

SPECIFICATION**For****60227 IEC 02 THW (f)**

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

(450/750V, Cu/PVC)

BY

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CUSTOMER

Rev.	Date	Description
0	16/10/2019	Issued specification

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 flexible copper conductor polyvinyl chloride (PVC) insulated single core.

Maximum conductor temperature shall be 70°C.

The wire shall be in accordance with TIS 11 Part 3-2553, Table 3 (Same IEC 60227-3 : 1997, Table 3).

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

2. Conductor

The conductor shall be flexible stranded uncoated annealed copper conductor in accordance with TIS 2427-2552, Class 5 (Same IEC 60228 : 2004, Class 5).

For size 1.5 to 4 mm² : The direction of lay shall be left-hand (S) lay.

For size 6 to 240 mm² : The direction of lay shall be right-hand (Z) lay.

3. Insulation

The insulation shall be polyvinyl chloride (PVC/C) compound meet the requirements of TIS 11 Part 3-2553 (Same 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 brown or grey or red or yellow or green or green/yellow.

4. 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. Designation "60227 IEC 02 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 shall be made on the insulation at every 1 meter (For size ≥ 35 mm²)

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 (Same IEC 60228 : 2004) and TIS 11 Part 2-2553 (Same 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 non-returnable wooden reels or shall be coiled and wrapped with plastic which shall be overlapped and secured.

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 package shall be clearly marked as follows.

1. Rated voltage "450/750V "
2. Max. operating rated temperature at conductor "70°C"
3. Designation "60227 IEC 02 THW (f)"
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 (only for reel package)
9. Manufacturer's name and/or trade mark "  **YAZAKI** "

Test and Inspection

Sample Tests

- Maximum conductor resistance, Ohm/km specified in Table 1
- AC test voltage for 5 minutes, kV2.5
- 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 (Same IEC 60332-1)

Definition concerning the tests

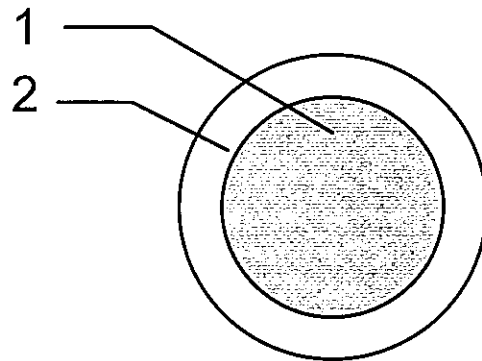
Routine tests: Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

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 annealed copper
2	Insulation	Polyvinyl chloride (PVC/C)

Application: For installation in raceway dry location, Maximum conductor temperature of 70 °C for normal operation and 160 °C for short circuit conditions.

Table 1

Size (mm ²)	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 (m)
	Type	Diameter approx. (mm)		Minimum	Maximum				
1.5	Flexible	1.60	0.7	2.8	3.4	13.3	0.010	21	100/Coil
2.5	Flexible	2.10	0.8	3.4	4.1	7.98	0.009	33	100/Coil
4	Flexible	2.60	0.8	3.9	4.8	4.95	0.007	50	100/Coil
6	Flexible	3.40	0.8	4.4	5.3	3.30	0.006	75	100/Coil
10	Flexible	4.60	1.0	5.7	6.8	1.91	0.0056	130	100/Coil
16	Flexible	5.60	1.0	6.7	8.1	1.21	0.0046	180	100/Coil
25	Flexible	6.90	1.2	8.4	10.2	0.780	0.0044	280	100/Coil
35	Flexible	8.30	1.2	9.7	11.7	0.554	0.0038	390	100/Coil
50	Flexible	9.90	1.4	11.5	13.9	0.386	0.0037	550	300
70	Flexible	11.80	1.4	13.2	16.0	0.272	0.0032	750	300
95	Flexible	13.60	1.6	15.1	18.2	0.206	0.0032	1000	300
120	Flexible	15.60	1.6	16.7	20.2	0.161	0.0029	1300	300
150	Flexible	17.40	1.8	18.6	22.5	0.129	0.0029	1600	300
185	Flexible	18.80	2.0	20.6	24.9	0.106	0.0029	1900	200
240	Flexible	21.70	2.2	23.5	28.4	0.0801	0.0028	2500	200