

SPECIFICATION

For

0.6/1KV-VV

0.6/1(1.2)kV

PVC Insulated PVC Sheathed

Power Cable

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

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CUSTOMER

Rev.	Date	Description
0	17/10/2019	Issued specification
1	7/1/2021	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 polyvinyl chloride (PVC) insulated polyvinyl chloride (PVC) sheathed power cable.

The cable shall be in accordance with IEC 60502-1 : 2004 and Amend.1 : 2009.

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 : 2004.

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

The minimum thickness shall not fall below the value in Table 1 by more than 10% plus 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 : 2004.


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

The minimum thickness shall not fall below the value in Table 1 by more than 20% plus 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 10 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 : 2004 and Amend.1 : 2009, 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

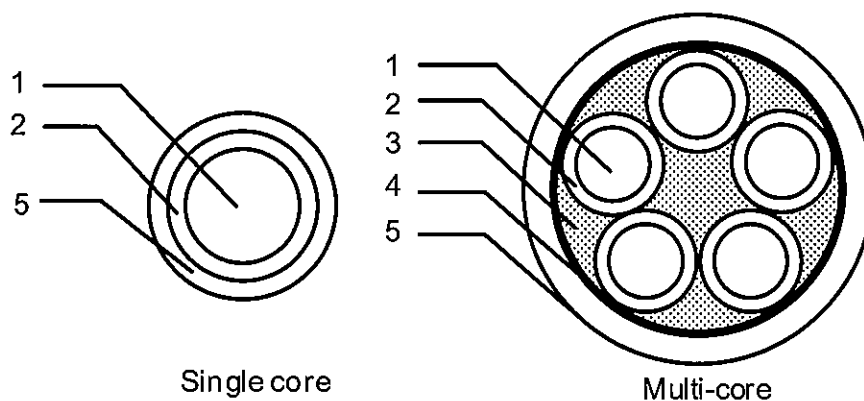
Routine tests: Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

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 & Non-compacted concentric stranded annealed copper
2	Insulation	Polyvinyl chloride (PVC/A)
3	Filler	PP Calcium Yarn (Non-hygroscopic)
4	Binder Tape	Spunbond 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	50	500
1	2.5	Solid	1.78	0.8	1.4	7.0	7.41	65	500
1	4	Solid	2.25	1.0	1.4	8.0	4.61	90	500
1	6	7/Non-compacted	3.12	1.0	1.4	9.0	3.08	120	500
1	10	7/Non-compacted	3.98	1.0	1.4	10.0	1.83	160	500
1	16	7/Non-compacted	5.10	1.0	1.4	10.5	1.15	230	500
1	25	7/Non-compacted	6.26	1.2	1.4	12.5	0.727	330	500
1	35	19/Non-compacted	7.65	1.2	1.4	13.5	0.524	450	500
1	50	19/Non-compacted	8.73	1.4	1.4	15.0	0.387	550	500
1	70	19/Non-compacted	10.70	1.4	1.4	17.0	0.268	800	500
1	95	19/Non-compacted	12.60	1.6	1.5	20.0	0.193	1100	500
1	120	37/Non-compacted	14.21	1.6	1.5	21.5	0.153	1400	500
1	150	37/Non-compacted	15.75	1.8	1.6	24.0	0.124	1700	500
1	185	37/Non-compacted	17.64	2.0	1.7	26.5	0.0991	2100	500
1	240	61/Non-compacted	20.25	2.2	1.8	29.5	0.0754	2700	500
1	300	61/Non-compacted	22.68	2.4	1.9	32.5	0.0601	3300	500
1	400	61/Non-compacted	25.65	2.6	2.0	36.5	0.0470	4200	500
1	500	61/Non-compacted	28.80	2.8	2.1	40.0	0.0366	5500	500
1	630	127/Non-compacted	32.76	2.8	2.2	44.0	0.0283	6500	500
1	800	127/Non-compacted	37.05	2.8	2.3	48.5	0.0221	8500	500
1	1000	127/Non-compacted	41.60	3.0	2.5	54.0	0.0176	10500	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	130	500
2	2.5	Solid	1.78	0.8	1.8	12.5	7.41	160	500
2	4	Solid	2.25	1.0	1.8	14.0	4.61	220	500
2	6	7/Non-compacted	3.12	1.0	1.8	16.0	3.08	290	500
2	10	7/Non-compacted	3.98	1.0	1.8	17.5	1.83	390	500
2	16	7/Non-compacted	5.10	1.0	1.8	20.0	1.15	550	500
2	25	7/Non-compacted	6.26	1.2	1.8	23.0	0.727	750	500
2	35	19/Non-compacted	7.65	1.2	1.8	26.0	0.524	1000	500
2	50	19/Non-compacted	8.73	1.4	1.8	29.0	0.387	1300	500
2	70	19/Non-compacted	10.70	1.4	1.9	33.0	0.268	1800	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	3100	500
2	150	37/Non-compacted	15.75	1.8	2.2	46.0	0.124	3700	500
2	185	37/Non-compacted	17.64	2.0	2.4	51.0	0.0991	4600	500
2	240	61/Non-compacted	20.25	2.2	2.6	57.5	0.0754	6000	500
2	300	61/Non-compacted	22.68	2.4	2.7	63.5	0.0601	7500	500
2	400	61/Non-compacted	25.65	2.6	3.0	71.0	0.0470	9500	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	150	500
3	2.5	Solid	1.78	0.8	1.8	13.0	7.41	190	500
3	4	Solid	2.25	1.0	1.8	15.0	4.61	270	500
3	6	7/Non-compacted	3.12	1.0	1.8	16.5	3.08	370	500
3	10	7/Non-compacted	3.98	1.0	1.8	18.5	1.83	500	500
3	16	7/Non-compacted	5.10	1.0	1.8	21.0	1.15	750	500
3	25	7/Non-compacted	6.26	1.2	1.8	24.0	0.727	1000	500
3	35	19/Non-compacted	7.65	1.2	1.8	27.5	0.524	1400	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	2500	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	4300	500
3	150	37/Non-compacted	15.75	1.8	2.3	49.0	0.124	5500	500
3	185	37/Non-compacted	17.64	2.0	2.5	54.5	0.0991	6500	500
3	240	61/Non-compacted	20.25	2.2	2.7	61.5	0.0754	8500	500
3	300	61/Non-compacted	22.68	2.4	2.9	67.5	0.0601	10500	300
3	400	61/Non-compacted	25.65	2.6	3.1	75.5	0.0470	13500	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	180	500
4	2.5	Solid	1.78	0.8	1.8	14.0	7.41	230	500
4	4	Solid	2.25	1.0	1.8	16.0	4.61	340	500
4	6	7/Non-compacted	3.12	1.0	1.8	18.0	3.08	460	500
4	10	7/Non-compacted	3.98	1.0	1.8	20.0	1.83	650	500
4	16	7/Non-compacted	5.10	1.0	1.8	22.5	1.15	950	500
4	25	7/Non-compacted	6.26	1.2	1.8	26.5	0.727	1300	500
4	35	19/Non-compacted	7.65	1.2	1.8	30.0	0.524	1800	500
4	50	19/Non-compacted	8.73	1.4	1.9	34.0	0.387	2400	500
4	70	19/Non-compacted	10.70	1.4	2.1	39.0	0.268	3300	500
4	95	19/Non-compacted	12.60	1.6	2.2	45.0	0.193	4500	500
4	120	37/Non-compacted	14.21	1.6	2.4	49.5	0.153	5500	500
4	150	37/Non-compacted	15.75	1.8	2.5	54.5	0.124	7000	500
4	185	37/Non-compacted	17.64	2.0	2.7	60.5	0.0991	8500	500
4	240	61/Non-compacted	20.25	2.2	2.9	68.0	0.0754	11000	300
4	300	61/Non-compacted	22.68	2.4	3.1	75.5	0.0601	14000	300
4	400	61/Non-compacted	25.65	2.6	3.4	84.5	0.0470	17500	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	210	500
5	2.5	Solid	1.78	0.8	1.8	15.0	7.41	280	500
5	4	Solid	2.25	1.0	1.8	17.5	4.61	400	500
5	6	7/Non-compacted	3.12	1.0	1.8	20.0	3.08	550	500
5	10	7/Non-compacted	3.98	1.0	1.8	22.0	1.83	800	500
5	16	7/Non-compacted	5.10	1.0	1.8	25.0	1.15	1100	500
5	25	7/Non-compacted	6.26	1.2	1.8	29.5	0.727	1600	500
5	35	19/Non-compacted	7.65	1.2	1.9	33.5	0.524	2200	500