

# SPECIFICATION

## For

## CVV-S

600V Copper Conductor PVC Insulated PVC Sheathed

Shielded Control Cable

(600V, Cu/PVC/CTS/PVC)

BY



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CUSTOMER

Rev.	Date	Description
0	11/10/2019	Issued specification
1	6/5/2022	- Correct the value in Table 1 - Cancel cable code "0010"
2	11/1/2024	Add size 32, 36 x 1.5 mm <sup>2</sup>
3	8/3/2024	Add size 40 x 0.75 mm <sup>2</sup>
4	24/7/2024	Add size 32 x 1 mm <sup>2</sup>
5	27/8/2024	Add size 40 x 1 mm <sup>2</sup>
6	23/12/2024	Update Table 1 and marking on cable

Customer Document	Rev.

**Remark:**

This document is based on the Customer Document for the structure and properties of electric wire and cable only. If there are different points, will be shown in deviation table.

## 1. Scope

This specification covers 600V copper conductor polyvinyl chloride (PVC) insulated polyvinyl chloride (PVC) sheathed shielded control cable.

The cables shall be in according to applicable specification of THAI YAZAKI Standard based on JIS C 3401 and TIS 11 Part 5-2553.

Flame retardant test requirements per IEC 60332-1.

## 2. Conductor

The conductor shall be flexible stranded uncoated annealed copper conductor in accordance with IEC 60228 : 2004, Class 5.

For size 0.5 to 4 mm<sup>2</sup> : The direction of lay shall be left-hand (S) lay.

For size 6 mm<sup>2</sup> : The direction of lay shall be right-hand (Z) lay.

## 3. Insulation

The insulation shall be polyvinyl chloride (PVC/D) compound meet the requirements of TIS 11 Part 5-2553.

The average insulation thickness shall be based on Table 3 of TIS 11-2531 and not less than the value in Table 1.

The minimum thickness shall not fall below the value in Table 1 by more than 10% plus 0.1mm.

## 4. Cabling

The individual insulated cores shall be cabled together with suitable non-hygroscopic filler to give the completed cable a substantially circular cross section.

The direction of lay shall be left-hand (S) lay.

A suitable binder tape shall be applied helically over the cabled core.

## 5. Core Identification

The cores shall be identified by colors or by number printed on the insulation, as follows :

2-cores : blue, brown

3-cores : brown, black, grey

4-cores : blue, brown, black, grey

For  $\geq 5$ -cores :

The cores shall be identified by the arabic numerals printed longitudinally and continuously on the surface of black insulation

## 6. Metallic Shield

The metallic shield shall be an annealed uncoated copper tape and applied helically with a lap over the binder tape.

The thickness of the tape shall be approximate 0.1 mm.

A suitable separator tape shall be applied helically over the metallic shield.

## 7. Sheath

The sheath shall be sunlight resistant polyvinyl chloride (PVC/ST5) compound meet the requirements of TIS 11 Part 5-2553.

The average thickness shall be not less than the value in Table 1.

The minimum thickness shall be not fall below the value in Table 1 by more than 15% plus 0.1 mm.

The color of the sheath shall be black.

## 8. Marking on Cable

The marking items shall be marked by printed at intervals not exceeding 1 meter with suitable means throughout the length of cable.

1. Manufacturer's name and/or trade mark "  YAZAKI..... : TYE"

2. Year of manufacture

3. Rated circuit voltage "600V"

4. Type of conductor "CU"

5. Type of insulation and sheath "PVC/PVC"

6. Type of cable " SHIELD CONTROL CABLE "

7. Number of cores and size of conductor

8. The continuous reel length marking (in figure) shall be made on the sheath at every 1 meter

Except the number of cores and size of conductor as below :

Number of cores	Size (mm <sup>2</sup> )
2	0.5
3	0.5
4	0.5

## 9. Test and Properties

The cable shall be meet the requirements in Test and Inspection and Table 1, when tested in accordance with JIS C 3401, TIS 11 Part 2-2553, TIS 11 Part 5-2553, IEC 60228 : 2004 and IEC 60332-1.


Remark: Sunlight resistant test meet the requirement of TIS 293-2541.

## 10. Packing

The cable shall be placed on the non-returnable wooden reels.

The reel shall be covered with suitable covering to provide the cable with physically protection during transportation and during ordinary storage and handling operations.

Each reel shall be clearly marked as follows.

1. Designation "CVV-S"
2. Number of cores and size of conductor
3. Cable length
4. Net and gross weight
5. Manufacturer's name and/or trade mark "  **YAZAKI** "
6. Rolling direction of reel

## Test and Inspection

### **Routine Tests**

1. Maximum conductor resistance, Ohm/km ..... specified in Table 1
2. AC test voltage for 1 minutes, V .....2000

### **Sample Tests**

3. Construction.....specified in Table 1

### **Type Tests**

4. Minimum insulation resistance at 70 °C, MOhm-km.....specified in Table 1
5. Flame retardant tested according to IEC 60332-1

### Remark

Reference standard

Test item 1 refer IEC 60228:2004, Class 5

Test item 2 refer JIS C 3401

Test item 4 refer TIS 11-2531

Test item 5 refer IEC 60332-1

### **Definition concerning the tests**

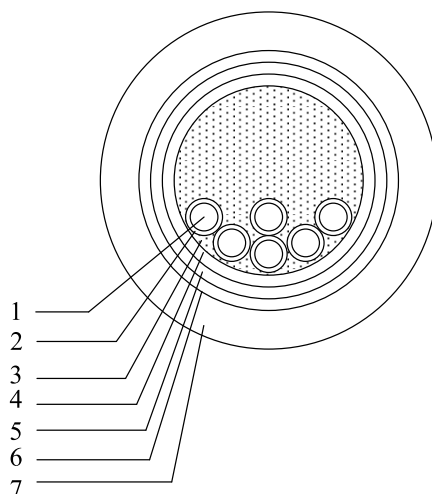
**Routine tests:** Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

**Sample tests:** Tests made by the manufacturer on samples of completed cable or components taken from a completed cable, at a specified frequency, so as to verify that the finished product meets the specified requirements.

**Type tests:** Tests made before supplying, on a general commercial basis, a type of cable covered by this standard, in order to demonstrate satisfactory performance characteristics to meet the intended application.

### Cable structure

Cross-sectional (Not scale)



No.	Structure	Material
1	Conductor	Flexible stranded annealed copper
2	Insulation	Polyvinyl chloride (PVC/D) compound
3	Filler	Non-hygroscopic
4	Binder tape	Spun bond tape or suitable tape
5	Metallic shield	Copper tape
6	Separator tape	Spun bond tape or suitable tape
7	Sheath	Polyvinyl chloride (PVC/ST5) compound

**Application:** For supervisory electrical equipment, station control circuits, outdoor, suitable installation in the dry or wet cable trenches. Maximum conductor temperature of 70 °C for normal operation and 160 °C for short circuit conditions.

**Table 1**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length  (m)
2	0.5	Flexible	0.95	0.6	1.2	9.0	39.0	0.0130	80	300
2	0.75	Flexible	1.15	0.6	1.2	9.5	26.0	0.0114	89	300
2	1	Flexible	1.30	0.6	1.2	9.5	19.5	0.0104	100	300
2	1.5	Flexible	1.55	0.6	1.2	10.0	13.3	0.0089	112	300
2	2.5	Flexible	2.00	0.7	1.2	11.5	7.98	0.0081	154	300
2	4	Flexible	2.60	0.8	1.2	13.0	4.95	0.0076	212	300
2	6	Flexible	3.40	0.8	1.4	15.0	3.30	0.0061	293	300
3	0.5	Flexible	0.95	0.6	1.2	9.0	39.0	0.0130	91	300
3	0.75	Flexible	1.15	0.6	1.2	9.5	26.0	0.0114	103	300
3	1	Flexible	1.30	0.6	1.2	10.0	19.5	0.0104	115	300
3	1.5	Flexible	1.55	0.6	1.2	10.5	13.3	0.0089	132	300
3	2.5	Flexible	2.00	0.7	1.2	11.5	7.98	0.0081	184	300
3	4	Flexible	2.60	0.8	1.4	14.0	4.95	0.0076	274	300
3	6	Flexible	3.40	0.8	1.4	15.5	3.30	0.0061	370	300
4	0.5	Flexible	0.95	0.6	1.2	10.0	39.0	0.0130	101	300
4	0.75	Flexible	1.15	0.6	1.2	10.5	26.0	0.0114	117	300
4	1	Flexible	1.30	0.6	1.2	10.5	19.5	0.0104	138	300
4	1.5	Flexible	1.55	0.6	1.2	11.0	13.3	0.0089	159	300
4	2.5	Flexible	2.00	0.7	1.2	12.5	7.98	0.0081	223	300
4	4	Flexible	2.60	0.8	1.4	15.0	4.95	0.0076	334	300
4	6	Flexible	3.40	0.8	1.4	17.0	3.30	0.0061	462	300

**Table 1**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
5	0.5	Flexible	0.95	0.6	1.2	10.5	39.0	0.0130	118	300
5	0.75	Flexible	1.15	0.6	1.2	11.0	26.0	0.0114	138	300
5	1	Flexible	1.30	0.6	1.2	11.5	19.5	0.0104	158	300
5	1.5	Flexible	1.55	0.6	1.2	12.0	13.3	0.0089	189	300
5	2.5	Flexible	2.00	0.7	1.4	14.0	7.98	0.0081	280	300
5	4	Flexible	2.60	0.8	1.4	16.5	4.95	0.0076	402	300
5	6	Flexible	3.40	0.8	1.4	18.5	3.30	0.0061	557	300
6	0.5	Flexible	0.95	0.6	1.2	11.5	39.0	0.0130	134	300
6	0.75	Flexible	1.15	0.6	1.2	12.0	26.0	0.0114	158	300
6	1	Flexible	1.30	0.6	1.2	12.0	19.5	0.0104	182	300
6	1.5	Flexible	1.55	0.6	1.2	13.0	13.3	0.0089	214	300
6	2.5	Flexible	2.00	0.7	1.4	15.0	7.98	0.0081	326	300
6	4	Flexible	2.60	0.8	1.4	18.0	4.95	0.0076	473	300
6	6	Flexible	3.40	0.8	1.4	20.5	3.30	0.0061	658	300
7	0.5	Flexible	0.95	0.6	1.2	11.5	39.0	0.0130	142	300
7	0.75	Flexible	1.15	0.6	1.2	12.0	26.0	0.0114	168	300
7	1	Flexible	1.30	0.6	1.2	12.0	19.5	0.0104	194	300
7	1.5	Flexible	1.55	0.6	1.2	13.0	13.3	0.0089	229	300
7	2.5	Flexible	2.00	0.7	1.4	15.0	7.98	0.0081	351	300
7	4	Flexible	2.60	0.8	1.4	18.0	4.95	0.0076	513	300
7	6	Flexible	3.40	0.8	1.4	20.5	3.30	0.0061	718	300



**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
8	0.5	Flexible	0.95	0.6	1.2	12.0	39.0	0.0130	161	300
8	0.75	Flexible	1.15	0.6	1.2	12.5	26.0	0.0114	191	300
8	1	Flexible	1.30	0.6	1.2	13.0	19.5	0.0104	223	300
8	1.5	Flexible	1.55	0.6	1.4	14.5	13.3	0.0089	276	300
8	2.5	Flexible	2.00	0.7	1.4	16.5	7.98	0.0081	405	300
8	4	Flexible	2.60	0.8	1.4	19.5	4.95	0.0076	594	300
8	6	Flexible	3.40	0.8	1.4	22.0	3.30	0.0061	826	300
9	0.5	Flexible	0.95	0.6	1.2	12.5	39.0	0.0130	174	300
9	0.75	Flexible	1.15	0.6	1.2	13.5	26.0	0.0114	207	300
9	1	Flexible	1.30	0.6	1.4	14.0	19.5	0.0104	254	300
9	1.5	Flexible	1.55	0.6	1.4	15.5	13.3	0.0089	300	300
9	2.5	Flexible	2.00	0.7	1.4	17.5	7.98	0.0081	454	300
9	4	Flexible	2.60	0.8	1.4	20.5	4.95	0.0076	663	300
9	6	Flexible	3.40	0.8	1.4	23.5	3.30	0.0061	935	300
10	0.5	Flexible	0.95	0.6	1.2	13.5	39.0	0.0130	191	300
10	0.75	Flexible	1.15	0.6	1.4	14.5	26.0	0.0114	249	300
10	1	Flexible	1.30	0.6	1.4	15.0	19.5	0.0104	288	300
10	1.5	Flexible	1.55	0.6	1.4	16.5	13.3	0.0089	340	300
10	2.5	Flexible	2.00	0.7	1.4	18.5	7.98	0.0081	500	300
10	4	Flexible	2.60	0.8	1.4	22.0	4.95	0.0076	732	300
10	6	Flexible	3.40	0.8	1.8	26.5	3.30	0.0061	1102	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
11	0.5	Flexible	0.95	0.6	1.2	13.5	39.0	0.0130	200	300
11	0.75	Flexible	1.15	0.6	1.4	14.5	26.0	0.0114	253	300
11	1	Flexible	1.30	0.6	1.4	15.0	19.5	0.0104	295	300
11	1.5	Flexible	1.55	0.6	1.4	16.5	13.3	0.0089	351	300
11	2.5	Flexible	2.00	0.7	1.4	18.5	7.98	0.0081	525	300
11	4	Flexible	2.60	0.8	1.4	22.0	4.95	0.0076	767	300
11	6	Flexible	3.40	0.8	1.8	26.5	3.30	0.0061	1155	300
12	0.5	Flexible	0.95	0.6	1.4	14.5	39.0	0.0130	227	300
12	0.75	Flexible	1.15	0.6	1.4	15.0	26.0	0.0114	270	300
12	1	Flexible	1.30	0.6	1.4	15.5	19.5	0.0104	323	300
12	1.5	Flexible	1.55	0.6	1.4	17.0	13.3	0.0089	382	300
12	2.5	Flexible	2.00	0.7	1.4	19.5	7.98	0.0081	568	300
12	4	Flexible	2.60	0.8	1.4	23.0	4.95	0.0076	855	300
12	6	Flexible	3.40	0.8	1.8	27.5	3.30	0.0061	1256	300
13	0.5	Flexible	0.95	0.6	1.4	15.0	39.0	0.0130	247	300
13	0.75	Flexible	1.15	0.6	1.4	16.0	26.0	0.0114	294	300
13	1	Flexible	1.30	0.6	1.4	16.5	19.5	0.0104	343	300
13	1.5	Flexible	1.55	0.6	1.4	17.5	13.3	0.0089	405	300
13	2.5	Flexible	2.00	0.7	1.4	20.0	7.98	0.0081	603	300
13	4	Flexible	2.60	0.8	1.4	24.0	4.95	0.0076	915	300
13	6	Flexible	3.40	0.8	1.8	28.5	3.30	0.0061	1344	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
14	0.5	Flexible	0.95	0.6	1.4	15.0	39.0	0.0130	247	300
14	0.75	Flexible	1.15	0.6	1.4	16.0	26.0	0.0114	297	300
14	1	Flexible	1.30	0.6	1.4	16.5	19.5	0.0104	349	300
14	1.5	Flexible	1.55	0.6	1.4	17.5	13.3	0.0089	416	300
14	2.5	Flexible	2.00	0.7	1.4	20.0	7.98	0.0081	626	300
14	4	Flexible	2.60	0.8	1.4	24.0	4.95	0.0076	939	300
14	6	Flexible	3.40	0.8	1.8	28.5	3.30	0.0061	1394	300
15	0.5	Flexible	0.95	0.6	1.4	15.5	39.0	0.0130	260	300
15	0.75	Flexible	1.15	0.6	1.4	16.5	26.0	0.0114	317	300
15	1	Flexible	1.30	0.6	1.4	17.0	19.5	0.0104	372	300
15	1.5	Flexible	1.55	0.6	1.4	18.0	13.3	0.0089	444	300
15	2.5	Flexible	2.00	0.7	1.4	21.0	7.98	0.0081	672	300
15	4	Flexible	2.60	0.8	1.8	26.0	4.95	0.0076	1061	300
15	6	Flexible	3.40	0.8	1.8	29.5	3.30	0.0061	1503	300
16	0.5	Flexible	0.95	0.6	1.4	15.5	39.0	0.0130	273	300
16	0.75	Flexible	1.15	0.6	1.4	16.5	26.0	0.0114	329	300
16	1	Flexible	1.30	0.6	1.4	17.0	19.5	0.0104	387	300
16	1.5	Flexible	1.55	0.6	1.4	18.5	13.3	0.0089	464	300
16	2.5	Flexible	2.00	0.7	1.4	21.0	7.98	0.0081	702	300
16	4	Flexible	2.60	0.8	1.8	26.5	4.95	0.0076	1108	300
16	6	Flexible	3.40	0.8	1.8	30.0	3.30	0.0061	1570	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
17	0.5	Flexible	0.95	0.6	1.4	16.5	39.0	0.0130	291	300
17	0.75	Flexible	1.15	0.6	1.4	17.5	26.0	0.0114	362	300
17	1	Flexible	1.30	0.6	1.4	18.0	19.5	0.0104	424	300
17	1.5	Flexible	1.55	0.6	1.4	19.5	13.3	0.0089	505	300
17	2.5	Flexible	2.00	0.7	1.4	22.5	7.98	0.0081	771	300
17	4	Flexible	2.60	0.8	1.8	27.5	4.95	0.0076	1202	300
17	6	Flexible	3.40	0.8	1.8	31.5	3.30	0.0061	1707	300
18	0.5	Flexible	0.95	0.6	1.4	16.5	39.0	0.0130	300	300
18	0.75	Flexible	1.15	0.6	1.4	17.5	26.0	0.0114	363	300
18	1	Flexible	1.30	0.6	1.4	18.0	19.5	0.0104	428	300
18	1.5	Flexible	1.55	0.6	1.4	19.5	13.3	0.0089	514	300
18	2.5	Flexible	2.00	0.7	1.4	22.5	7.98	0.0081	780	300
18	4	Flexible	2.60	0.8	1.8	27.5	4.95	0.0076	1219	300
18	6	Flexible	3.40	0.8	1.8	31.5	3.30	0.0061	1727	300
19	0.5	Flexible	0.95	0.6	1.4	16.5	39.0	0.0130	307	300
19	0.75	Flexible	1.15	0.6	1.4	17.5	26.0	0.0114	372	300
19	1	Flexible	1.30	0.6	1.4	18.0	19.5	0.0104	440	300
19	1.5	Flexible	1.55	0.6	1.4	19.5	13.3	0.0089	529	300
19	2.5	Flexible	2.00	0.7	1.4	22.5	7.98	0.0081	805	300
19	4	Flexible	2.60	0.8	1.8	27.5	4.95	0.0076	1258	300
19	6	Flexible	3.40	0.8	1.8	31.5	3.30	0.0061	1785	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length  (m)
20	0.5	Flexible	0.95	0.6	1.4	16.5	39.0	0.0130	319	300
20	0.75	Flexible	1.15	0.6	1.4	17.5	26.0	0.0114	387	300
20	1	Flexible	1.30	0.6	1.4	18.0	19.5	0.0104	458	300
20	1.5	Flexible	1.55	0.6	1.4	20.0	13.3	0.0089	553	300
20	2.5	Flexible	2.00	0.7	1.4	23.0	7.98	0.0081	847	300
20	4	Flexible	2.60	0.8	1.8	28.5	4.95	0.0076	1330	300
20	6	Flexible	3.40	0.8	1.8	32.5	3.30	0.0061	1888	300
21	0.5	Flexible	0.95	0.6	1.4	17.0	39.0	0.0130	333	300
21	0.75	Flexible	1.15	0.6	1.4	18.0	26.0	0.0114	405	300
21	1	Flexible	1.30	0.6	1.4	18.5	19.5	0.0104	480	300
21	1.5	Flexible	1.55	0.6	1.4	20.0	13.3	0.0089	579	300
21	2.5	Flexible	2.00	0.7	1.4	23.5	7.98	0.0081	883	300
21	4	Flexible	2.60	0.8	1.8	29.0	4.95	0.0076	1385	300
21	6	Flexible	3.40	0.8	1.8	33.5	3.30	0.0061	1967	300
22	0.5	Flexible	0.95	0.6	1.4	18.0	39.0	0.0130	353	300
22	0.75	Flexible	1.15	0.6	1.4	19.0	26.0	0.0114	430	300
22	1	Flexible	1.30	0.6	1.4	19.5	19.5	0.0104	511	300
22	1.5	Flexible	1.55	0.6	1.4	21.0	13.3	0.0089	615	300
22	2.5	Flexible	2.00	0.7	1.8	25.5	7.98	0.0081	990	300
22	4	Flexible	2.60	0.8	1.8	30.5	4.95	0.0076	1467	300
22	6	Flexible	3.40	0.8	1.8	35.0	3.30	0.0061	2085	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
23	0.5	Flexible	0.95	0.6	1.4	18.0	39.0	0.0130	360	300
23	0.75	Flexible	1.15	0.6	1.4	19.0	26.0	0.0114	439	300
23	1	Flexible	1.30	0.6	1.4	19.5	19.5	0.0104	522	300
23	1.5	Flexible	1.55	0.6	1.4	21.0	13.3	0.0089	630	300
23	2.5	Flexible	2.00	0.7	1.8	25.5	7.98	0.0081	1017	300
23	4	Flexible	2.60	0.8	1.8	30.5	4.95	0.0076	1512	300
23	6	Flexible	3.40	0.8	1.8	35.0	3.30	0.0061	2154	300
24	0.5	Flexible	0.95	0.6	1.4	18.5	39.0	0.0130	379	300
24	0.75	Flexible	1.15	0.6	1.4	20.0	26.0	0.0114	461	300
24	1	Flexible	1.30	0.6	1.4	20.5	19.5	0.0104	546	300
24	1.5	Flexible	1.55	0.6	1.4	22.0	13.3	0.0089	660	300
24	2.5	Flexible	2.00	0.7	1.8	26.5	7.98	0.0081	1062	300
24	4	Flexible	2.60	0.8	1.8	32.0	4.95	0.0076	1579	300
24	6	Flexible	3.40	0.8	2.2	37.5	3.30	0.0061	2316	300
25	0.5	Flexible	0.95	0.6	1.4	18.5	39.0	0.0130	388	300
25	0.75	Flexible	1.15	0.6	1.4	20.0	26.0	0.0114	473	300
25	1	Flexible	1.30	0.6	1.4	20.5	19.5	0.0104	560	300
25	1.5	Flexible	1.55	0.6	1.4	22.0	13.3	0.0089	679	300
25	2.5	Flexible	2.00	0.7	1.8	26.5	7.98	0.0081	1093	300
25	4	Flexible	2.60	0.8	1.8	32.0	4.95	0.0076	1628	300
25	6	Flexible	3.40	0.8	2.2	37.5	3.30	0.0061	2389	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
26	0.5	Flexible	0.95	0.6	1.4	18.5	39.0	0.0130	397	300
26	0.75	Flexible	1.15	0.6	1.4	20.0	26.0	0.0114	485	300
26	1	Flexible	1.30	0.6	1.4	20.5	19.5	0.0104	576	300
26	1.5	Flexible	1.55	0.6	1.4	22.0	13.3	0.0089	699	300
26	2.5	Flexible	2.00	0.7	1.8	26.5	7.98	0.0081	1124	300
26	4	Flexible	2.60	0.8	1.8	32.0	4.95	0.0076	1678	300
26	6	Flexible	3.40	0.8	2.2	37.5	3.30	0.0061	2465	300
27	0.5	Flexible	0.95	0.6	1.4	19.0	39.0	0.0130	407	300
27	0.75	Flexible	1.15	0.6	1.4	20.5	26.0	0.0114	497	300
27	1	Flexible	1.30	0.6	1.4	21.0	19.5	0.0104	592	300
27	1.5	Flexible	1.55	0.6	1.4	22.5	13.3	0.0089	717	300
27	2.5	Flexible	2.00	0.7	1.8	27.5	7.98	0.0081	1153	300
27	4	Flexible	2.60	0.8	1.8	33.0	4.95	0.0076	1725	300
27	6	Flexible	3.40	0.8	2.2	38.5	3.30	0.0061	2531	300
28	0.5	Flexible	0.95	0.6	1.4	19.5	39.0	0.0130	432	300
28	0.75	Flexible	1.15	0.6	1.4	21.0	26.0	0.0114	529	300
28	1	Flexible	1.30	0.6	1.4	21.5	19.5	0.0104	629	300
28	1.5	Flexible	1.55	0.6	1.4	23.5	13.3	0.0089	778	300
28	2.5	Flexible	2.00	0.7	1.8	28.5	7.98	0.0081	1228	300
28	4	Flexible	2.60	0.8	1.8	34.0	4.95	0.0076	1835	300
28	6	Flexible	3.40	0.8	2.2	40.0	3.30	0.0061	2690	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
29	0.5	Flexible	0.95	0.6	1.4	19.5	39.0	0.0130	430	300
29	0.75	Flexible	1.15	0.6	1.4	21.0	26.0	0.0114	528	300
29	1	Flexible	1.30	0.6	1.4	21.5	19.5	0.0104	628	300
29	1.5	Flexible	1.55	0.6	1.4	23.5	13.3	0.0089	777	300
29	2.5	Flexible	2.00	0.7	1.8	28.5	7.98	0.0081	1229	300
29	4	Flexible	2.60	0.8	1.8	34.0	4.95	0.0076	1841	300
29	6	Flexible	3.40	0.8	2.2	40.0	3.30	0.0061	2704	300
30	0.5	Flexible	0.95	0.6	1.4	19.5	39.0	0.0130	440	300
30	0.75	Flexible	1.15	0.6	1.4	21.0	26.0	0.0114	540	300
30	1	Flexible	1.30	0.6	1.4	21.5	19.5	0.0104	644	300
30	1.5	Flexible	1.55	0.6	1.4	23.5	13.3	0.0089	796	300
30	2.5	Flexible	2.00	0.7	1.8	28.5	7.98	0.0081	1260	300
30	4	Flexible	2.60	0.8	1.8	34.0	4.95	0.0076	1892	300
30	6	Flexible	3.40	0.8	2.2	40.0	3.30	0.0061	2779	300
31	0.5	Flexible	0.95	0.6	1.4	20.5	39.0	0.0130	468	300
31	0.75	Flexible	1.15	0.6	1.4	21.5	26.0	0.0114	574	300
31	1	Flexible	1.30	0.6	1.4	22.5	19.5	0.0104	686	300
31	1.5	Flexible	1.55	0.6	1.4	24.5	13.3	0.0089	846	300
31	2.5	Flexible	2.00	0.7	1.8	29.5	7.98	0.0081	1338	300
31	4	Flexible	2.60	0.8	1.8	35.0	4.95	0.0076	2006	300
31	6	Flexible	3.40	0.8	2.2	41.5	3.30	0.0061	2945	300



**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
32	0.5	Flexible	0.95	0.6	1.4	20.5	39.0	0.0130	465	300
32	0.75	Flexible	1.15	0.6	1.4	21.5	26.0	0.0114	573	300
32	1	Flexible	1.30	0.6	1.4	22.5	19.5	0.0104	685	300
32	1.5	Flexible	1.55	0.6	1.4	24.5	13.3	0.0089	845	300
32	2.5	Flexible	2.00	0.7	1.8	29.5	7.98	0.0081	1339	300
32	4	Flexible	2.60	0.8	1.8	35.0	4.95	0.0076	2012	300
32	6	Flexible	3.40	0.8	2.2	41.5	3.30	0.0061	2958	300
33	0.5	Flexible	0.95	0.6	1.4	20.5	39.0	0.0130	475	300
33	0.75	Flexible	1.15	0.6	1.4	21.5	26.0	0.0114	585	300
33	1	Flexible	1.30	0.6	1.4	22.5	19.5	0.0104	700	300
33	1.5	Flexible	1.55	0.6	1.4	24.5	13.3	0.0089	865	300
33	2.5	Flexible	2.00	0.7	1.8	29.5	7.98	0.0081	1370	300
33	4	Flexible	2.60	0.8	1.8	35.0	4.95	0.0076	2063	300
33	6	Flexible	3.40	0.8	2.2	41.5	3.30	0.0061	3034	300
34	0.5	Flexible	0.95	0.6	1.4	21.0	39.0	0.0130	504	300
34	0.75	Flexible	1.15	0.6	1.4	22.5	26.0	0.0114	619	300
34	1	Flexible	1.30	0.6	1.4	23.0	19.5	0.0104	752	300
34	1.5	Flexible	1.55	0.6	1.8	26.0	13.3	0.0089	964	300
34	2.5	Flexible	2.00	0.7	1.8	30.5	7.98	0.0081	1449	300
34	4	Flexible	2.60	0.8	2.2	37.5	4.95	0.0076	2241	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
35	0.5	Flexible	0.95	0.6	1.4	21.0	39.0	0.0130	501	300
35	0.75	Flexible	1.15	0.6	1.4	22.5	26.0	0.0114	617	300
35	1	Flexible	1.30	0.6	1.4	23.0	19.5	0.0104	752	300
35	1.5	Flexible	1.55	0.6	1.8	26.0	13.3	0.0089	964	300
35	2.5	Flexible	2.00	0.7	1.8	30.5	7.98	0.0081	1449	300
35	4	Flexible	2.60	0.8	2.2	37.5	4.95	0.0076	2248	300
36	0.5	Flexible	0.95	0.6	1.4	21.0	39.0	0.0130	511	300
36	0.75	Flexible	1.15	0.6	1.4	22.5	26.0	0.0114	629	300
36	1	Flexible	1.30	0.6	1.4	23.0	19.5	0.0104	767	300
36	1.5	Flexible	1.55	0.6	1.8	26.0	13.3	0.0089	983	300
36	2.5	Flexible	2.00	0.7	1.8	30.5	7.98	0.0081	1481	300
36	4	Flexible	2.60	0.8	2.2	37.5	4.95	0.0076	2298	300
37	0.5	Flexible	0.95	0.6	1.4	21.0	39.0	0.0130	518	300
37	0.75	Flexible	1.15	0.6	1.4	22.5	26.0	0.0114	640	300
37	1	Flexible	1.30	0.6	1.4	23.0	19.5	0.0104	780	300
37	1.5	Flexible	1.55	0.6	1.8	26.0	13.3	0.0089	1000	300
37	2.5	Flexible	2.00	0.7	1.8	30.5	7.98	0.0081	1507	300
37	4	Flexible	2.60	0.8	2.2	37.5	4.95	0.0076	2341	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
38	0.5	Flexible	0.95	0.6	1.4	21.5	39.0	0.0130	535	300
38	0.75	Flexible	1.15	0.6	1.4	23.0	26.0	0.0114	661	300
38	1	Flexible	1.30	0.6	1.4	23.5	19.5	0.0104	804	300
38	1.5	Flexible	1.55	0.6	1.8	26.5	13.3	0.0089	1032	300
38	2.5	Flexible	2.00	0.7	1.8	31.0	7.98	0.0081	1556	300
38	4	Flexible	2.60	0.8	2.2	38.0	4.95	0.0076	2418	300
39	0.5	Flexible	0.95	0.6	1.4	22.0	39.0	0.0130	547	300
39	0.75	Flexible	1.15	0.6	1.4	23.0	26.0	0.0114	675	300
39	1	Flexible	1.30	0.6	1.4	24.0	19.5	0.0104	823	300
39	1.5	Flexible	1.55	0.6	1.8	27.0	13.3	0.0089	1056	300
39	2.5	Flexible	2.00	0.7	1.8	31.5	7.98	0.0081	1593	300
39	4	Flexible	2.60	0.8	2.2	39.0	4.95	0.0076	2475	300
40	0.5	Flexible	0.95	0.6	1.4	22.0	39.0	0.0130	554	300
40	0.75	Flexible	1.15	0.6	1.4	23.0	26.0	0.0114	685	300
40	1	Flexible	1.30	0.6	1.4	24.0	19.5	0.0104	836	300
40	1.5	Flexible	1.55	0.6	1.8	27.0	13.3	0.0089	1072	300
40	2.5	Flexible	2.00	0.7	1.8	31.5	7.98	0.0081	1619	300
40	4	Flexible	2.60	0.8	2.2	39.0	4.95	0.0076	2520	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length (m)
41	0.5	Flexible	0.95	0.6	1.4	22.5	39.0	0.0130	575	300
41	0.75	Flexible	1.15	0.6	1.4	24.0	26.0	0.0114	723	300
41	1	Flexible	1.30	0.6	1.8	26.0	19.5	0.0104	918	300
41	1.5	Flexible	1.55	0.6	1.8	28.0	13.3	0.0089	1112	300
41	2.5	Flexible	2.00	0.7	1.8	32.5	7.98	0.0081	1677	300
41	4	Flexible	2.60	0.8	2.2	40.0	4.95	0.0076	2604	300
42	0.5	Flexible	0.95	0.6	1.4	22.5	39.0	0.0130	584	300
42	0.75	Flexible	1.15	0.6	1.4	24.0	26.0	0.0114	736	300
42	1	Flexible	1.30	0.6	1.8	26.0	19.5	0.0104	933	300
42	1.5	Flexible	1.55	0.6	1.8	28.0	13.3	0.0089	1130	300
42	2.5	Flexible	2.00	0.7	1.8	32.5	7.98	0.0081	1708	300
42	4	Flexible	2.60	0.8	2.2	40.0	4.95	0.0076	2654	300
43	0.5	Flexible	0.95	0.6	1.4	22.5	39.0	0.0130	591	300
43	0.75	Flexible	1.15	0.6	1.4	24.0	26.0	0.0114	745	300
43	1	Flexible	1.30	0.6	1.8	26.0	19.5	0.0104	945	300
43	1.5	Flexible	1.55	0.6	1.8	28.0	13.3	0.0089	1146	300
43	2.5	Flexible	2.00	0.7	1.8	32.5	7.98	0.0081	1736	300
43	4	Flexible	2.60	0.8	2.2	40.0	4.95	0.0076	2701	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length  (m)
44	0.5	Flexible	0.95	0.6	1.4	23.5	39.0	0.0130	609	300
44	0.75	Flexible	1.15	0.6	1.8	26.0	26.0	0.0114	816	300
44	1	Flexible	1.30	0.6	1.8	26.5	19.5	0.0104	970	300
44	1.5	Flexible	1.55	0.6	1.8	29.0	13.3	0.0089	1178	300
44	2.5	Flexible	2.00	0.7	1.8	34.0	7.98	0.0081	1782	300
45	0.5	Flexible	0.95	0.6	1.4	23.5	39.0	0.0130	618	300
45	0.75	Flexible	1.15	0.6	1.8	26.0	26.0	0.0114	828	300
45	1	Flexible	1.30	0.6	1.8	26.5	19.5	0.0104	986	300
45	1.5	Flexible	1.55	0.6	1.8	29.0	13.3	0.0089	1197	300
45	2.5	Flexible	2.00	0.7	1.8	34.0	7.98	0.0081	1813	300
46	0.5	Flexible	0.95	0.6	1.4	23.5	39.0	0.0130	628	300
46	0.75	Flexible	1.15	0.6	1.8	26.0	26.0	0.0114	841	300
46	1	Flexible	1.30	0.6	1.8	26.5	19.5	0.0104	1001	300
46	1.5	Flexible	1.55	0.6	1.8	29.0	13.3	0.0089	1217	300
46	2.5	Flexible	2.00	0.7	1.8	34.0	7.98	0.0081	1844	300

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	Conductor type	Conductor diameter approx.  (mm)	Insulation thickness nominal  (mm)	Sheath thickness nominal  (mm)	Overall diameter approx.  (mm)	Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight of cable approx. (kg/km)	Standard packing length  (m)
47	0.5	Flexible	0.95	0.6	1.4	23.5	39.0	0.0130	637	300
47	0.75	Flexible	1.15	0.6	1.8	26.0	26.0	0.0114	853	300
47	1	Flexible	1.30	0.6	1.8	26.5	19.5	0.0104	1016	300
47	1.5	Flexible	1.55	0.6	1.8	29.0	13.3	0.0089	1236	300
47	2.5	Flexible	2.00	0.7	1.8	34.0	7.98	0.0081	1876	300
48	0.5	Flexible	0.95	0.6	1.4	24.0	39.0	0.0130	659	300
48	0.75	Flexible	1.15	0.6	1.8	26.5	26.0	0.0114	866	300
48	1	Flexible	1.30	0.6	1.8	27.0	19.5	0.0104	1034	300
48	1.5	Flexible	1.55	0.6	1.8	29.5	13.3	0.0089	1256	300
48	2.5	Flexible	2.00	0.7	1.8	34.5	7.98	0.0081	1905	300