

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

0.6/1(1.2)kV

PVC Insulated PVC Sheathed

Cabtyre Cable

(0.6/1kV Cu/PVC/PVC)

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Rev.	Date	Description
0	8/10/2019	Issued specification
1	21/6/2021	Cancel code "0010"
2	24/9/2021	Add 5-cores

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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 cable.

The cable shall be based on 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 flexible stranded uncoated annealed copper conductor in accordance with IEC 60228 : 2004, Class 5.

For size 1.5 to 4 mm<sup>2</sup> and  $\geq 400$  mm<sup>2</sup> : The direction of lay shall be left-hand (S) lay.

For size 6 mm<sup>2</sup> to 300 mm<sup>2</sup> : 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 : 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 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 :

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 insulation "PVC"
5. Type of cable "CABTYRE CABLE"
6. Number of cores and size of conductor
7. 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 : 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 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

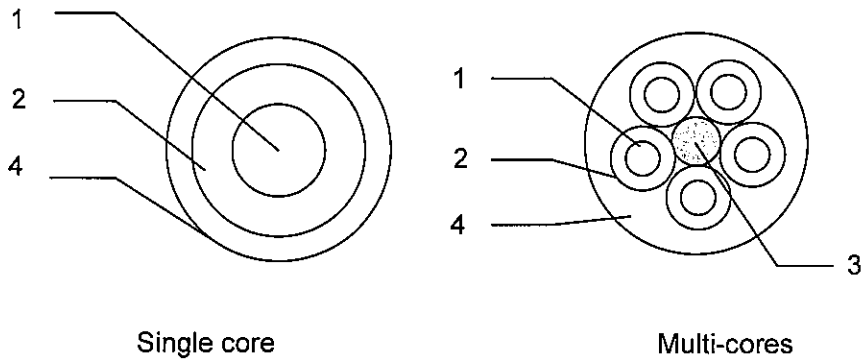
**Routine tests:** Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

**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)
3	Filler	PVC rod
4	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 <sup>2</sup> )	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)
1	10	Flexible	4.60	1.0	1.7	11.0	1.91	190	500
1	16	Flexible	5.60	1.0	1.8	12.0	1.21	260	500
1	25	Flexible	6.90	1.2	1.9	14.0	0.780	380	500
1	35	Flexible	8.30	1.2	2.0	16.0	0.554	500	500
1	50	Flexible	9.90	1.4	2.2	18.0	0.386	700	500
1	70	Flexible	11.80	1.4	2.3	20.5	0.272	950	500
1	95	Flexible	13.60	1.6	2.4	23.0	0.206	1200	500
1	120	Flexible	15.60	1.6	2.6	25.5	0.161	1500	500
1	150	Flexible	17.40	1.8	2.7	27.5	0.129	1900	500
1	185	Flexible	18.80	2.0	2.8	30.0	0.106	2200	500
1	240	Flexible	21.70	2.2	3.1	34.0	0.0801	2900	500
1	300	Flexible	24.30	2.4	3.3	37.5	0.0641	3600	500
1	400	Flexible	32.00	2.6	3.8	46.5	0.0486	4900	500
1	500	Flexible	35.50	2.8	4.1	51.0	0.0384	6000	500
1	630	Flexible	41.00	2.8	4.4	57.0	0.0287	8000	500

**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	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	1.60	0.8	1.7	11.0	13.3	140	500
2	2.5	Flexible	2.10	0.8	1.8	12.5	7.98	180	500
2	4	Flexible	2.60	1.0	1.9	14.5	4.95	260	500
2	6	Flexible	3.40	1.0	2.0	16.5	3.30	350	500
2	10	Flexible	4.60	1.0	2.2	19.0	1.91	500	500
2	16	Flexible	5.60	1.0	2.3	21.5	1.21	700	500
2	25	Flexible	6.90	1.2	2.6	25.5	0.780	1000	500
2	35	Flexible	8.30	1.2	2.8	28.5	0.554	1400	500
2	50	Flexible	9.90	1.4	3.0	33.5	0.386	1900	500
2	70	Flexible	11.80	1.4	3.3	37.5	0.272	2500	500
2	95	Flexible	13.60	1.6	3.6	43.0	0.206	3300	500
2	120	Flexible	15.60	1.6	3.9	48.0	0.161	4100	500
2	150	Flexible	17.40	1.8	4.2	53.0	0.129	5000	500
2	185	Flexible	18.80	2.0	4.4	57.5	0.106	6000	500
2	240	Flexible	21.70	2.2	4.8	65.0	0.0801	8000	500
2	300	Flexible	24.30	2.4	5.2	71.5	0.0641	9500	300
2	400	Flexible	32.00	2.6	6.3	90.0	0.0486	14000	300

**Table 1 (continued)**

No. of cores	Size (mm <sup>2</sup> )	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)
3	1.5	Flexible	1.60	0.8	1.8	12.0	13.3	160	500
3	2.5	Flexible	2.10	0.8	1.8	13.0	7.98	210	500
3	4	Flexible	2.60	1.0	2.0	15.5	4.95	310	500
3	6	Flexible	3.40	1.0	2.1	17.5	3.30	420	500
3	10	Flexible	4.60	1.0	2.3	20.5	1.91	650	500
3	16	Flexible	5.60	1.0	2.4	22.5	1.21	850	500
3	25	Flexible	6.90	1.2	2.7	27.0	0.780	1300	500
3	35	Flexible	8.30	1.2	2.9	30.5	0.554	1700	500
3	50	Flexible	9.90	1.4	3.1	35.5	0.386	2400	500
3	70	Flexible	11.80	1.4	3.4	40.0	0.272	3200	500
3	95	Flexible	13.60	1.6	3.7	45.5	0.206	4200	500
3	120	Flexible	15.60	1.6	4.0	51.0	0.161	5500	500
3	150	Flexible	17.40	1.8	4.3	56.0	0.129	6500	500
3	185	Flexible	18.80	2.0	4.6	61.0	0.106	7500	500
3	240	Flexible	21.70	2.2	5.1	69.0	0.0801	10000	300
3	300	Flexible	24.30	2.4	5.5	76.0	0.0641	12500	300
3	400	Flexible	32.00	2.6	6.7	96.0	0.0486	18000	200



**Table 1 (continued)**

No. of cores	Size  (mm <sup>2</sup> )	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)
4	1.5	Flexible	1.60	0.8	1.8	13.0	13.3	190	500
4	2.5	Flexible	2.10	0.8	1.9	14.0	7.98	260	500
4	4	Flexible	2.60	1.0	2.1	17.0	4.95	380	500
4	6	Flexible	3.40	1.0	2.2	19.0	3.30	550	500
4	10	Flexible	4.60	1.0	2.4	22.5	1.91	800	500
4	16	Flexible	5.60	1.0	2.5	25.0	1.21	1100	500
4	25	Flexible	6.90	1.2	2.8	29.5	0.780	1600	500
4	35	Flexible	8.30	1.2	3.0	33.5	0.554	2200	500
4	50	Flexible	9.90	1.4	3.4	39.0	0.386	3000	500
4	70	Flexible	11.80	1.4	3.7	44.5	0.272	4100	500
4	95	Flexible	13.60	1.6	4.0	51.0	0.206	5500	500
4	120	Flexible	15.60	1.6	4.4	56.5	0.161	7000	500
4	150	Flexible	17.40	1.8	4.7	62.5	0.129	8500	500
4	185	Flexible	18.80	2.0	5.0	67.5	0.106	10000	300
4	240	Flexible	21.70	2.2	5.5	76.5	0.0801	13000	300
4	300	Flexible	24.30	2.4	6.0	85.0	0.0641	16000	200
4	400	Flexible	32.00	2.6	7.3	107.0	0.0486	22500	100

**Table 1 (continued)**

No. of cores	Size (mm <sup>2</sup> )	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	1.60	0.8	1.9	14.0	13.3	240	500
5	2.5	Flexible	2.10	0.8	2.0	16.0	7.98	320	500
5	4	Flexible	2.60	1.0	2.2	18.5	4.95	480	500
5	6	Flexible	3.40	1.0	2.3	21.0	3.30	650	500
5	10	Flexible	4.60	1.0	2.5	24.5	1.91	1000	500
5	16	Flexible	5.60	1.0	2.7	28.0	1.21	1400	500
5	25	Flexible	6.90	1.2	3.0	33.0	0.780	2100	500
5	35	Flexible	8.30	1.2	3.3	37.5	0.554	2800	500
5	70	Flexible	11.80	1.4	4.0	50.0	0.272	5000	500
5	95	Flexible	13.60	1.6	4.4	57.5	0.206	7000	500