

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

0.6/1(1.2)kV PVC Insulated PVC Sheathed

Shielded Control Cable

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

BY



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CUSTOMER

Rev.	Date	Description
0	20/05/2020	Issued specification
1	17/02/2021	Cancel cable code "0010"
2	11/3/2024	Update specification
3	21/3/2024	Change marking on cable
4	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 shielded control cable.

The cables shall be based on 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 mm.

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. Metallic Shield

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

The thickness of the copper 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/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 be 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.

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 "0.6/1KV"
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

9. 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.

10. 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-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

- 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

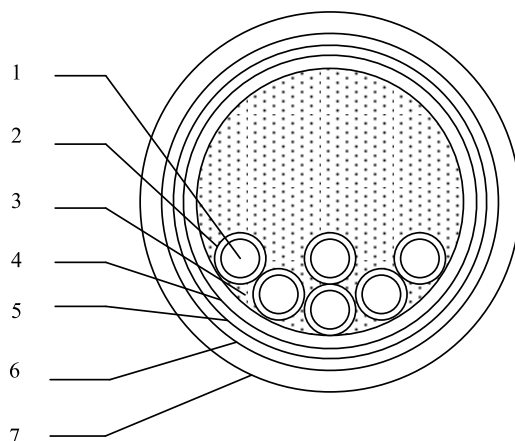
Routine tests: Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

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	Metallic shield	Copper tape
6	Separator tape	Spun bond tape or suitable tape
7	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	1.5	Flexible	1.55	0.8	1.8	12.5	13.3	166	300
2	2.5	Flexible	2.00	0.8	1.8	13.5	7.98	198	300
2	4	Flexible	2.60	1.0	1.8	15.0	4.95	272	300
2	6	Flexible	3.40	1.0	1.8	17.0	3.30	343	300
2	10	Flexible	4.60	1.0	1.8	19.0	1.91	494	300
3	1.5	Flexible	1.55	0.8	1.8	13.0	13.3	190	300
3	2.5	Flexible	2.00	0.8	1.8	14.0	7.98	234	300
3	4	Flexible	2.60	1.0	1.8	16.0	4.95	327	300
3	6	Flexible	3.40	1.0	1.8	17.5	3.30	430	300
3	10	Flexible	4.60	1.0	1.8	20.0	1.91	623	300
4	1.5	Flexible	1.55	0.8	1.8	14.0	13.3	222	300
4	2.5	Flexible	2.00	0.8	1.8	15.0	7.98	278	300
4	4	Flexible	2.60	1.0	1.8	17.0	4.95	398	300
4	6	Flexible	3.40	1.0	1.8	19.0	3.30	529	300
4	10	Flexible	4.60	1.0	1.8	22.0	1.91	781	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	1.5	Flexible	1.55	0.8	1.8	15.0	13.3	261	300
5	2.5	Flexible	2.00	0.8	1.8	16.0	7.98	324	300
5	4	Flexible	2.60	1.0	1.8	18.5	4.95	476	300
5	6	Flexible	3.40	1.0	1.8	21.0	3.30	639	300
5	10	Flexible	4.60	1.0	1.8	24.0	1.91	958	300
6	1.5	Flexible	1.55	0.8	1.8	16.0	13.3	299	300
6	2.5	Flexible	2.00	0.8	1.8	17.0	7.98	376	300
6	4	Flexible	2.60	1.0	1.8	20.0	4.95	550	300
6	6	Flexible	3.40	1.0	1.8	22.5	3.30	745	300
6	10	Flexible	4.60	1.0	1.8	26.0	1.91	1132	300
7	1.5	Flexible	1.55	0.8	1.8	16.0	13.3	317	300
7	2.5	Flexible	2.00	0.8	1.8	17.0	7.98	402	300
7	4	Flexible	2.60	1.0	1.8	20.0	4.95	594	300
7	6	Flexible	3.40	1.0	1.8	22.5	3.30	810	300
7	10	Flexible	4.60	1.0	1.8	26.0	1.91	1238	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	1.5	Flexible	1.55	0.8	1.8	17.0	13.3	362	300
8	2.5	Flexible	2.00	0.8	1.8	18.5	7.98	461	300
8	4	Flexible	2.60	1.0	1.8	21.5	4.95	688	300
8	6	Flexible	3.40	1.0	1.8	24.0	3.30	952	300
8	10	Flexible	4.60	1.0	1.8	28.0	1.91	1436	300
9	1.5	Flexible	1.55	0.8	1.8	18.0	13.3	406	300
9	2.5	Flexible	2.00	0.8	1.8	19.5	7.98	514	300
9	4	Flexible	2.60	1.0	1.8	23.0	4.95	774	300
9	6	Flexible	3.40	1.0	1.8	26.0	3.30	1074	300
9	10	Flexible	4.60	1.0	1.9	30.5	1.91	1634	300
10	1.5	Flexible	1.55	0.8	1.8	19.5	13.3	443	300
10	2.5	Flexible	2.00	0.8	1.8	21.0	7.98	565	300
10	4	Flexible	2.60	1.0	1.8	24.5	4.95	865	300
10	6	Flexible	3.40	1.0	1.8	28.0	3.30	1181	300
10	10	Flexible	4.60	1.0	2.0	33.0	1.91	1811	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	1.5	Flexible	1.55	0.8	1.8	19.5	13.3	459	300
11	2.5	Flexible	2.00	0.8	1.8	21.0	7.98	591	300
11	4	Flexible	2.60	1.0	1.8	24.5	4.95	905	300
11	6	Flexible	3.40	1.0	1.8	28.0	3.30	1240	300
11	10	Flexible	4.60	1.0	2.0	33.0	1.91	1914	300
12	1.5	Flexible	1.55	0.8	1.8	20.0	13.3	488	300
12	2.5	Flexible	2.00	0.8	1.8	21.5	7.98	641	300
12	4	Flexible	2.60	1.0	1.8	25.5	4.95	974	300
12	6	Flexible	3.40	1.0	1.8	29.0	3.30	1350	300
12	10	Flexible	4.60	1.0	2.0	34.5	1.91	2088	300
13	1.5	Flexible	1.55	0.8	1.8	21.0	13.3	525	300
13	2.5	Flexible	2.00	0.8	1.8	22.5	7.98	685	300
13	4	Flexible	2.60	1.0	1.8	27.0	4.95	1051	300
13	6	Flexible	3.40	1.0	1.9	30.5	3.30	1455	300
13	10	Flexible	4.60	1.0	2.1	36.5	1.91	2263	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	1.5	Flexible	1.55	0.8	1.8	21.0	13.3	529	300
14	2.5	Flexible	2.00	0.8	1.8	22.5	7.98	701	300
14	4	Flexible	2.60	1.0	1.8	27.0	4.95	1080	300
14	6	Flexible	3.40	1.0	1.9	30.5	3.30	1501	300
14	10	Flexible	4.60	1.0	2.1	36.5	1.91	2343	300
15	1.5	Flexible	1.55	0.8	1.8	21.5	13.3	568	300
15	2.5	Flexible	2.00	0.8	1.8	23.0	7.98	752	300
15	4	Flexible	2.60	1.0	1.8	27.5	4.95	1152	300
15	6	Flexible	3.40	1.0	1.9	31.5	3.30	1620	300
15	10	Flexible	4.60	1.0	2.1	37.5	1.91	2517	300
16	1.5	Flexible	1.55	0.8	1.8	22.0	13.3	588	300
16	2.5	Flexible	2.00	0.8	1.8	23.5	7.98	784	300
16	4	Flexible	2.60	1.0	1.8	28.5	4.95	1201	300
16	6	Flexible	3.40	1.0	1.9	32.0	3.30	1689	300
16	10	Flexible	4.60	1.0	2.1	38.0	1.91	2632	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	1.5	Flexible	1.55	0.8	1.8	23.0	13.3	648	300
17	2.5	Flexible	2.00	0.8	1.8	25.0	7.98	860	300
17	4	Flexible	2.60	1.0	1.9	30.0	4.95	1281	300
17	6	Flexible	3.40	1.0	2.0	34.0	3.30	1793	300
17	10	Flexible	4.60	1.0	2.2	40.5	1.91	2794	300
18	1.5	Flexible	1.55	0.8	1.8	23.0	13.3	649	300
18	2.5	Flexible	2.00	0.8	1.8	25.0	7.98	870	300
18	4	Flexible	2.60	1.0	1.9	30.0	4.95	1335	300
18	6	Flexible	3.40	1.0	2.0	34.0	3.30	1873	300
18	10	Flexible	4.60	1.0	2.2	40.5	1.91	2926	300
19	1.5	Flexible	1.55	0.8	1.8	23.0	13.3	667	300
19	2.5	Flexible	2.00	0.8	1.8	25.0	7.98	896	300
19	4	Flexible	2.60	1.0	1.9	30.0	4.95	1379	300
19	6	Flexible	3.40	1.0	2.0	34.0	3.30	1937	300
19	10	Flexible	4.60	1.0	2.2	40.5	1.91	3030	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	1.5	Flexible	1.55	0.8	1.8	23.5	13.3	702	300
20	2.5	Flexible	2.00	0.8	1.8	25.5	7.98	941	300
20	4	Flexible	2.60	1.0	1.9	30.5	4.95	1455	300
20	6	Flexible	3.40	1.0	2.0	35.0	3.30	2047	300
21	1.5	Flexible	1.55	0.8	1.8	24.0	13.3	728	300
21	2.5	Flexible	2.00	0.8	1.8	26.0	7.98	982	300
21	4	Flexible	2.60	1.0	1.9	31.5	4.95	1516	300
21	6	Flexible	3.40	1.0	2.1	36.0	3.30	2150	300
22	1.5	Flexible	1.55	0.8	1.8	25.0	13.3	787	300
22	2.5	Flexible	2.00	0.8	1.8	27.0	7.98	1043	300
22	4	Flexible	2.60	1.0	2.0	33.0	4.95	1624	300
22	6	Flexible	3.40	1.0	2.1	38.0	3.30	2277	300
23	1.5	Flexible	1.55	0.8	1.8	25.0	13.3	807	300
23	2.5	Flexible	2.00	0.8	1.8	27.0	7.98	1071	300
23	4	Flexible	2.60	1.0	2.0	33.0	4.95	1671	300
23	6	Flexible	3.40	1.0	2.1	38.0	3.30	2353	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	1.5	Flexible	1.55	0.8	1.8	26.0	13.3	843	300
24	2.5	Flexible	2.00	0.8	1.8	28.5	7.98	1118	300
24	4	Flexible	2.60	1.0	2.0	35.0	4.95	1748	300
24	6	Flexible	3.40	1.0	2.2	40.0	3.30	2476	300
25	1.5	Flexible	1.55	0.8	1.8	26.0	13.3	866	300
25	2.5	Flexible	2.00	0.8	1.8	28.5	7.98	1151	300
25	4	Flexible	2.60	1.0	2.0	35.0	4.95	1801	300
25	6	Flexible	3.40	1.0	2.2	40.0	3.30	2555	300
26	1.5	Flexible	1.55	0.8	1.8	26.0	13.3	889	300
26	2.5	Flexible	2.00	0.8	1.8	28.5	7.98	1184	300
26	4	Flexible	2.60	1.0	2.0	35.0	4.95	1855	300
26	6	Flexible	3.40	1.0	2.2	40.0	3.30	2635	300
27	1.5	Flexible	1.55	0.8	1.8	26.5	13.3	911	300
27	2.5	Flexible	2.00	0.8	1.8	29.0	7.98	1215	300
27	4	Flexible	2.60	1.0	2.0	35.5	4.95	1903	300
27	6	Flexible	3.40	1.0	2.2	41.0	3.30	2704	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	1.5	Flexible	1.55	0.8	1.8	27.5	13.3	980	300
28	2.5	Flexible	2.00	0.8	1.9	30.5	7.98	1317	300
28	4	Flexible	2.60	1.0	2.1	37.0	4.95	2054	300
29	1.5	Flexible	1.55	0.8	1.8	27.5	13.3	970	300
29	2.5	Flexible	2.00	0.8	1.9	30.5	7.98	1308	300
29	4	Flexible	2.60	1.0	2.1	37.0	4.95	2047	300
30	1.5	Flexible	1.55	0.8	1.8	27.5	13.3	993	300
30	2.5	Flexible	2.00	0.8	1.9	30.5	7.98	1341	300
30	4	Flexible	2.60	1.0	2.1	37.0	4.95	2101	300