

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

0.6/1(1.2)kV PVC Insulated

PVC Inner Sheathed PVC Outer Sheathed

Power Cable

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

BY Wachara  
(Wachara Sangsomritphon)

MANAGER, Cable Design Section

APP. Winai Ariyasakulsap  
(Winai Ariyasakulsap)

MANAGER, Development Department

APP. \_\_\_\_\_  
( )

CUSTOMER

Rev.	Date	Description
0	11/11/2019	Issued specification
1	11/9/2020	Add size 1 x 10 mm <sup>2</sup>
2	25/2/2022	Delete code (0010)

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) inner sheathed polyvinyl chloride (PVC) outer 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, Class1 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 length of lay or PVC rod to give the completed cable a 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. Inner Sheath (For multi-cores only)**

The inner sheath shall be polyvinyl chloride (PVC) compound applied over the cable core.

The approximate thickness given in Table 1.

The color of the inner sheath shall be black.

## 7. Outer Sheath

The outer sheath shall be sunlight resistant polyvinyl chloride (PVC/ST1) compound meet the requirements of IEC 60502-1 : 2004.


The average thickness of the outer sheath shall be not less than the value 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 outer sheath shall be black.

## 8. 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 "POWER CABLE"
6. Number of cores and size of conductor
7. The continuous reel length marking (in figure) shall be made on the outer sheath at every 1 meter

## 9. 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.

## 10. 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-NYY"
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**

This cable shall be tested as followed :

- Flame retardant tested according to IEC 60332-1.

#### **Definition concerning the tests**

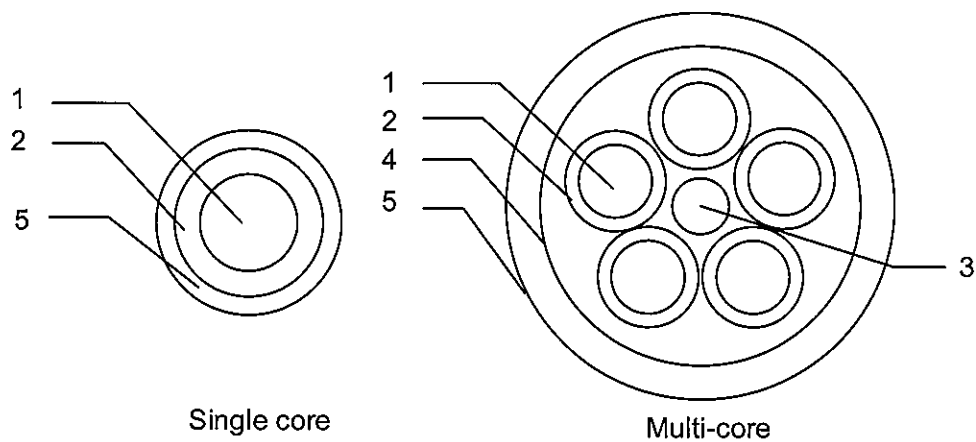
**Routine tests:** Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

**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 Non-compacted concentric stranded annealed copper
2	Insulation	Polyvinyl chloride (PVC/A)
3	Filler	PVC rod
4	Inner sheath	Polyvinyl chloride (PVC)
5	Outer sheath	Polyvinyl chloride (PVC/ST1)

**Application:** For installation exposed, or in raceway, wet or dry location, or direct burial in ground, Maximum conductor temperature of 70°C for normal operation and 160°C for short circuit condition.

**Table 1**

No. of core	Size (mm <sup>2</sup> )	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	10	7/Non-compacted	3.98	1.0	1.4	9.4	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	12.0	0.727	330	500
1	35	19/Non-compacted	7.65	1.2	1.4	13.5	0.524	440	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	1.5	17.0	0.268	800	500
1	95	19/Non-compacted	12.60	1.6	1.6	20	0.193	1100	500
1	120	37/Non-compacted	14.21	1.6	1.6	22	0.153	1400	500
1	150	37/Non-compacted	15.75	1.8	1.7	24	0.124	1700	500
1	185	37/Non-compacted	17.64	2.0	1.8	26	0.0991	2100	500
1	240	61/Non-compacted	20.25	2.2	1.9	29	0.0754	2700	500
1	300	61/Non-compacted	22.68	2.4	2.0	32	0.0601	3300	500
1	400	61/Non-compacted	25.65	2.6	2.1	36	0.0470	4200	500
1	500	61/Non-compacted	28.80	2.8	2.2	40	0.0366	5500	500
1	630	127/Non-compacted	32.76	2.8	2.4	44	0.0283	6500	500
1	800	127/Non-compacted	37.05	2.8	2.5	49	0.0221	8500	500
1	1000	127/Non-compacted	41.60	3.0	2.7	54	0.0176	10500	300

**Table 1 (continued)**

No. of cores	Size (mm <sup>2</sup> )	Conductor (wires/type)	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Dia. of inner sheath approx. (mm)	Outer 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	1.2	9.4	1.8	13.5	12.1	200	500
2	2.5	Solid	1.78	0.8	1.2	10.0	1.8	14.0	7.41	240	500
2	4	Solid	2.25	1.0	1.2	12.0	1.8	16.0	4.61	310	500
2	6	7/Non-compacted	3.12	1.0	1.2	13.5	1.8	18.0	3.08	410	500
2	10	7/Non-compacted	3.98	1.0	1.2	15.5	1.8	19.5	1.83	550	500
2	16	7/Non-compacted	5.10	1.0	1.2	17.5	1.8	21	1.15	700	500
2	25	7/Non-compacted	6.26	1.2	1.2	21	1.8	25	0.727	1000	500
2	35	19/Non-compacted	7.65	1.2	1.2	24	1.8	27	0.524	1300	500
2	50	19/Non-compacted	8.73	1.4	1.2	27	1.9	31	0.387	1700	500
2	70	19/Non-compacted	10.70	1.4	1.2	31	2.1	35	0.268	2300	500
2	95	19/Non-compacted	12.60	1.6	1.2	35	2.2	40	0.193	3100	500
2	120	37/Non-compacted	14.21	1.6	1.3	39	2.3	44	0.153	3800	500
2	150	37/Non-compacted	15.75	1.8	1.4	43	2.5	48	0.124	4700	500
2	185	37/Non-compacted	17.64	2.0	1.5	48	2.7	54	0.0991	6000	500
2	240	61/Non-compacted	20.25	2.2	1.6	54	2.9	61	0.0754	7500	500
2	300	61/Non-compacted	22.68	2.4	1.7	60	3.1	67	0.0601	9500	300
2	400	61/Non-compacted	25.65	2.6	1.9	68	3.3	75	0.0470	11500	300

**Table 1 (continued)**

No. of cores	Size (mm <sup>2</sup> )	Conductor (wires/type)	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Dia. of inner sheath approx. (mm)	Outer 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	1.2	9.9	1.8	14.0	12.1	220	500
3	2.5	Solid	1.78	0.8	1.2	10.5	1.8	14.5	7.41	270	500
3	4	Solid	2.25	1.0	1.2	12.5	1.8	16.5	4.61	360	500
3	6	7/Non-compacted	3.12	1.0	1.2	14.5	1.8	18.5	3.08	480	500
3	10	7/Non-compacted	3.98	1.0	1.2	16.0	1.8	20	1.83	650	500
3	16	7/Non-compacted	5.10	1.0	1.2	18.5	1.8	22	1.15	900	500
3	25	7/Non-compacted	6.26	1.2	1.2	22	1.8	26	0.727	1200	500
3	35	19/Non-compacted	7.65	1.2	1.2	25	1.9	29	0.524	1700	500
3	50	19/Non-compacted	8.73	1.4	1.2	28	2.0	33	0.387	2100	500
3	70	19/Non-compacted	10.70	1.4	1.2	32	2.1	37	0.268	2900	500
3	95	19/Non-compacted	12.60	1.6	1.3	38	2.3	43	0.193	4000	500
3	120	37/Non-compacted	14.21	1.6	1.4	42	2.4	47	0.153	5000	500
3	150	37/Non-compacted	15.75	1.8	1.4	46	2.6	51	0.124	6000	500
3	185	37/Non-compacted	17.64	2.0	1.5	51	2.8	57	0.0991	7500	500
3	240	61/Non-compacted	20.25	2.2	1.7	58	3.0	65	0.0754	10000	300
3	300	61/Non-compacted	22.68	2.4	1.8	64	3.2	71	0.0601	12000	300
3	400	61/Non-compacted	25.65	2.6	1.9	72	3.5	80	0.0470	15500	200



**Table 1 (continued)**

No. of cores	Size (mm <sup>2</sup> )	Conductor (wires/type)	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Dia. of inner sheath approx. (mm)	Outer 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	1.2	10.5	1.8	14.5	12.1	250	500
4	2.5	Solid	1.78	0.8	1.2	11.5	1.8	15.5	7.41	310	500
4	4	Solid	2.25	1.0	1.2	14.0	1.8	18.0	4.61	440	500
4	6	7/Non-compacted	3.12	1.0	1.2	16.0	1.8	20	3.08	600	500
4	10	7/Non-compacted	3.98	1.0	1.2	17.5	1.8	22	1.83	800	500
4	16	7/Non-compacted	5.10	1.0	1.2	20	1.8	24	1.15	1100	500
4	25	7/Non-compacted	6.26	1.2	1.2	24	1.8	28	0.727	1600	500
4	35	19/Non-compacted	7.65	1.2	1.2	28	2.0	32	0.524	2100	500
4	50	19/Non-compacted	8.73	1.4	1.2	31	2.1	36	0.387	2700	500
4	70	19/Non-compacted	10.70	1.4	1.3	36	2.2	41	0.268	3800	500
4	95	19/Non-compacted	12.60	1.6	1.4	42	2.5	48	0.193	5000	500
4	120	37/Non-compacted	14.21	1.6	1.5	47	2.6	52	0.153	6500	500
4	150	37/Non-compacted	15.75	1.8	1.5	51	2.8	57	0.124	8000	500
4	185	37/Non-compacted	17.64	2.0	1.7	57	3.0	64	0.0991	10000	300
4	240	61/Non-compacted	20.25	2.2	1.8	65	3.2	72	0.0754	12500	300
4	300	61/Non-compacted	22.68	2.4	1.9	72	3.5	80	0.0601	15500	200
4	400	61/Non-compacted	25.65	2.6	2.1	80	3.8	89	0.0470	20000	200

**Table 1 (continued)**

No. of cores	Size (mm <sup>2</sup> )	Conductor (wires/type)	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Inner sheath thickness approx. (mm)	Dia. of inner sheath approx. (mm)	Outer 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	1.2	11.5	1.8	15.5	12.1	290	500
5	2.5	Solid	1.78	0.8	1.2	12.5	1.8	16.5	7.41	370	500
5	4	Solid	2.25	1.0	1.2	15.0	1.8	19.0	4.61	500	500
5	6	7/Non-compacted	3.12	1.0	1.2	17.5	1.8	21	3.08	700	500
5	10	7/Non-compacted	3.98	1.0	1.2	19.5	1.8	24	1.83	950	500
5	16	7/Non-compacted	5.10	1.0	1.2	23	1.8	27	1.15	1300	500
5	25	7/Non-compacted	6.26	1.2	1.2	28	1.9	32	0.727	1900	500
5	35	19/Non-compacted	7.65	1.2	1.2	31	2.1	35	0.524	2600	500
5	50	19/Non-compacted	8.73	1.4	1.2	35	2.2	40	0.387	3300	500
5	70	19/Non-compacted	10.70	1.4	1.3	40	2.4	46	0.268	4700	500
5	95	19/Non-compacted	12.60	1.6	1.5	48	2.6	53	0.193	6500	500
5	120	37/Non-compacted	14.21	1.6	1.6	52	2.8	59	0.153	8000	500
5	150	37/Non-compacted	15.75	1.8	1.7	58	3.0	65	0.124	9500	300
5	185	37/Non-compacted	17.64	2.0	1.8	65	3.2	72	0.0991	12000	300
5	240	61/Non-compacted	20.25	2.2	2.0	73	3.5	81	0.0754	15500	200
5	300	61/Non-compacted	22.68	2.4	2.1	81	3.8	90	0.0601	19000	200
5	400	61/Non-compacted	25.65	2.6	2.3	91	4.1	100	0.0470	24500	100