

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

0.6/1(1.2)kV

XLPE Insulated PE Sheathed

Power Cable

(0.6/1(1.2)kV, Cu/XLPE/PE)

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CUSTOMER

Rev.	Date	Description
0	25/11/2019	Issued specification
1	15/03/2021	Delete cable code "0010"
2	31/1/2024	Update Table 1
3	13/3/2024	Add size 1 x 1.5 - 10 mm ² and change 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 1000V copper conductor cross-linked polyethylene (XLPE) insulated polyethylene (PE) sheathed power cable.

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

2. Conductor

For size $\leq 6 \text{ mm}^2$:

The conductor shall be non-compacted concentric stranded uncoated annealed copper conductor in accordance with IEC 60228 : 2004, Class 2.

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

For size $\geq 10 \text{ mm}^2$:

The conductor shall be compacted concentric stranded uncoated annealed copper conductor in accordance with IEC 60228 : 2004, Class 2.

The direction of lay shall be left-hand (S) lay in the outermost layer.

3. Insulation

The insulation shall be cross-linked polyethylene (XLPE) 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 (For multi-cores only)

The individual insulated cores shall be cabled together with 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 color, as follows :

Single-core : white

2-cores : blue, brown

3-cores : brown, black, grey

4-cores : blue, brown, black, grey

5-cores : blue, brown, black, grey, green/yellow

(White color is natural color of XLPE insulation)

6. Sheath

The sheath shall be sunlight resistant polyethylene (PE/ST7) 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 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 "XLPE/PE"
6. Type of cable "POWER CABLE"
7. Number of cores and size of conductor
8. TIS logo and standard number (For single-core only)
9. The continuous reel length marking (in figure) shall be made on the sheath at every 1 meter (For single-core size $\geq 10 \text{ mm}^2$)

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 and IEC 60228 : 2004.


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-CE"
2. Number of cores and size of cable
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
- Hot set test at $200\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ for XLPE
 - Maximum elongation under load (%) 175
 - Maximum permanent elongation after cooling (%)..... 15

Definition concerning the tests

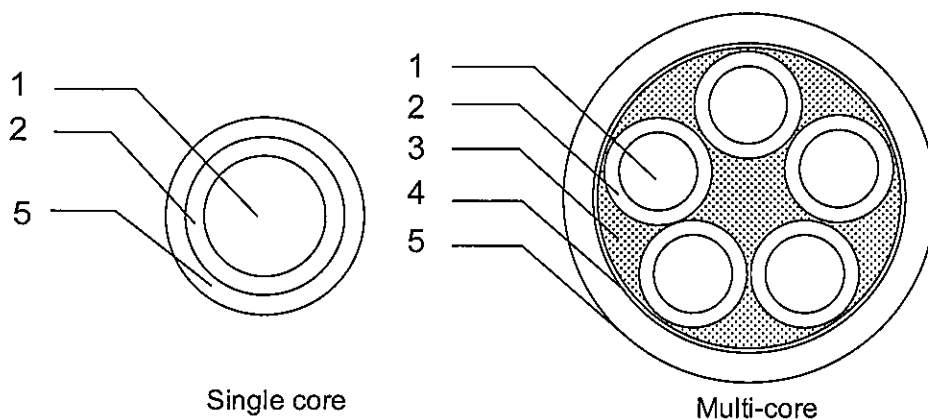
Routine tests: Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

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	Stranded annealed copper
2	Insulation	Cross-linked polyethylene (XLPE)
3	Filler	Non-hygroscopic
4	Binder Tape	Spun bond tape or suitable tape
5	Sheath	Polyethylene (PE/ST7)

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 90°C for normal operation and 250°C for short circuit conditions.

Table 1

No. of core	Size (mm ²)	Conductor (wires/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)
1	1.5	7/Non-compacted	1.59	0.7	1.4	6.5	12.1	40	500
1	2.5	7/Non-compacted	2.01	0.7	1.4	7.0	7.41	50	500
1	4	7/Non-compacted	2.55	0.7	1.4	7.5	4.61	70	500
1	6	7/Non-compacted	3.12	0.7	1.4	8.0	3.08	90	500
1	10	7/Compacted	3.80	0.7	1.4	8.5	1.83	130	500
1	16	7/Compacted	4.80	0.7	1.4	9.5	1.15	190	500
1	25	7/Compacted	6.00	0.9	1.4	11.5	0.727	280	500
1	35	7/Compacted	7.10	0.9	1.4	12.5	0.524	380	500
1	50	19/Compacted	8.30	1.0	1.4	14.0	0.387	500	500
1	70	19/Compacted	9.90	1.1	1.4	15.5	0.268	700	500
1	95	19/Compacted	11.70	1.1	1.5	18.0	0.193	950	500
1	120	37/Compacted	13.20	1.2	1.5	19.5	0.153	1200	500
1	150	37/Compacted	14.60	1.4	1.6	21.5	0.124	1480	500
1	185	37/Compacted	16.30	1.6	1.6	24.0	0.0991	1840	500
1	240	61/Compacted	18.70	1.7	1.7	26.5	0.0754	2400	500
1	300	61/Compacted	20.90	1.8	1.8	29.0	0.0601	2960	500
1	400	61/Compacted	23.50	2.0	1.9	32.5	0.0470	3800	500
1	500	61/Compacted	26.70	2.2	2.0	36.5	0.0366	4860	500
1	630	61/Compacted	30.30	2.4	2.2	41.0	0.0283	6240	500
1	800	61/Compacted	34.10	2.6	2.3	45.0	0.0221	7820	500
1	1000	127/Compacted	39.50	2.8	2.4	51.0	0.0176	10240	300

Table 1 (Continued)

No. of cores	Size (mm ²)	Conductor (wires/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	7/Non-compacted	1.59	0.7	1.8	11.5	12.1	100	500
2	2.5	7/Non-compacted	2.01	0.7	1.8	12.5	7.41	130	500
2	4	7/Non-compacted	2.55	0.7	1.8	13.5	4.61	170	500
2	6	7/Non-compacted	3.12	0.7	1.8	14.5	3.08	220	500
2	10	7/Compacted	3.80	0.7	1.8	15.5	1.83	300	500
2	16	7/Compacted	4.80	0.7	1.8	17.5	1.15	430	500
2	25	7/Compacted	6.00	0.9	1.8	21.0	0.727	650	500
2	35	7/Compacted	7.10	0.9	1.8	23.0	0.524	860	500
2	50	19/Compacted	8.30	1.0	1.8	26.0	0.387	1130	500
2	70	19/Compacted	9.90	1.1	1.8	29.5	0.268	1580	500
2	95	19/Compacted	11.70	1.1	2.0	34.0	0.193	2150	500
2	120	37/Compacted	13.20	1.2	2.1	37.5	0.153	2720	500
2	150	37/Compacted	14.60	1.4	2.2	41.5	0.124	3340	500
2	185	37/Compacted	16.30	1.6	2.3	46.0	0.0991	4180	500
2	240	61/Compacted	18.70	1.7	2.5	52.0	0.0754	5430	500
2	300	61/Compacted	20.90	1.8	2.7	57.0	0.0601	6750	500
2	400	61/Compacted	23.50	2.0	2.9	63.5	0.0470	8570	500

Table 1 (Continued)

No. of cores	Size (mm ²)	Conductor (wires/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)
3	1.5	7/Non-compacted	1.59	0.7	1.8	12.0	12.1	120	500
3	2.5	7/Non-compacted	2.01	0.7	1.8	13.0	7.41	160	500
3	4	7/Non-compacted	2.55	0.7	1.8	14.0	4.61	210	500
3	6	7/Non-compacted	3.12	0.7	1.8	15.5	3.08	280	500
3	10	7/Compacted	3.80	0.7	1.8	16.5	1.83	390	500
3	16	7/Compacted	4.80	0.7	1.8	18.5	1.15	580	500
3	25	7/Compacted	6.00	0.9	1.8	22.5	0.727	870	500
3	35	7/Compacted	7.10	0.9	1.8	24.5	0.524	1170	500
3	50	19/Compacted	8.30	1.0	1.8	27.5	0.387	1550	500
3	70	19/Compacted	9.90	1.1	1.9	32.0	0.268	2190	500
3	95	19/Compacted	11.70	1.1	2.0	36.0	0.193	2990	500
3	120	37/Compacted	13.20	1.2	2.1	40.0	0.153	3790	500
3	150	37/Compacted	14.60	1.4	2.3	44.5	0.124	4680	500
3	185	37/Compacted	16.30	1.6	2.4	49.5	0.0991	5850	500
3	240	61/Compacted	18.70	1.7	2.6	55.5	0.0754	7630	500
3	300	61/Compacted	20.90	1.8	2.8	61.0	0.0601	9500	300
3	400	61/Compacted	23.50	2.0	3.1	69.0	0.0470	12090	300

Table 1 (Continued)

No. of cores	Size (mm ²)	Conductor (wires/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)
4	1.5	7/Non-compacted	1.59	0.7	1.8	12.5	12.1	150	500
4	2.5	7/Non-compacted	2.01	0.7	1.8	14.0	7.41	190	500
4	4	7/Non-compacted	2.55	0.7	1.8	15.0	4.61	260	500
4	6	7/Non-compacted	3.12	0.7	1.8	16.5	3.08	350	500
4	10	7/Compacted	3.80	0.7	1.8	18.0	1.83	500	500
4	16	7/Compacted	4.80	0.7	1.8	20.0	1.15	750	500
4	25	7/Compacted	6.00	0.9	1.8	24.5	0.727	1140	500
4	35	7/Compacted	7.10	0.9	1.8	27.0	0.524	1520	500
4	50	19/Compacted	8.30	1.0	1.9	30.5	0.387	2030	500
4	70	19/Compacted	9.90	1.1	2.0	35.5	0.268	2870	500
4	95	19/Compacted	11.70	1.1	2.1	40.0	0.193	3910	500
4	120	37/Compacted	13.20	1.2	2.3	44.5	0.153	4980	500
4	150	37/Compacted	14.60	1.4	2.4	49.0	0.124	6140	500
4	185	37/Compacted	16.30	1.6	2.6	55.0	0.0991	7690	500
4	240	61/Compacted	18.70	1.7	2.8	62.0	0.0754	10020	300
4	300	61/Compacted	20.90	1.8	3.0	68.5	0.0601	12500	300
4	400	61/Compacted	23.50	2.0	3.3	76.5	0.0470	15900	200

Table 1 (Continued)

No. of cores	Size (mm ²)	Conductor (wires/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	7/Non-compacted	1.59	0.7	1.8	13.5	12.1	170	500
5	2.5	7/Non-compacted	2.01	0.7	1.8	15.0	7.41	230	500
5	4	7/Non-compacted	2.55	0.7	1.8	16.5	4.61	320	500
5	6	7/Non-compacted	3.12	0.7	1.8	18.0	3.08	430	500
5	10	7/Compacted	3.80	0.7	1.8	19.5	1.83	610	500
5	16	7/Compacted	4.80	0.7	1.8	22.0	1.15	920	500
5	25	7/Compacted	6.00	0.9	1.8	26.5	0.727	1410	500
5	35	7/Compacted	7.10	0.9	1.8	29.5	0.524	1890	500
5	50	19/Compacted	8.30	1.0	2.0	34.0	0.387	2510	500
5	70	19/Compacted	9.90	1.1	2.1	39.0	0.268	3590	500
5	95	19/Compacted	11.70	1.1	2.3	44.5	0.193	4890	500
5	120	37/Compacted	13.20	1.2	2.4	49.5	0.153	6190	500
5	150	37/Compacted	14.60	1.4	2.6	54.5	0.124	7660	500
5	185	37/Compacted	16.30	1.6	2.8	61.5	0.0991	9580	500
5	240	61/Compacted	18.70	1.7	3.0	69.0	0.0754	12520	300
5	300	61/Compacted	20.90	1.8	3.2	76.0	0.0601	15590	300
5	400	61/Compacted	23.50	2.0	3.6	85.0	0.0470	19880	200