

SPECIFICATION**For****0.6/1KV-CVV**

0.6/1(1.2)kV PVC Insulated

PVC Sheathed Control Cable

(0.6/1(1.2)kV, Cu/PVC/PVC)

BY



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CUSTOMER

Rev.	Date	Description
0	27/9/2019	Issued specification
1	23/5/2023	- Cancel cable code "0010" - Correct the value in Table 1
2	21/2/2024	Update data of cable
3	4/4/2024	Change marking on cable
4	21/6/2024	Update specification
5	15/1/2025	Update specification

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 1000V copper conductor polyvinyl chloride (PVC) insulated polyvinyl chloride (PVC) sheathed control cable.

The cable shall be in accordance with IEC 60502-1 : 2021.

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 1.5 to 4 mm² : The direction of lay shall be left-hand (S) lay.

For size 6 and 10 mm² : The direction of lay shall be right-hand (Z) lay.

3. Insulation

The insulation shall be polyvinyl chloride (PVC/A) compound meet the requirements of IEC 60502-1 : 2021.

The average thickness of the insulation shall be not less than that given in Table 1.

The minimum thickness shall not fall below 90% of the nominal value in Table 1 by more than 0.1 m.

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 in the outer layer.

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

5. Core Identification

The cores shall be identified by color or numerals printed on the insulation, as follows :

2-cores : blue, brown

3-cores : brown, black, grey

4-cores : blue, brown, black, grey

For 5-cores to 30-cores :

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

6. Sheath

The sheath shall be sunlight resistant polyvinyl chloride (PVC/ST1) compound meet the requirements of IEC 60502-1 : 2021.


The average thickness of the sheath shall be not less than that given in Table 1.

The minimum thickness shall not fall below 80% of the nominal value in Table 1 by more than 0.2 mm.

The color of the sheath shall be black.

7. 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 "0.6/1KV"
4. Type of conductor "CU"
5. Type of insulation and sheath "PVC/PVC"
6. Type of cable "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

8. Test and Properties

The cable shall be meet the requirements in Test and Inspection and Table 1, when tested in accordance with IEC 60502-1 : 2021, IEC 60228 : 2004 and IEC 60332-1.


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

9. Packing

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

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

Each reel shall be clearly marked as follows.

1. Designation "0.6/1KV-CVV "
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

- Maximum conductor resistance, Ohm/km specified in Table 1
- AC test voltage for 5 minutes, kV3.5

Sample Tests

- Construction.....specified in Table 1

Type Tests

- Flame retardant tested according to IEC 60332-1

Definition concerning the tests

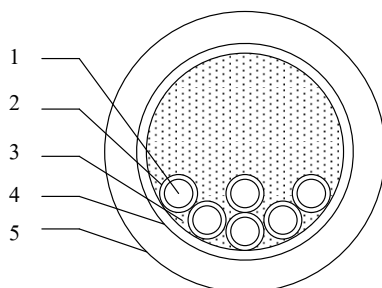
Routine tests: Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

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/A) compound
3	Filler	Non-hygroscopic
4	Binder Tape	Spun bond tape or suitable tape
5	Sheath	Polyvinyl chloride (PVC/ST1) 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 ²)	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)	Weight of cable approx. (kg/km)	Standard packing length (m)
2	1	Flexible	1.30	0.8	1.8	11.0	19.5	120	300
2	1.5	Flexible	1.55	0.8	1.8	12.0	13.3	138	300
2	2.5	Flexible	2.00	0.8	1.8	12.5	7.98	167	300
2	4	Flexible	2.60	1.0	1.8	14.5	4.95	235	300
2	6	Flexible	3.40	1.0	1.8	16.0	3.30	301	300
2	10	Flexible	4.60	1.0	1.8	18.5	1.91	445	300
3	1	Flexible	1.30	0.8	1.8	11.5	19.5	136	300
3	1.5	Flexible	1.55	0.8	1.8	12.0	13.3	160	300
3	2.5	Flexible	2.00	0.8	1.8	13.0	7.98	201	300
3	4	Flexible	2.60	1.0	1.8	15.0	4.95	287	300
3	6	Flexible	3.40	1.0	1.8	17.0	3.30	386	300
3	10	Flexible	4.60	1.0	1.8	19.5	1.91	571	300
4	1	Flexible	1.30	0.8	1.8	12.5	19.5	162	300
4	1.5	Flexible	1.55	0.8	1.8	13.0	13.3	189	300
4	2.5	Flexible	2.00	0.8	1.8	14.0	7.98	243	300
4	4	Flexible	2.60	1.0	1.8	16.5	4.95	355	300
4	6	Flexible	3.40	1.0	1.8	18.5	3.30	480	300
4	10	Flexible	4.60	1.0	1.8	21.0	1.91	724	300

Table 1 (continued)

No. of cores	Size (mm ²)	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)	Weight of cable approx. (kg/km)	Standard packing length (m)
5	1	Flexible	1.30	0.8	1.8	13.5	19.5	192	300
5	1.5	Flexible	1.55	0.8	1.8	14.0	13.3	225	300
5	2.5	Flexible	2.00	0.8	1.8	15.5	7.98	285	300
5	4	Flexible	2.60	1.0	1.8	18.0	4.95	429	300
5	6	Flexible	3.40	1.0	1.8	20.0	3.30	585	300
5	10	Flexible	4.60	1.0	1.8	23.5	1.91	881	300
6	1	Flexible	1.30	0.8	1.8	14.5	19.5	220	300
6	1.5	Flexible	1.55	0.8	1.8	15.0	13.3	260	300
6	2.5	Flexible	2.00	0.8	1.8	16.5	7.98	334	300
6	4	Flexible	2.60	1.0	1.8	19.5	4.95	498	300
6	6	Flexible	3.40	1.0	1.8	22.0	3.30	686	300
6	10	Flexible	4.60	1.0	1.8	25.5	1.91	1047	300
7	1	Flexible	1.30	0.8	1.8	14.5	19.5	234	300
7	1.5	Flexible	1.55	0.8	1.8	15.0	13.3	278	300
7	2.5	Flexible	2.00	0.8	1.8	16.5	7.98	360	300
7	4	Flexible	2.60	1.0	1.8	19.5	4.95	542	300
7	6	Flexible	3.40	1.0	1.8	22.0	3.30	751	300
7	10	Flexible	4.60	1.0	1.8	25.5	1.91	1154	300

Table 1 (continued)

No. of cores	Size (mm ²)	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)	Weight of cable approx. (kg/km)	Standard packing length (m)
8	1	Flexible	1.30	0.8	1.8	15.5	19.5	263	300
8	1.5	Flexible	1.55	0.8	1.8	16.5	13.3	321	300
8	2.5	Flexible	2.00	0.8	1.8	17.5	7.98	415	300
8	4	Flexible	2.60	1.0	1.8	21.0	4.95	633	300
8	6	Flexible	3.40	1.0	1.8	23.5	3.30	875	300
8	10	Flexible	4.60	1.0	1.8	27.5	1.91	1344	300
9	1	Flexible	1.30	0.8	1.8	16.5	19.5	291	300
9	1.5	Flexible	1.55	0.8	1.8	17.5	13.3	361	300
9	2.5	Flexible	2.00	0.8	1.8	19.0	7.98	465	300
9	4	Flexible	2.60	1.0	1.8	22.5	4.95	713	300
9	6	Flexible	3.40	1.0	1.8	25.5	3.30	990	300
9	10	Flexible	4.60	1.0	1.9	30.0	1.91	1534	300
10	1	Flexible	1.30	0.8	1.8	17.5	19.5	322	300
10	1.5	Flexible	1.55	0.8	1.8	18.5	13.3	395	300
10	2.5	Flexible	2.00	0.8	1.8	20.0	7.98	511	300
10	4	Flexible	2.60	1.0	1.8	24.0	4.95	786	300
10	6	Flexible	3.40	1.0	1.8	27.0	3.30	1090	300
10	10	Flexible	4.60	1.0	1.9	32.0	1.91	1687	300

Table 1 (continued)

No. of cores	Size (mm ²)	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)	Weight of cable approx. (kg/km)	Standard packing length (m)
11	1	Flexible	1.30	0.8	1.8	17.5	19.5	332	300
11	1.5	Flexible	1.55	0.8	1.8	18.5	13.3	411	300
11	2.5	Flexible	2.00	0.8	1.8	20.0	7.98	537	300
11	4	Flexible	2.60	1.0	1.8	24.0	4.95	826	300
11	6	Flexible	3.40	1.0	1.8	27.0	3.30	1149	300
11	10	Flexible	4.60	1.0	1.9	32.0	1.91	1790	300
12	1	Flexible	1.30	0.8	1.8	18.0	19.5	361	300
12	1.5	Flexible	1.55	0.8	1.8	19.0	13.3	438	300
12	2.5	Flexible	2.00	0.8	1.8	21.0	7.98	585	300
12	4	Flexible	2.60	1.0	1.8	25.0	4.95	892	300
12	6	Flexible	3.40	1.0	1.8	28.0	3.30	1256	300
12	10	Flexible	4.60	1.0	2.0	33.5	1.91	1974	300
13	1	Flexible	1.30	0.8	1.8	19.0	19.5	393	300
13	1.5	Flexible	1.55	0.8	1.8	20.0	13.3	472	300
13	2.5	Flexible	2.00	0.8	1.8	22.0	7.98	627	300
13	4	Flexible	2.60	1.0	1.8	26.0	4.95	965	300
13	6	Flexible	3.40	1.0	1.9	30.0	3.30	1355	300
13	10	Flexible	4.60	1.0	2.0	35.5	1.91	2126	300

Table 1 (continued)

No. of cores	Size (mm ²)	Conductor strands (No./mm)	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Sheath thickness nominal (mm)	Overall diameter approx. (mm)	Conductor resistance at 20°C maximum (Ohm/km)	Weight of cable approx. (kg/km)	Standard packing length (m)
14	1	Flexible	1.30	0.8	1.8	19.0	19.5	393	300
14	1.5	Flexible	1.55	0.8	1.8	20.0	13.3	477	300
14	2.5	Flexible	2.00	0.8	1.8	22.0	7.98	643	300
14	4	Flexible	2.60	1.0	1.8	26.0	4.95	994	300
14	6	Flexible	3.40	1.0	1.9	30.0	3.30	1401	300
14	10	Flexible	4.60	1.0	2.0	35.5	1.91	2207	300
15	1	Flexible	1.30	0.8	1.8	19.5	19.5	419	300
15	1.5	Flexible	1.55	0.8	1.8	20.5	13.3	513	300
15	2.5	Flexible	2.00	0.8	1.8	22.5	7.98	692	300
15	4	Flexible	2.60	1.0	1.8	27.0	4.95	1063	300
15	6	Flexible	3.40	1.0	1.9	31.0	3.30	1516	300
15	10	Flexible	4.60	1.0	2.1	37.0	1.91	2392	300
16	1	Flexible	1.30	0.8	1.8	19.5	19.5	437	300
16	1.5	Flexible	1.55	0.8	1.8	21.0	13.3	533	300
16	2.5	Flexible	2.00	0.8	1.8	23.0	7.98	722	300
16	4	Flexible	2.60	1.0	1.8	27.5	4.95	1109	300
16	6	Flexible	3.40	1.0	1.9	31.5	3.30	1583	300
16	10	Flexible	4.60	1.0	2.1	37.5	1.91	2504	300

Table 1 (continued)

No. of cores	Size (mm ²)	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)	Weight of cable approx. (kg/km)	Standard packing length (m)
17	1	Flexible	1.30	0.8	1.8	20.5	19.5	476	300
17	1.5	Flexible	1.55	0.8	1.8	22.0	13.3	590	300
17	2.5	Flexible	2.00	0.8	1.8	24.0	7.98	781	300
17	4	Flexible	2.60	1.0	1.8	29.0	4.95	1215	300
17	6	Flexible	3.40	1.0	2.0	33.5	3.30	1747	300
17	10	Flexible	4.60	1.0	2.2	40.0	1.91	2747	300
		Flexible							
18	1	Flexible	1.30	0.8	1.8	20.5	19.5	483	300
18	1.5	Flexible	1.55	0.8	1.8	22.0	13.3	590	300
18	2.5	Flexible	2.00	0.8	1.8	24.0	7.98	792	300
18	4	Flexible	2.60	1.0	1.8	29.0	4.95	1225	300
18	6	Flexible	3.40	1.0	2.0	33.5	3.30	1761	300
18	10	Flexible	4.60	1.0	2.2	40.0	1.91	2790	300
		Flexible							
19	1	Flexible	1.30	0.8	1.8	20.5	19.5	497	300
19	1.5	Flexible	1.55	0.8	1.8	22.0	13.3	608	300
19	2.5	Flexible	2.00	0.8	1.8	24.0	7.98	818	300
19	4	Flexible	2.60	1.0	1.8	29.0	4.95	1268	300
19	6	Flexible	3.40	1.0	2.0	33.5	3.30	1824	300
19	10	Flexible	4.60	1.0	2.2	40.0	1.91	2894	300

Table 1 (continued)

No. of cores	Size (mm ²)	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)	Weight of cable approx. (kg/km)	Standard packing length (m)
20	1	Flexible	1.30	0.8	1.8	21.0	19.5	525	300
20	1.5	Flexible	1.55	0.8	1.8	22.5	13.3	642	300
20	2.5	Flexible	2.00	0.8	1.8	24.5	7.98	861	300
20	4	Flexible	2.60	1.0	1.9	30.0	4.95	1355	300
20	6	Flexible	3.40	1.0	2.0	34.5	3.30	1931	300
21	1	Flexible	1.30	0.8	1.8	21.5	19.5	543	300
21	1.5	Flexible	1.55	0.8	1.8	23.0	13.3	666	300
21	2.5	Flexible	2.00	0.8	1.8	25.0	7.98	900	300
21	4	Flexible	2.60	1.0	1.9	30.5	4.95	1414	300
21	6	Flexible	3.40	1.0	2.0	35.0	3.30	2015	300
22	1	Flexible	1.30	0.8	1.8	22.5	19.5	578	300
22	1.5	Flexible	1.55	0.8	1.8	24.5	13.3	709	300
22	2.5	Flexible	2.00	0.8	1.8	26.5	7.98	957	300
22	4	Flexible	2.60	1.0	1.9	32.0	4.95	1501	300
22	6	Flexible	3.40	1.0	2.1	37.0	3.30	2153	300
23	1	Flexible	1.30	0.8	1.8	22.5	19.5	591	300
23	1.5	Flexible	1.55	0.8	1.8	24.5	13.3	729	300
23	2.5	Flexible	2.00	0.8	1.8	26.5	7.98	984	300
23	4	Flexible	2.60	1.0	1.9	32.0	4.95	1549	300
23	6	Flexible	3.40	1.0	2.1	37.0	3.30	2227	300

Table 1 (continued)

No. of cores	Size (mm ²)	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)	Weight of cable approx. (kg/km)	Standard packing length (m)
24	1	Flexible	1.30	0.8	1.8	23.5	19.5	619	300
24	1.5	Flexible	1.55	0.8	1.8	25.5	13.3	761	300
24	2.5	Flexible	2.00	0.8	1.8	28.0	7.98	1027	300
24	4	Flexible	2.60	1.0	2.0	34.0	4.95	1633	300
24	6	Flexible	3.40	1.0	2.2	39.5	3.30	2343	300
25	1	Flexible	1.30	0.8	1.8	23.5	19.5	637	300
25	1.5	Flexible	1.55	0.8	1.8	25.5	13.3	783	300
25	2.5	Flexible	2.00	0.8	1.8	28.0	7.98	1059	300
25	4	Flexible	2.60	1.0	2.0	34.0	4.95	1686	300
25	6	Flexible	3.40	1.0	2.2	39.5	3.30	2422	300
26	1	Flexible	1.30	0.8	1.8	23.5	19.5	655	300
26	1.5	Flexible	1.55	0.8	1.8	25.5	13.3	806	300
26	2.5	Flexible	2.00	0.8	1.8	28.0	7.98	1092	300
26	4	Flexible	2.60	1.0	2.0	34.0	4.95	1741	300
26	6	Flexible	3.40	1.0	2.2	39.5	3.30	2502	300
27	1	Flexible	1.30	0.8	1.8	24.0	19.5	671	300
27	1.5	Flexible	1.55	0.8	1.8	26.0	13.3	827	300
27	2.5	Flexible	2.00	0.8	1.8	28.5	7.98	1121	300
27	4	Flexible	2.60	1.0	2.0	35.0	4.95	1785	300
27	6	Flexible	3.40	1.0	2.2	40.5	3.30	2567	300

Table 1 (continued)

No. of cores	Size (mm ²)	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)	Weight of cable approx. (kg/km)	Standard packing length (m)
28	1	Flexible	1.30	0.8	1.8	25.0	19.5	724	300
28	1.5	Flexible	1.55	0.8	1.8	27.0	13.3	891	300
28	2.5	Flexible	2.00	0.8	1.8	29.5	7.98	1205	300
28	4	Flexible	2.60	1.0	2.1	36.5	4.95	1929	300
29	1	Flexible	1.30	0.8	1.8	25.0	19.5	715	300
29	1.5	Flexible	1.55	0.8	1.8	27.0	13.3	882	300
29	2.5	Flexible	2.00	0.8	1.8	29.5	7.98	1197	300
29	4	Flexible	2.60	1.0	2.1	36.5	4.95	1924	300
30	1	Flexible	1.30	0.8	1.8	25.0	19.5	733	300
30	1.5	Flexible	1.55	0.8	1.8	27.0	13.3	905	300
30	2.5	Flexible	2.00	0.8	1.8	29.5	7.98	1230	300
30	4	Flexible	2.60	1.0	2.1	36.5	4.95	1979	300