| 150 | 144.15 | 15 | 14.27 | 1.9 | 18.5 | 0.206 | 0.0042 | 22,457 | 294 | 550 | 500/D |
| 185 | 181.06 | 30 | 15.98 | 2.1 | 21.0 | 0.164 | 0.0042 | 28,974 | 342 | 700 | 500/D |
| 240 | 237.55 | 30 | 18.47 | 2.3 | 24.0 | 0.125 | 0.0040 | 37,506 | 410 | 900 | 500/D |
| 300 | 296.94 | 30 | 20.68 | 2.5 | 26.0 | 0.100 | 0.0038 | 45,642 | 475 | 1,100 | 500/D |
| 400 | 381.67 | 53 | 23.39 | 2.7 | 30.0 | 0.0778 | 0.0036 | 56,992 | 560 | 1,400 | 500/D |
| 500 | 490.81 | 53 | 26.67 | 3.1 | 34.0 | 0.0605 | 0.0037 | 72,195 | 659 | 1,800 | 500/D |

C : Packing in Coil
D : Packing in Drum

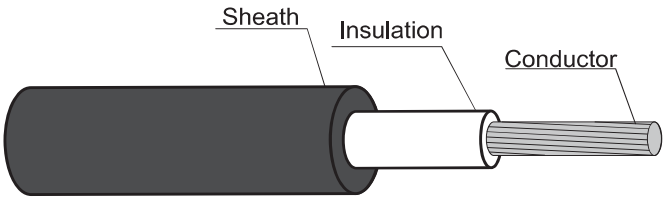
| Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|
| 10 | 3.7006 | 0.4930 | 0.1549 | 3.7039 |
| 16 | 2.2949 | 0.4734 | 0.1487 | 2.2997 |
| 25 | 1.4419 | 0.4676 | 0.1469 | 1.4493 |
| 35 | 1.0430 | 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 |

C

# FD-0.6/1KV-AL-CV

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

**IEC 60502-1**




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Single-core : Sizes 10 mm² up to 500 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
Single-core : 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

**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 | 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 | Continuous current rating in free air at 40°C maximum (A) | | | Continuous current rating in ground at 30°C maximum | Cable weight approx. | Standard Length |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | Spaced (2D) | Touching | Trefoil | | | |
| | ($mm^2$) | (No.) | (mm) | (mm) | (mm) | (Ω/km) | (MΩ-km) | | | | (A) | (kg/km) | (m) |
| 1 | 10 | 6 | 0.7 | 1.4 | 8.5 | 3.08 | 1,250 | 72 | 55 | 54 | 64 | 96 | 500/D |
| | 16 | 6 | 0.7 | 1.4 | 9.4 | 1.91 | 1,000 | 95 | 74 | 72 | 82 | 126 | 500/D |
| | 25 | 6 | 0.9 | 1.4 | 11.0 | 1.20 | 1,050 | 128 | 100 | 97 | 107 | 163 | 500/D |
| | 35 | 6 | 0.9 | 1.4 | 12.0 | 0.868 | 900 | 156 | 122 | 119 | 128 | 196 | 500/D |
| | 50 | 6 | 1.0 | 1.4 | 13.5 | 0.641 | 850 | 189 | 149 | 145 | 151 | 232 | 500/D |
| | 70 | 12 | 1.1 | 1.4 | 15.5 | 0.443 | 800 | 240 | 190 | 184 | 185 | 285 | 500/D |
| | 95 | 15 | 1.1 | 1.5 | 17.0 | 0.320 | 650 | 295 | 236 | 228 | 221 | 342 | 500/D |
| | 120 | 15 | 1.2 | 1.5 | 19.0 | 0.253 | 650 | 345 | 277 | 268 | 252 | 390 | 500/D |
| | 150 | 15 | 1.4 | 1.6 | 21 | 0.206 | 700 | 393 | 317 | 308 | 282 | 436 | 500/D |
| | 185 | 30 | 1.6 | 1.6 | 23 | 0.164 | 700 | 458 | 371 | 360 | 321 | 495 | 500/D |
| | 240 | 30 | 1.7 | 1.7 | 26 | 0.125 | 650 | 548 | 446 | 432 | 373 | 575 | 500/D |
| | 300 | 30 | 1.8 | 1.8 | 29 | 0.100 | 600 | 633 | 518 | 501 | 420 | 649 | 500/D |
| | 400 | 53 | 2.0 | 1.9 | 32 | 0.0778 | 600 | 745 | 612 | 591 | 481 | 743 | 500/D |
| | 500 | 53 | 2.2 | 2.0 | 36 | 0.0605 | 600 | 878 | 724 | 698 | 550 | 850 | 500/D |

D : Packing in drum

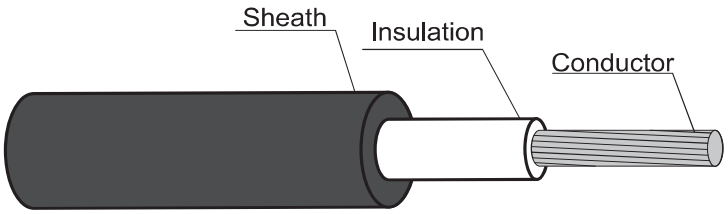
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W
Deep of laying (For cable laid direct in ground) 0.8 m

C

# FD-0.6/1KV-AL-CV

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

**IEC 60502-1**




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Single-core : Sizes 10 mm² up to 500 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
Single-core : 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

**Testing voltage** : 3,500 Volts
**Reference standard** : IEC 60502-1, IEC 60228, IEC 60332-1
IEC 60332-3-24 ( Cat.C )

## APPLICATION

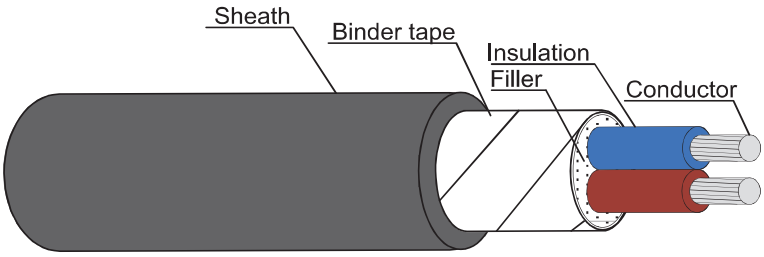
For installation exposed, or in raceway, wet or dry location, or direct burial in ground

| Number of core | Nominal cross sectional area ($mm^2$) | 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 | 0.5529 | 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 |
| | 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 |

C

# FD-0.6/1KV-AL-CV

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




IEC 60502-1

Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
2 cores : Blue, Brown

**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

**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 (mm²) | 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) | 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 | 6 | 0.7 | 1.8 | 15.5 | 3.08 | 1,250 | 61 | 77 | 220 | 500/D |
| | 16 | 6 | 0.7 | 1.8 | 17.0 | 1.91 | 1,000 | 82 | 100 | 290 | 500/D |
| | 25 | 6 | 0.9 | 1.8 | 21 | 1.20 | 1,050 | 110 | 130 | 400 | 500/D |
| | 35 | 6 | 0.9 | 1.8 | 23 | 0.868 | 900 | 134 | 154 | 500 | 500/D |
| | 50 | 6 | 1.0 | 1.8 | 25 | 0.641 | 850 | 164 | 180 | 600 | 500/D |
| | 70 | 12 | 1.1 | 1.8 | 29 | 0.443 | 800 | 208 | 220 | 800 | 500/D |
| | 95 | 15 | 1.1 | 2.0 | 33 | 0.320 | 650 | 254 | 365 | 1,100 | 500/D |
| | 120 | 15 | 1.2 | 2.1 | 37 | 0.253 | 650 | 296 | 300 | 1,300 | 500/D |
| | 150 | 15 | 1.4 | 2.2 | 40 | 0.206 | 700 | 338 | 335 | 1,600 | 500/D |
| | 185 | 30 | 1.6 | 2.3 | 45 | 0.164 | 700 | 392 | 380 | 1,900 | 500/D |
| | 240 | 30 | 1.7 | 2.5 | 51 | 0.125 | 650 | 464 | 440 | 2,500 | 500/D |
| | 300 | 30 | 1.8 | 2.7 | 56 | 0.100 | 600 | 531 | 496 | 3,000 | 500/D |
| | 400 | 53 | 2.0 | 2.9 | 63 | 0.0778 | 600 | 619 | 565 | 3,800 | 500/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) |
|---|---|---|---|---|---|
| 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

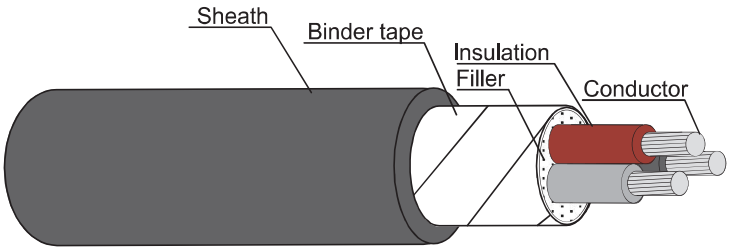
D : Packing in drum

C

# FD-0.6/1KV-AL-CV

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

IEC 60502-1




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
3 cores : Brown, Black, Grey

**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

**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 ($mm^2$) | 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) | 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 | 10 | 6 | 0.7 | 1.8 | 16.0 | 3.08 | 1,250 | 51 | 65 | 260 | 500/D |
| | 16 | 6 | 0.7 | 1.8 | 18.0 | 1.91 | 1,000 | 68 | 84 | 350 | 500/D |
| | 25 | 6 | 0.9 | 1.8 | 22 | 1.20 | 1,050 | 91 | 110 | 490 | 500/D |
| | 35 | 6 | 0.9 | 1.8 | 24 | 0.868 | 900 | 113 | 130 | 650 | 500/D |
| | 50 | 6 | 1.0 | 1.8 | 27 | 0.641 | 850 | 136 | 154 | 750 | 500/D |
| | 70 | 12 | 1.1 | 1.9 | 31 | 0.443 | 800 | 172 | 188 | 1100 | 500/D |
| | 95 | 15 | 1.1 | 2.0 | 35 | 0.320 | 650 | 210 | 225 | 1400 | 500/D |
| | 120 | 15 | 1.2 | 2.1 | 39 | 0.253 | 650 | 248 | 255 | 1700 | 500/D |
| | 150 | 15 | 1.4 | 2.3 | 43 | 0.206 | 700 | 283 | 285 | 2100 | 500/D |
| | 185 | 30 | 1.6 | 2.4 | 48 | 0.164 | 700 | 329 | 325 | 2600 | 500/D |
| | 240 | 30 | 1.7 | 2.6 | 55 | 0.125 | 650 | 389 | 375 | 3300 | 500/D |
| | 300 | 30 | 1.8 | 2.8 | 60 | 0.100 | 600 | 446 | 420 | 4000 | 500/D |
| | 400 | 53 | 2.0 | 3.1 | 68 | 0.078 | 600 | 519 | 480 | 5000 | 500/D |

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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

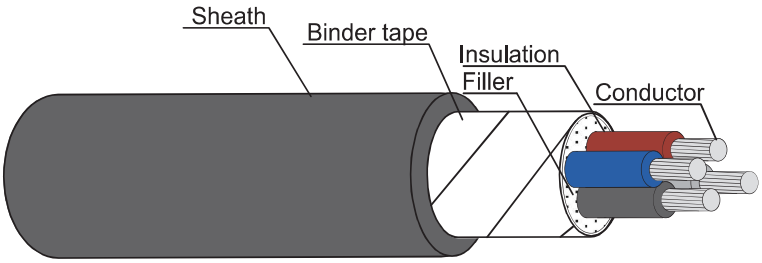
D : Packing in drum

C

# FD-0.6/1KV-AL-CV

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

IEC 60502-1




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
4 cores : Blue, Brow, Black, Grey

**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

**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 ($mm^2$) | 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) | 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 | 6 | 0.7 | 1.8 | 17.5 | 3.08 | 1,250 | 51 | 65 | 310 | 500/D |
| | 16 | 6 | 0.7 | 1.8 | 20 | 1.91 | 1,000 | 68 | 84 | 420 | 500/D |
| | 25 | 6 | 0.9 | 1.8 | 24 | 1.20 | 1,050 | 91 | 110 | 600 | 500/D |
| | 35 | 6 | 0.9 | 1.8 | 27 | 0.868 | 900 | 113 | 130 | 750 | 500/D |
| | 50 | 6 | 1.0 | 1.9 | 30 | 0.641 | 850 | 136 | 154 | 1000 | 500/D |
| | 70 | 12 | 1.1 | 2.0 | 35 | 0.443 | 800 | 172 | 188 | 1400 | 500/D |
| | 95 | 15 | 1.1 | 2.1 | 39 | 0.320 | 650 | 210 | 225 | 1700 | 500/D |
| | 120 | 15 | 1.2 | 2.3 | 44 | 0.253 | 650 | 248 | 255 | 2200 | 500/D |
| | 150 | 15 | 1.4 | 2.4 | 48 | 0.206 | 700 | 283 | 285 | 2600 | 500/D |
| | 185 | 30 | 1.6 | 2.6 | 54 | 0.164 | 700 | 329 | 325 | 3300 | 500/D |
| | 240 | 30 | 1.7 | 2.8 | 61 | 0.125 | 650 | 389 | 375 | 4200 | 500/D |
| | 300 | 30 | 1.8 | 3.0 | 67 | 0.100 | 600 | 446 | 420 | 5000 | 500/D |
| | 400 | 53 | 2.0 | 3.3 | 76 | 0.0778 | 600 | 519 | 480 | 6500 | 300/D |

| Number of cores | Nominal cross sectional area ($mm^2$) | 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

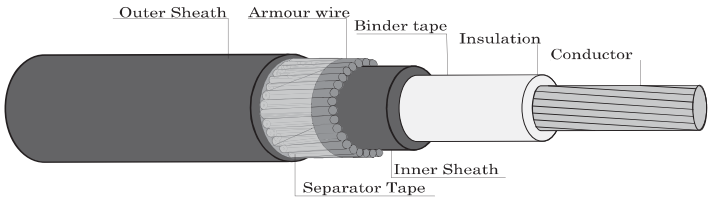
D : Packing in drum

C

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

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

IEC 60502-1




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 500 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
Single-core : Natural (Translucent)

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Aluminium wires

**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

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 (mm²) | Number of wires minimum (No.) | 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 (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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | Spaced | Touching | Trefoil | | | |
| 1 | 10 | 6 | 0.7 | 1.2 | 8.1 | 1.25 | 1.8 | 14.5 | 3.08 | 1,250 | 80 | 66 | 64 | 96 | 270 | 500/D |
| | 16 | 6 | 0.7 | 1.2 | 9.0 | 1.25 | 1.8 | 15.5 | 1.91 | 1,000 | 105 | 86 | 84 | 125 | 310 | 500/D |
| | 25 | 6 | 0.9 | 1.2 | 10.5 | 1.25 | 1.8 | 17.0 | 1.20 | 1,050 | 139 | 114 | 111 | 161 | 380 | 500/D |
| | 35 | 6 | 0.9 | 1.2 | 11.5 | 1.25 | 1.8 | 18.5 | 0.868 | 900 | 169 | 139 | 135 | 194 | 440 | 500/D |
| | 50 | 6 | 1.0 | 1.2 | 13.0 | 1.25 | 1.8 | 19.5 | 0.641 | 850 | 202 | 167 | 162 | 229 | 500 | 500/D |
| | 70 | 12 | 1.1 | 1.2 | 15.0 | 1.25 | 1.8 | 22 | 0.443 | 800 | 253 | 209 | 203 | 281 | 600 | 500/D |
| | 95 | 15 | 1.1 | 1.2 | 16.5 | 1.60 | 1.8 | 24 | 0.320 | 650 | 312 | 258 | 251 | 339 | 800 | 500/D |
| | 120 | 15 | 1.2 | 1.2 | 18.5 | 1.60 | 1.8 | 26 | 0.253 | 650 | 362 | 300 | 291 | 387 | 900 | 500/D |
| | 150 | 15 | 1.4 | 1.2 | 20 | 1.60 | 1.8 | 27 | 0.206 | 700 | 410 | 341 | 331 | 432 | 1,000 | 500/D |
| | 185 | 30 | 1.6 | 1.2 | 22 | 2.00 | 1.9 | 31 | 0.164 | 700 | 479 | 400 | 388 | 492 | 1,300 | 500/D |
| | 240 | 30 | 1.7 | 1.2 | 25 | 2.00 | 1.9 | 33 | 0.125 | 650 | 569 | 476 | 461 | 573 | 1,600 | 500/D |
| | 300 | 30 | 1.8 | 1.2 | 28 | 2.00 | 2.0 | 36 | 0.100 | 600 | 655 | 550 | 532 | 648 | 1,900 | 500/D |
| | 400 | 53 | 2.0 | 1.2 | 31 | 2.00 | 2.2 | 40 | 0.0778 | 600 | 766 | 644 | 624 | 741 | 2,300 | 500/D |
| | 500 | 53 | 2.2 | 1.2 | 34 | 2.00 | 2.3 | 43 | 0.0605 | 600 | 897 | 756 | 731 | 848 | 2,800 | 500/D |

C

| 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 | 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 |

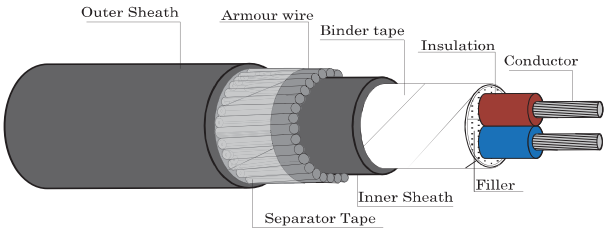
**Remark** : Thermal resistivity of soil 1.2 K.m/W or °C.m/W
Deep of laying (For cable laid direct in ground) 0.8 m

D : Packing in drum

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

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

**IEC 60502-1**




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
2 cores : Blue, Brown

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Galvanized steel wires

**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

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 (mm²) | Number of wires minimum (No.) | 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 (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 | 6 | 0.7 | 1.2 | 14.0 | 1.25 | 1.8 | 20 | 3.08 | 1,250 | 64 | 72 | 700 | 500/D |
| | 16 | 6 | 0.7 | 1.2 | 16.0 | 1.60 | 1.8 | 23 | 1.91 | 1,000 | 86 | 94 | 950 | 500/D |
| | 25 | 6 | 0.9 | 1.2 | 19.0 | 1.60 | 1.8 | 26 | 1.20 | 1,050 | 114 | 121 | 1200 | 500/D |
| | 35 | 6 | 0.9 | 1.2 | 22 | 2.00 | 1.8 | 29 | 0.868 | 900 | 141 | 146 | 1600 | 500/D |
| | 50 | 6 | 1.0 | 1.2 | 24 | 2.00 | 1.9 | 32 | 0.641 | 850 | 169 | 172 | 1800 | 500/D |
| | 70 | 12 | 1.1 | 1.2 | 28 | 2.00 | 2.0 | 37 | 0.443 | 800 | 213 | 211 | 2,200 | 500/D |
| | 95 | 15 | 1.1 | 1.2 | 31 | 2.00 | 2.1 | 40 | 0.320 | 650 | 260 | 252 | 2,600 | 500/D |
| | 120 | 15 | 1.2 | 1.2 | 35 | 2.00 | 2.3 | 44 | 0.253 | 650 | 302 | 286 | 3,100 | 500/D |
| | 150 | 15 | 1.4 | 1.3 | 38 | 2.50 | 2.4 | 49 | 0.206 | 700 | 344 | 320 | 3,900 | 500/D |
| | 185 | 30 | 1.6 | 1.3 | 43 | 2.50 | 2.6 | 54 | 0.164 | 700 | 396 | 362 | 4,600 | 500/D |
| | 240 | 30 | 1.7 | 1.4 | 49 | 2.50 | 2.7 | 60 | 0.125 | 650 | 469 | 419 | 5,500 | 500/D |
| | 300 | 30 | 1.8 | 1.5 | 54 | 2.50 | 2.9 | 65 | 0.100 | 600 | 537 | 472 | 6,500 | 500/D |
| | 400 | 53 | 2.0 | 1.7 | 61 | 2.50 | 3.2 | 73 | 0.0778 | 600 | 622 | 536 | 7,500 | 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) |
|---|---|---|---|---|---|
| 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

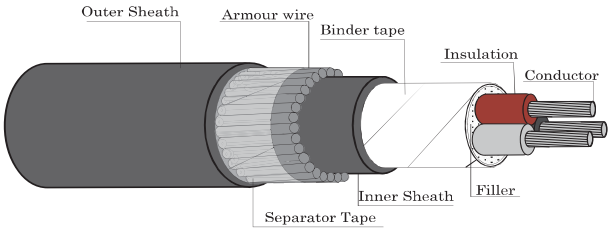
D : Packing in drum

C

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

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

IEC 60502-1




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
3 cores : Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Galvanized steel wires

**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

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 ($mm^2$) | Number of wires minimum (No.) | 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 (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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 6 | 0.7 | 1.2 | 15.0 | 1.25 | 1.8 | 21 | 3.08 | 1,250 | 55 | 61 | 750 | 500/D |
| | 16 | 6 | 0.7 | 1.2 | 17.0 | 1.60 | 1.8 | 24 | 1.91 | 1,000 | 73 | 79 | 1050 | 500/D |
| | 25 | 6 | 0.9 | 1.2 | 21 | 1.60 | 1.8 | 28 | 1.20 | 1,050 | 97 | 102 | 1350 | 500/D |
| | 35 | 6 | 0.9 | 1.2 | 23 | 2.00 | 1.8 | 31 | 0.868 | 900 | 120 | 123 | 1750 | 500/D |
| | 50 | 6 | 1.0 | 1.2 | 26 | 2.00 | 2.0 | 34 | 0.641 | 850 | 144 | 145 | 2100 | 500/D |
| | 70 | 12 | 1.1 | 1.2 | 30 | 2.00 | 2.1 | 39 | 0.443 | 800 | 181 | 177 | 2,600 | 500/D |
| 3 | 95 | 15 | 1.1 | 1.2 | 33 | 2.00 | 2.2 | 42 | 0.320 | 650 | 221 | 212 | 3,000 | 500/D |
| | 120 | 15 | 1.2 | 1.2 | 37 | 2.50 | 2.3 | 48 | 0.253 | 650 | 258 | 242 | 4,000 | 500/D |
| | 150 | 15 | 1.4 | 1.3 | 41 | 2.50 | 2.5 | 52 | 0.206 | 700 | 292 | 269 | 4,600 | 500/D |
| | 185 | 30 | 1.6 | 1.4 | 46 | 2.50 | 2.7 | 58 | 0.164 | 700 | 336 | 304 | 5,500 | 500/D |
| | 240 | 30 | 1.7 | 1.5 | 52 | 2.50 | 2.9 | 64 | 0.125 | 650 | 397 | 351 | 6,500 | 500/D |
| | 300 | 30 | 1.8 | 1.6 | 58 | 2.50 | 3.0 | 70 | 0.100 | 600 | 454 | 394 | 7,500 | 300/D |
| | 400 | 53 | 2.0 | 1.8 | 65 | 3.15 | 3.4 | 80 | 0.0778 | 600 | 524 | 444 | 10,000 | 300/D |

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (Ω/km) |
|---|---|---|---|---|---|
| | 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 |
| 3 | 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

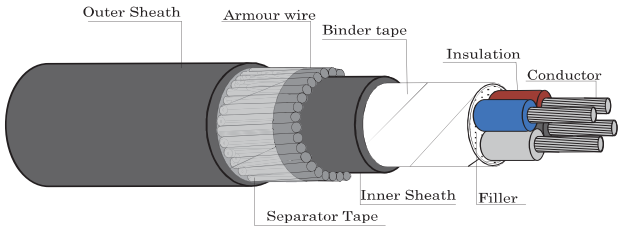
D : Packing in drum

C

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

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

**IEC 60502-1**




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
4 cores : Blue, Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : Galvanized steel wires

**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

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 ($mm^2$) | Number of wires minimum (No.) | 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 (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 | 6 | 0.7 | 1.2 | 16.0 | 1.60 | 1.8 | 23 | 3.08 | 1,250 | 55 | 61 | 1,000 | 500/D |
| | 16 | 6 | 0.7 | 1.2 | 18.5 | 1.60 | 1.8 | 26 | 1.91 | 1,000 | 73 | 79 | 1,200 | 500/D |
| | 25 | 6 | 0.9 | 1.2 | 22 | 2.00 | 1.8 | 31 | 1.20 | 1,050 | 97 | 102 | 1,700 | 500/D |
| | 35 | 6 | 0.9 | 1.2 | 25 | 2.00 | 1.9 | 34 | 0.868 | 900 | 120 | 123 | 2,000 | 500/D |
| | 50 | 6 | 1.0 | 1.2 | 28 | 2.00 | 2.1 | 37 | 0.641 | 850 | 144 | 145 | 2,400 | 500/D |
| | 70 | 12 | 1.1 | 1.2 | 33 | 2.00 | 2.2 | 42 | 0.443 | 800 | 181 | 177 | 3,000 | 500/D |
| | 95 | 15 | 1.1 | 1.2 | 37 | 2.50 | 2.3 | 47 | 0.320 | 650 | 221 | 212 | 4,000 | 500/D |
| | 120 | 15 | 1.2 | 1.3 | 42 | 2.50 | 2.5 | 52 | 0.253 | 650 | 258 | 242 | 4,700 | 500/D |
| | 150 | 15 | 1.4 | 1.4 | 46 | 2.50 | 2.7 | 57 | 0.206 | 700 | 292 | 269 | 5,500 | 500/D |
| | 185 | 30 | 1.6 | 1.5 | 52 | 2.50 | 2.8 | 63 | 0.164 | 700 | 336 | 304 | 6,500 | 500/D |
| | 240 | 30 | 1.7 | 1.6 | 58 | 2.50 | 3.1 | 71 | 0.125 | 650 | 397 | 351 | 8,000 | 300/D |
| | 300 | 30 | 1.8 | 1.7 | 65 | 3.15 | 3.3 | 79 | 0.100 | 600 | 454 | 394 | 10,000 | 300/D |
| | 400 | 53 | 2.0 | 1.9 | 73 | 3.15 | 3.4 | 87 | 0.0778 | 600 | 524 | 444 | 12,000 | 200/D |

| Number of cores | Nominal cross sectional area ($mm^2$) | 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

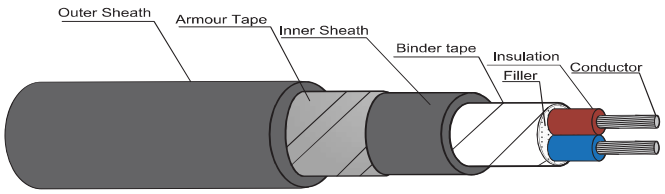
D : Packing in drum

C

# 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**

IEC 60502-1




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
2 cores : Blue, Brown

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : 2 Layers galvanized steel 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

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 (mm²) | Number of wires minimum (No.) | 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 | 6 | 0.7 | 1.2 | 14.0 | 0.2 | 1.8 | 19.0 | 3.08 | 1,250 | 63 | 71 | 500 | 500/D |
| | 16 | 6 | 0.7 | 1.2 | 16.0 | 0.2 | 1.8 | 21 | 1.91 | 1,000 | 84 | 93 | 600 | 500/D |
| | 25 | 6 | 0.9 | 1.2 | 19.0 | 0.2 | 1.8 | 24 | 1.20 | 1,050 | 111 | 120 | 750 | 500/D |
| | 35 | 6 | 0.9 | 1.2 | 21 | 0.2 | 1.8 | 27 | 0.868 | 900 | 136 | 144 | 900 | 500/D |
| | 50 | 6 | 1.0 | 1.2 | 24 | 0.2 | 1.9 | 29 | 0.641 | 850 | 164 | 170 | 1,100 | 500/D |
| | 70 | 12 | 1.1 | 1.2 | 28 | 0.2 | 2.0 | 33 | 0.443 | 800 | 207 | 208 | 1,400 | 500/D |
| | 95 | 15 | 1.1 | 1.2 | 31 | 0.5 | 2.1 | 38 | 0.320 | 650 | 256 | 250 | 1,900 | 500/D |
| | 120 | 15 | 1.2 | 1.2 | 35 | 0.5 | 2.3 | 42 | 0.253 | 650 | 297 | 285 | 2,300 | 500/D |
| | 150 | 15 | 1.4 | 1.3 | 39 | 0.5 | 2.4 | 46 | 0.206 | 700 | 337 | 318 | 2,700 | 500/D |
| | 185 | 30 | 1.6 | 1.3 | 43 | 0.5 | 2.6 | 51 | 0.164 | 700 | 388 | 359 | 3,200 | 500/D |
| | 240 | 30 | 1.7 | 1.4 | 49 | 0.5 | 2.8 | 57 | 0.125 | 650 | 461 | 417 | 3,900 | 500/D |
| | 300 | 30 | 1.8 | 1.5 | 54 | 0.5 | 2.9 | 62 | 0.100 | 600 | 530 | 470 | 4,600 | 500/D |
| | 400 | 53 | 2.0 | 1.7 | 61 | 0.5 | 3.2 | 70 | 0.0778 | 600 | 615 | 535 | 5,500 | 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) |
|---|---|---|---|---|---|
| 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

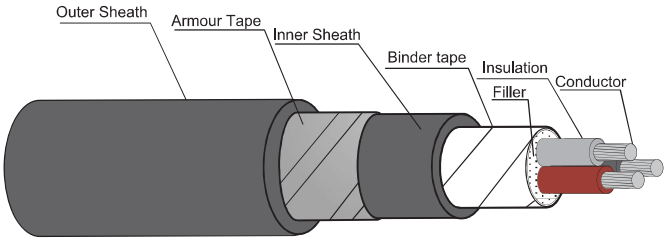
D : Packing in drum

C

# 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**

**IEC 60502-1**




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
3 cores : Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : 2 Layers galvanized steel 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

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 ($mm^2$) | Number of wires minimum (No.) | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3 | 10 | 6 | 0.7 | 1.2 | 15.0 | 0.2 | 1.8 | 20 | 3.08 | 1,250 | 53 | 60 | 550 | 500/D |
| | 16 | 6 | 0.7 | 1.2 | 17.0 | 0.2 | 1.8 | 22 | 1.91 | 1,000 | 71 | 78 | 700 | 500/D |
| | 25 | 6 | 0.9 | 1.2 | 21 | 0.2 | 1.8 | 26 | 1.20 | 1,050 | 95 | 101 | 800 | 500/D |
| | 35 | 6 | 0.9 | 1.2 | 23 | 0.2 | 1.8 | 28 | 0.868 | 900 | 116 | 121 | 1,100 | 500/D |
| | 50 | 6 | 1.0 | 1.2 | 26 | 0.2 | 1.9 | 31 | 0.641 | 850 | 140 | 143 | 1,300 | 500/D |
| | 70 | 12 | 1.1 | 1.2 | 30 | 0.2 | 2.1 | 36 | 0.443 | 800 | 176 | 176 | 1,700 | 500/D |
| | 95 | 15 | 1.1 | 1.2 | 33 | 0.5 | 2.2 | 40 | 0.320 | 650 | 217 | 211 | 2,300 | 500/D |
| | 120 | 15 | 1.2 | 1.2 | 37 | 0.5 | 2.4 | 44 | 0.253 | 650 | 252 | 240 | 2,700 | 500/D |
| | 150 | 15 | 1.4 | 1.3 | 41 | 0.5 | 2.5 | 49 | 0.206 | 700 | 287 | 268 | 3,200 | 500/D |
| | 185 | 30 | 1.6 | 1.4 | 46 | 0.5 | 2.7 | 54 | 0.164 | 700 | 331 | 304 | 3,900 | 500/D |
| | 240 | 30 | 1.7 | 1.5 | 52 | 0.5 | 2.9 | 61 | 0.125 | 650 | 393 | 352 | 4,900 | 500/D |
| | 300 | 30 | 1.8 | 1.6 | 58 | 0.5 | 3.1 | 67 | 0.100 | 600 | 451 | 397 | 6,000 | 500/D |
| | 400 | 53 | 2.0 | 1.8 | 65 | 0.5 | 3.3 | 75 | 0.0778 | 600 | 525 | 453 | 7,000 | 300/D |

| Number of cores | Nominal cross sectional area ($mm^2$) | A.C.Resistance R (Ω/km) | Inductance L (mH/km) | Reactance XL (Ω/km) | Impedance Z (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

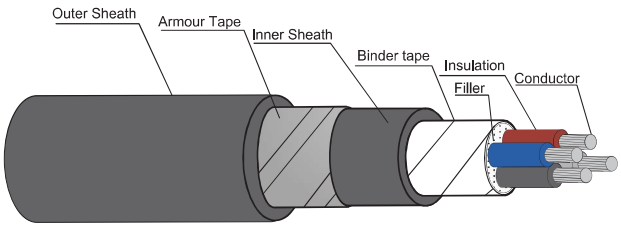
D : Packing in drum

C

# 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**

**IEC 60502-1**




Category C
FLAME RETARDANT

## CABLE STRUCTURE

**Conductor** : Compacted stranded hard drawn aluminium
Multi-core : Sizes 10 mm² up to 400 mm²

**Insulation** : Cross-Linked polyethylene (XLPE)

**Core identification**
4 cores : Blue, Brown, Black, Grey

**Inner Sheath** : Black polyvinyl chloride (PVC)

**Armor** : 2 Layers galvanized steel 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

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 (mm²) | Number of wires minimum (No.) | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 10 | 6 | 0.7 | 1.2 | 16.0 | 0.2 | 1.8 | 21 | 3.08 | 1,250 | 53 | 60 | 650 | 500/D |
| | 16 | 6 | 0.7 | 1.2 | 18.5 | 0.2 | 1.8 | 24 | 1.91 | 1,000 | 71 | 78 | 800 | 500/D |
| | 25 | 6 | 0.9 | 1.2 | 23 | 0.2 | 1.8 | 28 | 1.20 | 1,050 | 95 | 101 | 1,050 | 500/D |
| | 35 | 6 | 0.9 | 1.2 | 25 | 0.2 | 1.9 | 31 | 0.868 | 900 | 116 | 121 | 1,250 | 500/D |
| | 50 | 6 | 1.0 | 1.2 | 28 | 0.2 | 2.0 | 34.0 | 0.641 | 850 | 140 | 143 | 1,600 | 500/D |
| | 70 | 12 | 1.1 | 1.2 | 33 | 0.5 | 2.2 | 40 | 0.443 | 800 | 176 | 176 | 2,300 | 500/D |
| | 95 | 15 | 1.1 | 1.2 | 37 | 0.5 | 2.3 | 44 | 0.320 | 650 | 217 | 211 | 2,800 | 500/D |
| | 120 | 15 | 1.2 | 1.3 | 42 | 0.5 | 2.5 | 49 | 0.253 | 650 | 252 | 240 | 3,300 | 500/D |
| | 150 | 15 | 1.4 | 1.4 | 46 | 0.5 | 2.7 | 54 | 0.206 | 700 | 287 | 268 | 3,400 | 500/D |
| | 185 | 30 | 1.6 | 1.5 | 52 | 0.5 | 2.9 | 60 | 0.164 | 700 | 331 | 304 | 4,800 | 500/D |
| | 240 | 30 | 1.7 | 1.6 | 58 | 0.5 | 3.1 | 67 | 0.125 | 650 | 393 | 352 | 6,000 | 500/D |
| | 300 | 30 | 1.8 | 1.7 | 65 | 0.5 | 3.3 | 74 | 0.100 | 600 | 451 | 397 | 7,000 | 300/D |
| | 400 | 53 | 2.0 | 1.9 | 73 | 0.5 | 3.6 | 83 | 0.0778 | 600 | 525 | 453 | 9,000 | 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

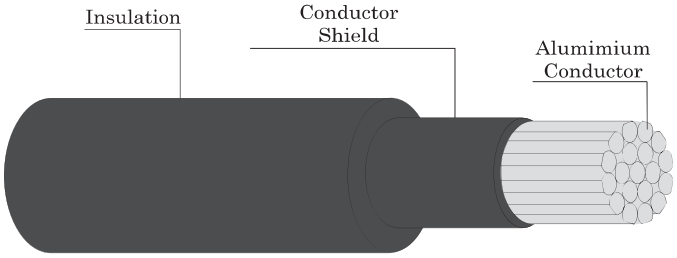
D : Packing in drum

C

# 24KV-OC

## 24KV 90°C PARTIAL INSULATED CABLE

ICEA S-66-524
ICEA S-93-639




### CABLE STRUCTURE

**Conductor** : Compact round stranded hard drawn aluminium wires
Sizes 35 mm² up to 185mm²

**Conductor Screen** : Semi-Conductive Cross-linked polyethylene (XLPE) compundoss-linked

**Insulation** : Black Cross-linked polyethylene (XLPE)

### TECHNICAL DATA

**Classification** : Maximum conductor temperature 90 °C
: Circuit voltage not exceeding 24,000 Volts

**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 ($mm^2$) | Number of wire minimum (No.) | Diameter of Conductor Approx. (mm) | Insulation thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 15.6°C minimum (MΩ-km) | Breaking strength of conductor minimum (N) | Continuous currunt rating in free air at 40° C maximum (A) | Cable weight approx. (kg/km) | Standard Length (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 |

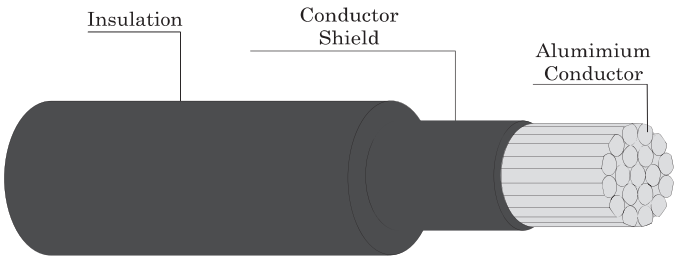
D : Packing in Drum

C

# 33KV-OC

## 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

**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 ($mm^2$) | Number of wire minimum (No.) | Diameter of Conductor Approx. (mm) | Insulation thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 15.6°C minimum (MΩ-km) | Breaking strength of conductor minimum (N) | Continuous currunt rating in free air at 40° C maximum (A) | Cable weight approx. (kg/km) | Standard Length (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 |

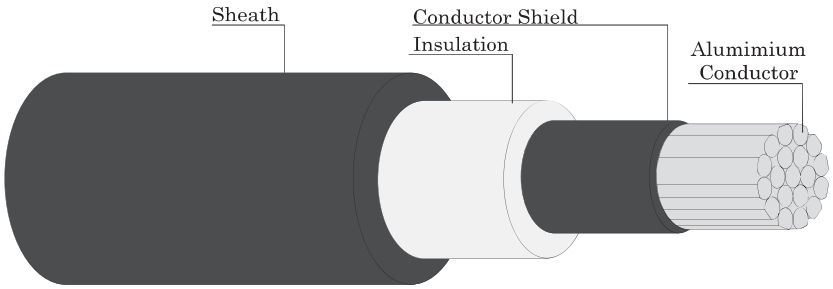
D : Packing in Drum

C

# 15KV-CC

## 15KV 90°C SPACED AERIAL 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** : 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

**Testing voltage** : 27,000 Volts

**Reference standard** : ICEA S-66-524, ICEA S-93-639

### APPLICATION

For aerial power transmission and distribution line

| Nominal cross sectional area ($mm^2$) | Number of wire minimum (No.) | Diameter of Conductor Approx. (mm) | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 15.6°C minimum (MΩ-km) | Breaking strength of conductor minimum (N) | Continuous currunt rating in free air at 40° C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | 6 | 7.05 | 1.91 | 1.91 | 16.5 | 0.868 | 1,750 | 5,591 | 164 | 260 | 500/D |
| 50 | 6 | 8.11 | 1.91 | 1.91 | 18.0 | 0.641 | 1,550 | 7,313 | 198 | 320 | 500/D |
| 70 | 12 | 9.73 | 1.91 | 1.91 | 19.5 | 0.443 | 1,400 | 10,420 | 250 | 390 | 500/D |
| 95 | 15 | 11.43 | 1.91 | 1.91 | 21.0 | 0.320 | 1,250 | 14,098 | 306 | 490 | 500/D |
| 120 | 15 | 13.05 | 1.91 | 1.91 | 23.0 | 0.253 | 1,150 | 18,518 | 355 | 600 | 500/D |
| 150 | 15 | 14.37 | 1.91 | 1.91 | 24.0 | 0.206 | 1,050 | 22,457 | 405 | 650 | 500/D |
| 185 | 30 | 16.08 | 1.91 | 1.91 | 26.0 | 0.164 | 980 | 28,974 | 468 | 800 | 500/D |
| 240 | 30 | 18.57 | 1.91 | 1.91 | 28.0 | 0.125 | 850 | 37,506 | 560 | 1000 | 500/D |

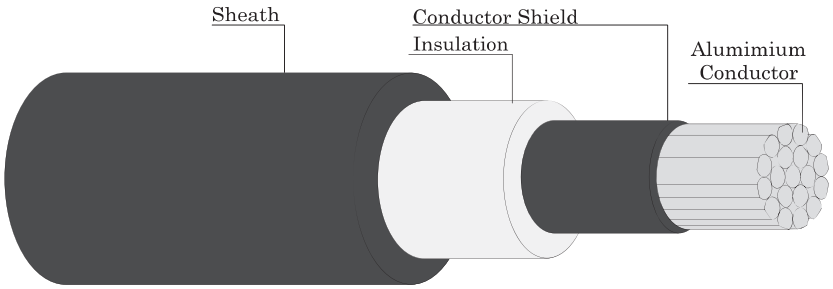
D : Packing in Drum

C

# 25KV-CC

## 25KV 90°C SPACED AERIAL CABLE

ICEA S-66-524
ICEA S-93-639
TIS 2341-2555




### 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

**Testing voltage** : 38,000 Volts

**Reference standard** : ICEA S-66-524, ICEA S-93-639

### APPLICATION

For aerial power transmission and distribution line

| Nominal cross sectional area ($mm^2$) | Number of wire minimum (No.) | Diameter of Conductor Approx. (mm) | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 15.6°C minimum (MΩ-km) | Breaking strength of conductor minimum (N) | Continuous currunt rating in free air at 40° C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 35 | 6 | 7.05 | 3.175 | 3.175 | 22 | 0.868 | 2,500 | 5,591 | 165 | 400 | 500/D |
| 50 | 6 | 8.11 | 3.175 | 3.175 | 23 | 0.641 | 2,250 | 7,313 | 199 | 460 | 500/D |
| 70 | 12 | 9.73 | 3.175 | 3.175 | 25 | 0.443 | 2,050 | 10,420 | 250 | 550 | 500/D |
| 95 | 15 | 11.43 | 3.175 | 3.175 | 26 | 0.320 | 1,850 | 14,098 | 305 | 650 | 500/D |
| 120 | 15 | 13.05 | 3.175 | 3.175 | 28 | 0.253 | 1,700 | 18,518 | 353 | 750 | 500/D |
| 150 | 15 | 14.37 | 3.175 | 3.175 | 29 | 0.206 | 1,600 | 22,457 | 402 | 850 | 500/D |
| 185 | 30 | 16.08 | 3.175 | 3.175 | 31 | 0.164 | 1,450 | 28,974 | 464 | 1,000 | 500/D |
| 240 | 30 | 18.57 | 3.175 | 3.175 | 33 | 0.125 | 1,300 | 37,506 | 553 | 1,200 | 500/D |

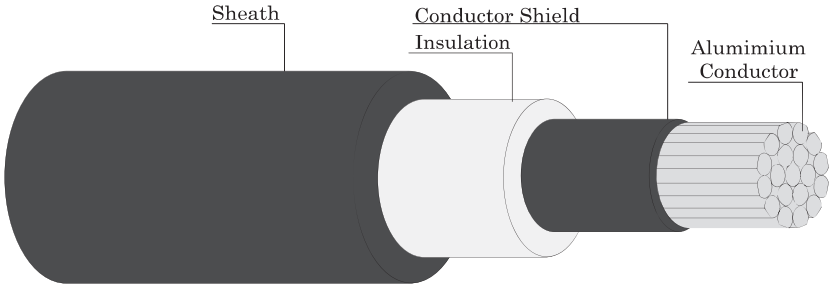
D : Packing in Drum

C

# 35KV-CC

## 35KV 90°C SPACED AERIAL CABLE

ICEA S-66-524
ICEA S-93-639
TIS 2341-2555




### 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

**Testing voltage** : 49,000 Volts

**Reference standard** : ICEA S-66-524, ICEA S-93-639

### APPLICATION

For aerial power transmission and distribution line

| Nominal cross sectional area ($mm^2$) | Number of wire minimum (No.) | Diameter of Conductor Approx. (mm) | Insulation thickness nominal (mm) | Sheath thickness nominal (mm) | Overall diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Insulation resistance at 15.6°C minimum (MΩ-km) | Breaking strength of conductor minimum (N) | Continuous currunt rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 50 | 6 | 8.11 | 4.445 | 3.175 | 26 | 0.641 | 2,500 | 7,313 | 200 | 550 | 500/D |
| 70 | 12 | 9.73 | 4.445 | 3.175 | 27 | 0.443 | 2,300 | 10,420 | 251 | 650 | 500/D |
| 95 | 15 | 11.43 | 4.445 | 3.175 | 29 | 0.320 | 2,100 | 14,098 | 306 | 750 | 500/D |
| 120 | 15 | 13.05 | 4.445 | 3.175 | 31 | 0.253 | 1,950 | 18,518 | 355 | 900 | 500/D |
| 150 | 15 | 14.37 | 4.445 | 3.175 | 32 | 0.206 | 1,800 | 22,457 | 403 | 1,000 | 500/D |
| 185 | 30 | 16.08 | 4.445 | 3.175 | 34 | 0.164 | 1,690 | 28,974 | 464 | 1,100 | 500/D |
| 240 | 30 | 18.57 | 4.445 | 3.175 | 36 | 0.125 | 1,500 | 37,506 | 552 | 1,400 | 500/D |

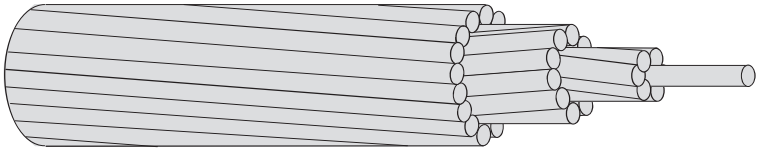
D : Packing in Drum

C

# AAC

## ALL ALUMINIUM STRANDED CONDUCTOR

TIS 85-2548



### CABLE STRUCTURE

**Conductor** : Hard drawn copper wires, concentric stranded conductor
Size 16 $mm^2$ up to 1,000 $mm^2$

### TECHNICAL DATA

**Reference standard** : TIS 85-2548

### APPLICATION

For overhead transmission and distrubution line

| Nominal cross sectional area ($mm^2$) | Number and diameter of wires (No./mm) | Conductor diameter approx. (mm) | Conductor resistance at 20°C maximum (Ω/km) | Breaking strength (kgf) | Continuous currunt rating in free air at 40°C maximum (A) | Cable weight approx. (kg/km) | Standard Length (m) |
|---|---|---|---|---|---|---|---|
| 16 | 7/1.70 | 5.10 | 1.802 | 290 | 110 | 44 | 3000/D |
| 25 | 7/2.14 | 6.42 | 1.138 | 440 | 145 | 70 | 3000/D |
| 35 | 7/2.52 | 7.56 | 0.820 | 585 | 180 | 95 | 3000/D |
| 50 | 7/3.02 | 9.06 | 0.571 | 805 | 225 | 140 | 2500/D |
| 50 | 19/1.83 | 9.15 | 0.5758 | 890 | 225 | 140 | 2500/D |
| 70 | 19/2.15 | 10.75 | 0.4171 | 1,205 | 270 | 190 | 2500/D |
| 95 | 19/2.52 | 12.60 | 0.3036 | 1,585 | 340 | 260 | 2500/D |
| 120 | 19/2.85 | 14.25 | 0.2374 | 1,980 | 390 | 330 | 2000/D |
| 150 | 37/2.25 | 15.75 | 0.1960 | 2,570 | 455 | 400 | 2000/D |
| 185 | 37/2.52 | 17.64 | 0.1563 | 3,085 | 550 | 500 | 2000/D |
| 240 | 61/2.25 | 20.25 | 0.1192 | 4,015 | 625 | 650 | 1500/D |
| 300 | 91/2.52 | 22.68 | 0.0950 | 4,820 | 710 | 850 | 1500/D |
| 400 | 61/2.85 | 25.65 | 0.0743 | 6,025 | 855 | 1100 | 1000/D |
| 500 | 61/3.25 | 29.25 | 0.0571 | 7,695 | 990 | 1400 | 1000/D |
| 625 | 91/2.96 | 32.6 | 0.0463 | 9,694 | 1140 | 1700 | 500/D |
| 800 | 91/3.35 | 36.85 | 0.0361 | 12,055 | 1340 | 2200 | 500/D |
| 1000 | 91/3.74 | 41.14 | 0.0290 | 14,845 | 1540 | 2800 | 500/D |

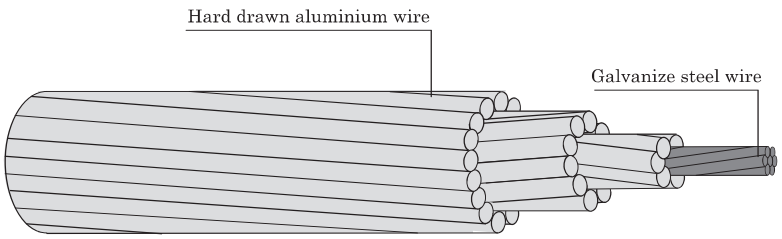
D : Packing in Drum

C

# ACSR

## ALL ALUMINIUM CONDUCTOR STEEL REINFORCED

TIS 85-2548




## CABLE STRUCTURE

**Conductor** : Hard drawn copper wires, concentric stranded conductor
Size 16 mm² up to 680 mm²

**Steel Core** : Galvanized steel (Zinc coated), solid and concentric stranded
Size 2.5 mm² up to 85 mm²

## TECHNICAL DATA

**Reference standard** : TIS 85-2548

## APPLICATION

For overhead transmission and distrubution line

| Nominal cross sectional area | Aluminium | | Steel wire | | Overall conductor diameter approx. | Conductor resistance at 20°C maximum | Breaking strength | Continuous currunt rating in free air at 40°C maximum | Cable weight approx. | Standard length |
|---|---|---|---|---|---|---|---|---|---|---|
| | Number and approx. diameter of wires | cross sectional area | Number and approx. diameter of wires | cross sectional area | | | | | | |
| ($mm^2$) | (No./mm) | ($mm^2$) | (No./mm) | ($mm^2$) | (mm) | (Ω/km) | (kgf) | (A) | (kg/km) | (m) |
| 16/2.5 | 6/1.80 | 15.3 | 1/1.80 | 2.54 | 5.40 | 1.880 | 592 | 90 | 60 | 4000/D |
| 25/4 | 6/2.25 | 23.9 | 1/2.25 | 3.98 | 6.75 | 1.203 | 916 | 125 | 95 | 4000/D |
| 35/6 | 6/2.70 | 34.4 | 1/2.70 | 5.73 | 8.10 | 0.8353 | 1,265 | 145 | 140 | 3000/D |
| 50/8 | 6/3.20 | 48.3 | 1/3.20 | 8.04 | 9.60 | 0.5947 | 1,716 | 170 | 200 | 3000/D |
| 50/30 | 12/2.33 | 51.2 | 7/2.33 | 29.85 | 11.50 | 0.5644 | 4,380 | 170 | 380 | 3000/D |
| 70/12 | 26/1.85 | 69.9 | 7/1.44 | 11.40 | 11.50 | 0.4131 | 2,676 | 290 | 280 | 3000/D |
| 95/15 | 26/2.15 | 94.4 | 7/1.67 | 15.33 | 13.50 | 0.3058 | 3,565 | 350 | 380 | 3000/D |
| 95/55 | 12/3.20 | 96.5 | 7/3.20 | 56.30 | 16.00 | 0.2993 | 7,965 | 350 | 700 | 3000/D |
| 120/20 | 26/2.44 | 121.6 | 7/1.90 | 19.85 | 15.50 | 0.2375 | 4,555 | 410 | 490 | 2000/D |
| 120/70 | 12/3.60 | 122.1 | 7/3.60 | 71.25 | 18.00 | 0.2365 | 10,034 | 410 | 900 | 2000/D |
| 125/30 | 30/2.33 | 127.9 | 7/2.33 | 29.85 | 16.00 | 0.2259 | 5,759 | 425 | 600 | 2000/D |
| 150/25 | 26/2.70 | 148.9 | 7/2.10 | 24.25 | 17.00 | 0.1939 | 5,513 | 470 | 600 | 2000/D |
| 170/40 | 30/2.70 | 171.8 | 7/2.70 | 40.08 | 18.50 | 0.1683 | 7,675 | 520 | 800 | 2000/D |
| 185/30 | 26/3.00 | 183.8 | 7/2.33 | 29.85 | 18.50 | 0.1571 | 6,618 | 535 | 750 | 2000/D |
| 210/35 | 26/3.20 | 209.1 | 7/2.49 | 34.09 | 20.00 | 0.1381 | 7,489 | 590 | 850 | 1500/D |
| 210/50 | 30/3.00 | 212.1 | 7/3.00 | 49.48 | 21.00 | 0.1363 | 9,390 | 610 | 1,000 | 1500/D |
| 230/10 | 24/3.50 | 230.9 | 7/2.33 | 29.85 | 21.00 | 0.1250 | 7,313 | 630 | 900 | 1500/D |
| 240/40 | 26/3.45 | 243.1 | 7/2.68 | 39.49 | 21.00 | 0.1188 | 8,640 | 645 | 1,000 | 1500/D |
| 265/35 | 24/3.74 | 263.7 | 7/2.49 | 34.10 | 22.00 | 0.1095 | 8,307 | 680 | 1,000 | 1000/D |
| 300/50 | 26/3.86 | 304.3 | 7/3.00 | 49.50 | 24.00 | 0.0949 | 10,702 | 740 | 1,200 | 1000/D |
| 305/40 | 54/2.68 | 304.6 | 7/2.68 | 39.50 | 24.00 | 0.0949 | 9,942 | 740 | 1,200 | 1000/D |
| 380/50 | 54/3.00 | 381.7 | 7/3.00 | 49.50 | 27.00 | 0.0758 | 12,312 | 840 | 1,500 | 1000/D |
| 435/55 | 54/3.20 | 434.3 | 7/3.20 | 56.30 | 28.00 | 0.0666 | 13,673 | 900 | 1,700 | 1000/D |
| 490/65 | 54/3.40 | 490.3 | 7/3.40 | 63.60 | 30.00 | 0.0590 | 15,343 | 960 | 1,900 | 1000/D |
| 550/70 | 54/3.60 | 549.7 | 7/3.60 | 71.30 | 32.00 | 0.0526 | 17,096 | 1,020 | 2,100 | 500/D |
| 680/85 | 54/4.00 | 678.6 | 19/2.40 | 86.00 | 36.00 | 0.0426 | 12,040 | 1,150 | 2,600 | 500/D |

D : Packing in Drum

C

# Electrical Insulation Tape



D

# VTA

TIS 386-2531

## 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 386-2531

**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 | | |
|---|---|---|
| 1) Electrolytic corrosion after 24h | | |
| at 27 ± 2° Cand 93 ± 2% relative humidity | (Ω) | ≥ $10^{11}$ |
| 2) Penetration at elevated temperature | (°C) | ≥ 50 |
| 3) Flammability | | non-ignitable or |
| | | self-extinguishing |
| 4) Thermal endurance | | no-crack |
| 5) Tensile strength | (N/10 mm width/mm thick.) | ≥ 150 |
| 6) Adhesion to steel | (N/10 mm width/mm thick.) | ≥ 1.8 |
| 7) Adhesion to backing | (N/10 mm width/mm thick.) | ≥ 1.8 |
| 8) Shear adhesion after immersion in water | (N) | ≥ 18.0 |
| 9) Electric strength | | |
| - after 24 hour at 27 ± 2° C | | |
| and 65 ± 5% relative humidity | (kV/mm) | ≥ 40 |
| - after 24 hour at 27 ± 2° C | | |
| and 93 ± 2% relative humidity | (kV/mm) | ≥ 35 |

| PACKING | | | |
|---|---|---|---|
| The RoHS PVC plastic electrical insulation tape | | | |
| shall be packing in paper core Cellophane and | | | |
| shrinkage wrapped. | | | |
| | | | |
| 1) Dimension of each roll | | | |
| : | Diameter | (cm) | 5.8 |
| | Width | (cm) | 1.9 |
| 2) Weight of each roll (approx.) | | | |
| : | Net | (kg) | 0.036 |
| | Gross | (kg) | 0.037 |
| 3) Number of roll in each package | (Rolls) | 10 | |
| 4) Number of package in one case | (Package) | 10 | |
| 5) Dimension of each case : WxLxH | (cm) | 12.5x30x19.5 | |
| 6) Gross weight of each case (approx.) | (kg) | 4 | |

D