

**SPECIFICATION****For****YK 60227 IEC 01 THW**

450/750V 70 °C Copper Conductor PVC Insulated Super Soft Single Core

(450/750V, Cu/PVC)

BY



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CUSTOMER

Rev.	Date	Description
0	19/09/2019	Issued specification
1	09/06/2020	Add size 1x6 mm <sup>2</sup> and 1x10 mm <sup>2</sup>
2	29/1/2024	Update Table 1
3	1/3/2024	Add color light-blue
4	8/3/2024	Update Table 1
5	28/11/2024	Update conductor diameter

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 450/750V copper conductor polyvinyl chloride (PVC) insulated super soft single core.

Maximum conductor temperature shall be 70°C.

The wire shall be in accordance with TIS 11 Part 3-2553, Table 1.

(Comply with IEC 60227-3 : 1997, Table 1.)

Flame retardant test TIS 11 Part 2-2553 (Comply with IEC 60332-1 : 2015).

## 2. Conductor

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

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  $\geq 16\text{mm}^2$  :

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 polyvinyl chloride (PVC/C) compound meet the requirements of TIS 11 Part 3-2553 (Comply with IEC 60227-3 : 1997).


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.

The color of the insulation shall be black or white or blue or light-blue or brown or grey or red or yellow or green or green/yellow.

#### 4. Marking on Cable

The marking items shall be marked by printed at intervals not exceeding 1 meter with suitable means throughout the length of cable.

1. Manufacturer's name and/or trade mark "  YAZAKI..... : TYE"
2. Designation "YK 60227 IEC 01 THW "
3. Rated voltage "450/750V "
4. Insulation material "PVC"
5. Max. operating rated temperature at conductor "70°C"
6. Number of core and size of conductor
7. TIS logo and standard number
8. The continuous reel length marking (in figure) shall be made on the insulation at every 1 meter (For size  $\geq 25 \text{ mm}^2$ )

Remark: The white insulation color, the length marking is not application.

#### 5. Test and Properties

The test and properties of wire shall be carried out in accordance with TIS 11 Part 3-2553 (Same IEC 60227-3 : 1997), TIS 2427-2552 (Comply with IEC 60228 : 2004) and TIS 11 Part 2-2553 (Comply with IEC 60332-1 : 2015).


Remark: Except black color insulation; For longer life of cable should be avoid exposure to direct solar radiation it necessary, cover is required.

#### 6. Packing

The finished wire shall be placed on the 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. Rated voltage "450/750V "
2. Max. operating rated temperature at conductor "70°C"
3. Designation "YK 60227 IEC 01 THW"
4. Number of core and size of conductor
5. Cable length
6. Net and gross weight
7. Month and year of manufacture
8. Rolling direction of reel
9. Manufacturer's name and/or trade mark "  YAZAKI "
10. TIS logo and standard number

## Test and Inspection

### Sample Tests

- Maximum conductor resistance, Ohm/km ..... specified in Table 1
- AC test voltage for 5 minutes, kV .....2.5
- Construction.....specified in Table 1

### Type Tests

This cable shall be tested as followed :

- Insulation Resistance at 70 °C ..... specified in Table 1
- Flame retardant tested according to TIS 11 Part 2-2553 (Comply with IEC 60332-1)

### Definition concerning the tests

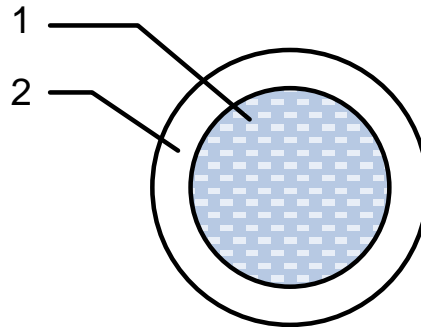
**Routine tests:** Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

**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	Stranded annealed copper
2	Insulation	Polyvinyl chloride (PVC/C) compound

**Application :** Building wiring for installation on insulator or in raceway dry location, Maximum conductor temperature of 70 °C for normal operation and 160 °C for short circuit conditions.

**Table 1**

Size (mm <sup>2</sup> )	Conductor			Insulation thickness nominal (mm)	Overall diameter average (mm)		Conductor resistance at 20 °C maximum (Ohm/km)	Insulation resistance at 70 °C minimum (MOhm-km)	Weight approx. (kg/km)	Standard length		
	No. of wires	Type	Diameter approx. (mm)									
	(wires)				Minimum	Maximum				m/coil	m/drum	
6	7	Non-compacted	3.05	0.8	4.3	5.2	3.08	0.0065	70	100	1000	2000
10	7	Non-compacted	3.95	1.0	5.6	6.7	1.83	0.0065	120	100	1000	2000
16	7	Compacted	4.70	1.0	6.4	7.8	1.15	0.0050	170	100	1000	2000
25	7	Compacted	5.90	1.2	8.1	9.7	0.727	0.0050	270	100	1000	2000
35	7	Compacted	6.90	1.2	9.0	10.9	0.524	0.0043	360	100	1000	2000
50	7	Compacted	8.15	1.4	10.6	12.8	0.387	0.0043	490	100	1000	2000
70	19	Compacted	9.75	1.4	12.1	14.6	0.268	0.0035	670	-	1000	2000
95	19	Compacted	11.50	1.6	14.1	17.1	0.193	0.0035	930	-	1000	2000
120	19	Compacted	12.95	1.6	15.6	18.8	0.153	0.0032	1150	-	1000	2000
150	37	Compacted	14.20	1.8	17.3	20.9	0.124	0.0032	1420	-	1000	2000
185	37	Compacted	15.90	2.0	19.3	23.3	0.0991	0.0032	1780	-	1000	2000
240	37	Compacted	18.20	2.2	22.0	26.6	0.0754	0.0032	2300	-	1000	1500