

SPECIFICATION

For

0.6/1KV-VCT

0.6/1(1.2)kV

PVC Insulated PVC Sheathed

with Protection Earthed Cabtyre Cable

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

BY



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APP. _____

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CUSTOMER

Rev.	Date	Description
0	19/9/2024	Issued 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 with protection earthed cable.

The cable shall be based on IEC 60502-1 : 2021.

The finished cables shall meet the flame 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 mm² to 240 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 length of lay or PVC rod to give the completed cable a substantially circular cross section.

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

5. Core Identification

The cores shall be identified by colors, as follows :

2-cores + PE : blue, brown + green/yellow

3-cores + PE : brown, black, grey + green/yellow

4-cores + PE : blue, brown, black, grey + green/yellow

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 not be 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 "CABTYRE 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 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 operation.

Each package shall be clearly marked as follows.

1. Designation "0.6/1KV-VCT"
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, kV..... 3.5

Sample Tests

- Construction specified in Table 1

Type Tests

- Flame retardant tested according to IEC 60332-1.

Definition concerning the tests

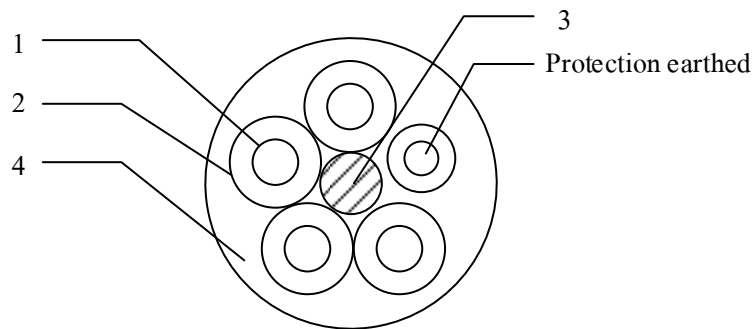
Routine tests: Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

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 uncoated annealed copper
2	Insulation	Polyvinyl chloride (PVC/A) compound
3	Filler	PVC rod (if necessary)
4	Sheath	Polyvinyl chloride (PVC/ST1) compound

Application: Use for installation in open tray, conduit, underground duct trench or direct burial in ground, at wet or dry location. Maximum conductor temperature of 70°C for normal operation and 160°C for short circuit conditions.

Table 1

No. of Cores and Size (Core x 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)	Packing length per reel (m)
2+PE x 1.5/1.5	Flexible	1.60	0.8	1.8	12.0	13.3	171	500
2+PE x 2.5/2.5	Flexible	2.10	0.8	1.8	13.0	7.98	219	500
2+PE x 4/4	Flexible	2.60	1.0	2.0	15.5	4.95	324	500
2+PE x 6/6	Flexible	3.40	1.0	2.1	17.5	3.30	440	500
2+PE x 10/10	Flexible	4.60	1.0	2.3	20.5	1.91	665	500
2+PE x 16/16	Flexible	5.60	1.0	2.4	22.5	1.21	894	500
2+PE x 25/16	Flexible	6.90	1.2	2.6	26.0	0.780	1191	500
2+PE x 35/16	Flexible	8.30	1.2	2.8	28.5	0.554	1511	500
2+PE x 50/25	Flexible	9.90	1.4	3.0	33.5	0.386	2098	500
2+PE x 70/35	Flexible	11.80	1.4	3.3	38.0	0.272	2827	500
2+PE x 95/50	Flexible	13.60	1.6	3.6	43.5	0.206	3731	500
2+PE x 120/70	Flexible	15.60	1.6	3.9	48.5	0.161	4800	500
2+PE x 150/95	Flexible	17.40	1.8	4.2	54.0	0.129	5994	500
2+PE x 185/95	Flexible	18.80	2.0	4.4	57.5	0.106	6795	500
2+PE x 240/120	Flexible	21.70	2.2	4.9	65.0	0.0801	8880	500

Table 1 (continued)

No. of Cores and Size (Core x 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)	Packing length per reel (m)
3+PE x 1.5/1.5	Flexible	1.60	0.8	1.8	13.0	13.3	200	500
3+PE x 2.5/2.5	Flexible	2.10	0.8	1.9	14.0	7.98	267	500
3+PE x 4/4	Flexible	2.60	1.0	2.1	17.0	4.95	401	500
3+PE x 6/6	Flexible	3.40	1.0	2.2	19.0	3.30	549	500
3+PE x 10/10	Flexible	4.60	1.0	2.4	22.5	1.91	830	500
3+PE x 16/16	Flexible	5.60	1.0	2.5	25.0	1.21	1125	500
3+PE x 25/16	Flexible	6.90	1.2	2.8	29.0	0.780	1549	500
3+PE x 35/16	Flexible	8.30	1.2	2.9	31.5	0.554	1975	500
3+PE x 50/25	Flexible	9.90	1.4	3.3	37.5	0.386	2778	500
3+PE x 70/35	Flexible	11.80	1.4	3.5	42.0	0.272	3721	500
3+PE x 95/50	Flexible	13.60	1.6	3.9	48.5	0.206	4936	500
3+PE x 120/70	Flexible	15.60	1.6	4.2	54.0	0.161	6326	500
3+PE x 150/70	Flexible	17.40	1.8	4.5	59.0	0.129	7566	500
3+PE x 150/95	Flexible	17.40	1.8	4.6	60.5	0.129	7903	500
3+PE x 185/95	Flexible	18.80	2.0	4.8	64.5	0.106	9013	300
3+PE x 240/120	Flexible	21.70	2.2	5.3	73.0	0.0801	11773	300

Table 1 (continued)

No. of Cores and Size (Core x 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)	Packing length per reel (m)
4+PE x 1.5/1.5	Flexible	1.60	0.8	1.9	14.0	13.3	247	500
4+PE x 2.5/2.5	Flexible	2.10	0.8	2.0	16.0	7.98	333	500
4+PE x 4/4	Flexible	2.60	1.0	2.2	18.5	4.95	496	500
4+PE x 6/6	Flexible	3.40	1.0	2.3	21.0	3.30	673	500
4+PE x 10/10	Flexible	4.60	1.0	2.5	24.5	1.91	1024	500
4+PE x 16/16	Flexible	5.60	1.0	2.7	28.0	1.21	1410	500
4+PE x 25/16	Flexible	6.90	1.2	3.0	33.0	0.780	1981	500
4+PE x 35/16	Flexible	8.30	1.2	3.2	36.5	0.554	2555	500
4+PE x 35/35	Flexible	8.30	1.2	3.3	37.5	0.554	2825	500
4+PE x 50/25	Flexible	9.90	1.4	3.6	43.0	0.386	3571	500
4+PE x 50/50	Flexible	9.90	1.4	3.6	43.5	0.386	3895	500
4+PE x 70/35	Flexible	11.80	1.4	3.9	48.5	0.272	4708	500
4+PE x 95/50	Flexible	13.60	1.6	4.3	56.0	0.206	6348	500
4+PE x 95/95	Flexible	13.60	1.6	4.4	57.5	0.206	6909	500
4+PE x 120/70	Flexible	15.60	1.6	4.7	62.5	0.161	8150	500
4+PE x 120/120	Flexible	15.60	1.6	4.8	63.5	0.161	8756	500
4+PE x 150/95	Flexible	17.40	1.8	5.1	69.5	0.129	10119	300
4+PE x 150/150	Flexible	17.40	1.8	5.2	70.5	0.129	10743	300
4+PE x 185/95	Flexible	18.80	2.0	5.4	74.5	0.106	11808	300
4+PE x 240/120	Flexible	21.70	2.2	6.0	84.0	0.0801	15491	200

Table 1 (continued)

FOR PROTECTION EARTHED CONDUCTORS

No. of core	Size (mm ²)	Conductor type	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Conductor resistance at 20°C maximum (Ohm/km)
1	1.5	Flexible	1.60	0.8	13.3
1	2.5	Flexible	2.10	0.8	7.98
1	4	Flexible	2.60	1.0	4.95
1	6	Flexible	3.40	1.0	3.30
1	10	Flexible	4.60	1.0	1.91
1	16	Flexible	5.60	1.0	1.21
1	25	Flexible	6.90	1.2	0.780
1	35	Flexible	8.30	1.2	0.554
1	50	Flexible	9.90	1.4	0.386
1	70	Flexible	11.80	1.4	0.272
1	95	Flexible	13.60	1.6	0.206
1	120	Flexible	15.60	1.6	0.161
1	150	Flexible	17.40	1.8	0.129