

SPECIFICATION

For

0.6/1KV-VV

0.6/1(1.2)kV

PVC Insulated PVC Sheathed

Power Cable

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

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Rev.	Date	Description
0	17/10/2019	Issued specification
1	7/1/2021	Change marking on cable
2	28/3/2024	Update specification

APP. _____
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CUSTOMER

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 power cable.

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

The finished cables shall meet the flame test requirements per IEC 60332-1.

2. Conductor

The conductor shall be solid and non-compacted concentric stranded uncoated annealed copper conductor in accordance with IEC 60228 : 2004, Class 1 and Class 2.

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

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 (For multi-cores only)

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, as follows :

Single-core : black

2-cores : blue, brown

3-cores : brown, black, grey

4-cores : blue, brown, black, grey

5-cores : 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 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 "POWER CABLE"
7. Number of cores and size of conductor
8. TIS logo and standard number (For size 1x 1.5 to 1 x 95 mm²)
9. The continuous reel length marking (in figure) shall be made on the sheath at every 1 meter (For single-core size 6 up to 1000 mm²)

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 operations.

Each reel shall be clearly marked as follows.

1. Designation "0.6/1KV-VV"
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

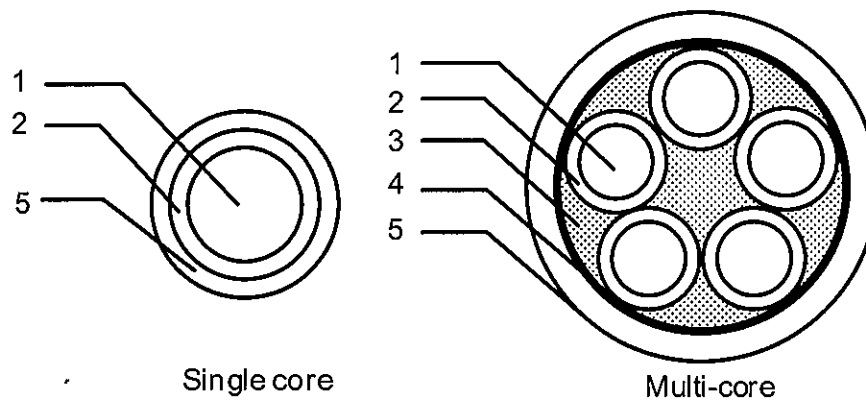
Routine tests: Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

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	Solid and stranded annealed copper
2	Insulation	Polyvinyl chloride (PVC/A)
3	Filler	Non-hygroscopic
4	Binder Tape	Spun bond tape or suitable tape
5	Sheath	Polyvinyl chloride (PVC/ST1)

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 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	Solid	1.38	0.8	1.4	6.5	12.1	55	500
1	2.5	Solid	1.78	0.8	1.4	7.0	7.41	70	500
1	4	Solid	2.25	1.0	1.4	8.0	4.61	95	500
1	6	7/Non-compacted	3.12	1.0	1.4	9.0	3.08	130	500
1	10	7/Non-compacted	4.10	1.0	1.4	10.0	1.83	180	500
1	16	7/Non-compacted	5.10	1.0	1.4	10.5	1.15	240	500
1	25	7/Non-compacted	6.26	1.2	1.4	12.5	0.727	340	500
1	35	19/Non-compacted	7.65	1.2	1.4	13.5	0.524	460	500
1	50	19/Non-compacted	8.73	1.4	1.4	15.0	0.387	580	500
1	70	19/Non-compacted	10.70	1.4	1.4	17.0	0.268	820	500
1	95	19/Non-compacted	12.60	1.6	1.5	20.0	0.193	1120	500
1	120	37/Non-compacted	14.21	1.6	1.5	21.5	0.153	1380	500
1	150	37/Non-compacted	15.75	1.8	1.6	24.0	0.124	1680	500
1	185	37/Non-compacted	17.64	2.0	1.7	26.5	0.0991	2090	500
1	240	61/Non-compacted	20.25	2.2	1.8	29.5	0.0754	2710	500
1	300	61/Non-compacted	22.68	2.4	1.9	32.5	0.0601	3360	500
1	400	61/Non-compacted	25.65	2.6	2.0	36.5	0.0470	4260	500
1	500	61/Non-compacted	28.80	2.8	2.1	40.0	0.0366	5310	500
1	630	127/Non-compacted	32.76	2.8	2.2	44.0	0.0283	6720	500
1	800	127/Non-compacted	37.05	2.8	2.3	48.5	0.0221	8470	500
1	1000	127/Non-compacted	41.60	3.0	2.5	54.0	0.0176	10610	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	Solid	1.38	0.8	1.8	11.5	12.1	140	500
2	2.5	Solid	1.78	0.8	1.8	12.5	7.41	170	500
2	4	Solid	2.25	1.0	1.8	14.0	4.61	230	500
2	6	7/Non-compacted	3.12	1.0	1.8	16.0	3.08	300	500
2	10	7/Non-compacted	4.10	1.0	1.8	17.5	1.83	410	500
2	16	7/Non-compacted	5.10	1.0	1.8	20.0	1.15	560	500
2	25	7/Non-compacted	6.26	1.2	1.8	23.0	0.727	780	500
2	35	19/Non-compacted	7.65	1.2	1.8	26.0	0.524	1030	500
2	50	19/Non-compacted	8.73	1.4	1.8	29.0	0.387	1320	500
2	70	19/Non-compacted	10.70	1.4	1.9	33.0	0.268	1850	500
2	95	19/Non-compacted	12.60	1.6	2.0	38.5	0.193	2500	500
2	120	37/Non-compacted	14.21	1.6	2.1	42.0	0.153	3090	500
2	150	37/Non-compacted	15.75	1.8	2.2	46.0	0.124	3720	500
2	185	37/Non-compacted	17.64	2.0	2.4	51.0	0.0991	4650	500
2	240	61/Non-compacted	20.25	2.2	2.6	57.5	0.0754	6010	500
2	300	61/Non-compacted	22.68	2.4	2.7	63.5	0.0601	7440	500
2	400	61/Non-compacted	25.65	2.6	3.0	71.0	0.0470	9470	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)
3	1.5	Solid	1.38	0.8	1.8	12.0	12.1	160	500
3	2.5	Solid	1.78	0.8	1.8	13.0	7.41	200	500
3	4	Solid	2.25	1.0	1.8	15.0	4.61	280	500
3	6	7/Non-compacted	3.12	1.0	1.8	16.5	3.08	380	500
3	10	7/Non-compacted	4.10	1.0	1.8	18.5	1.83	530	500
3	16	7/Non-compacted	5.10	1.0	1.8	21.0	1.15	740	500
3	25	7/Non-compacted	6.26	1.2	1.8	24.0	0.727	1060	500
3	35	19/Non-compacted	7.65	1.2	1.8	27.5	0.524	1410	500
3	50	19/Non-compacted	8.73	1.4	1.8	30.5	0.387	1800	500
3	70	19/Non-compacted	10.70	1.4	2.0	35.0	0.268	2570	500
3	95	19/Non-compacted	12.60	1.6	2.1	40.5	0.193	3500	500
3	120	37/Non-compacted	14.21	1.6	2.2	44.5	0.153	4330	500
3	150	37/Non-compacted	15.75	1.8	2.3	49.0	0.124	5390	500
3	185	37/Non-compacted	17.64	2.0	2.5	54.5	0.0991	6720	500
3	240	61/Non-compacted	20.25	2.2	2.7	61.5	0.0754	8700	500
3	300	61/Non-compacted	22.68	2.4	2.9	67.5	0.0601	10800	300
3	400	61/Non-compacted	25.65	2.6	3.1	75.5	0.0470	13710	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	Solid	1.38	0.8	1.8	13.0	12.1	190	500
4	2.5	Solid	1.78	0.8	1.8	14.0	7.41	240	500
4	4	Solid	2.25	1.0	1.8	16.0	4.61	350	500
4	6	7/Non-compacted	3.12	1.0	1.8	18.0	3.08	470	500
4	10	7/Non-compacted	4.10	1.0	1.8	20.5	1.83	670	500
4	16	7/Non-compacted	5.10	1.0	1.8	22.5	1.15	940	500
4	25	7/Non-compacted	6.26	1.2	1.8	26.5	0.727	1360	500
4	35	19/Non-compacted	7.65	1.2	1.8	30.0	0.524	1840	500
4	50	19/Non-compacted	8.73	1.4	1.9	34.0	0.387	2380	500
4	70	19/Non-compacted	10.70	1.4	2.1	39.0	0.268	3350	500
4	95	19/Non-compacted	12.60	1.6	2.2	45.0	0.193	4580	500
4	120	37/Non-compacted	14.21	1.6	2.4	49.5	0.153	5690	500
4	150	37/Non-compacted	15.75	1.8	2.5	54.5	0.124	6930	500
4	185	37/Non-compacted	17.64	2.0	2.7	60.5	0.0991	8600	500
4	240	61/Non-compacted	20.25	2.2	2.9	68.0	0.0754	11180	300
4	300	61/Non-compacted	22.68	2.4	3.1	75.5	0.0601	13910	300
4	400	61/Non-compacted	25.65	2.6	3.4	84.5	0.0470	17670	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	Solid	1.38	0.8	1.8	14.0	12.1	220	500
5	2.5	Solid	1.78	0.8	1.8	15.0	7.41	290	500
5	4	Solid	2.25	1.0	1.8	17.5	4.61	410	500
5	6	7/Non-compacted	3.12	1.0	1.8	20.0	3.08	570	500
5	10	7/Non-compacted	4.10	1.0	1.8	22.5	1.83	820	500
5	16	7/Non-compacted	5.10	1.0	1.8	25.0	1.15	1160	500
5	25	7/Non-compacted	6.26	1.2	1.8	29.5	0.727	1640	500
5	35	19/Non-compacted	7.65	1.2	1.9	33.5	0.524	2230	500
5	50	19/Non-compacted	8.73	1.4	2.1	38.0	0.387	2910	500
5	70	19/Non-compacted	10.70	1.4	2.2	43.5	0.268	4130	500
5	95	19/Non-compacted	12.60	1.6	2.4	50.5	0.193	5670	500
5	120	37/Non-compacted	14.21	1.6	2.5	55.5	0.153	7020	500
5	150	37/Non-compacted	15.75	1.8	2.7	61.0	0.124	8580	500
5	185	37/Non-compacted	17.64	2.0	2.9	68.0	0.0991	10720	300
5	240	61/Non-compacted	20.25	2.2	3.1	77.0	0.0754	13910	300
5	300	61/Non-compacted	22.68	2.4	3.3	85.0	0.0601	17310	200
5	400	61/Non-compacted	25.65	2.6	3.7	95.0	0.0470	22000	200