

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

450/750V 70 °C Copper Conductor PVC Insulated Twisted Wire

(450/750V, Cu/PVC)

BY 

(Wachara Sangsomritphon)

MANAGER, Cable Design Section

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CUSTOMER

Rev.	Date	Description
0	08/10/2019	Issued specification
1	28/09/2020	Add size 1x4 mm ² (4 cores)
2	11/01/2021	Add size 1x6 mm ² (2 cores)
3	9/01/2025	Update Table 1

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 twisted wire

Maximum conductor temperature shall be 70°C.

The wire shall be based on IEC 60227-3: 1997, Table 3. (Comply with TIS 11 Part 3-2553, Table 3)

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

2. Conductor

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

The direction of lay shall be left-hand (S) lay.

3. Insulation

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

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. Core Identification

The cores shall be identified by colors, as follow :


2-cores : grey, grey/black

3-cores : grey, grey/black, grey/red

4-cores : grey, grey/black, grey/red, grey/blue

5. 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 "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 "1 x (Size) "

7. TIS logo and standard number

6. Cabling

The individual insulated cores shall be cabled together with suitable length of lay.

The direction of lay shall be left-hand (S) lay.

7. Test and Properties


The cable shall be meet the requirement in Test and Inspection and Table 1, when tested in accordance with TIS 11 Part 3-2553 (Comply with IEC 60227-3 : 1997), TIS 2427-2552

(Comply with IEC 60228 : 2004) and TIS 11 Part 2-2553 (Comply with IEC 60332-1 : 2015).

8. Packing

The finished wire shall be coiled and wrapped with plastic which shall be overlapped and secured 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. Rated voltage "450/750V "
2. Max. operating rated temperature at conductor "70°C"
3. Designation "60227 IEC 02 THW (f)"
(TWIST)
4. Number of cores and size of conductor
5. Cable length
6. Net and gross weight
7. Month and year of manufacture
8. 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 (Comply with IEC 60332-1)

Definition concerning the tests

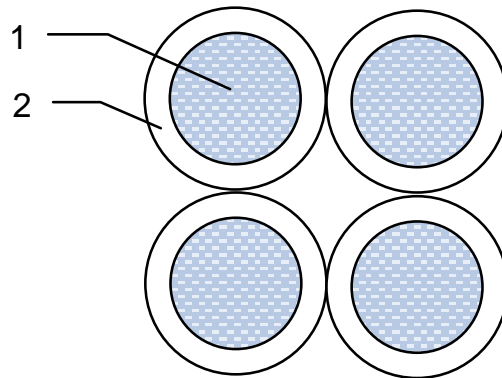
Routine tests: Tests made by the manufacturer on each manufactured length of cable to check that each length meets the specified requirements.

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	Flexible stranded uncoated annealed copper
2	Insulation	Polyvinyl chloride (PVC/C) compound

Application: For indoor fixed installation in dry locations, for electrical panel connection or for electrical apparatus,
Maximum conductor temperature of 70°C for normal operation and 160°C for short circuit conditions.

Table 1

No. of cores	Nominal size (mm ²)	Conductor type	Conductor diameter approx. (mm)	Insulation thickness nominal (mm)	Insulation diameter approx. (mm)	Overall diameter approx. (mm)	Conductor resistance at 20°C maximum (Ohm/km)	Insulation resistance at 70°C minimum (MOhm-km)	Weight approx. (kg/km)	Standard length (m)
1 (2C)	1.5	Flexible	1.55	0.7	3.5	6.5	13.3	0.010	41	100/Coil
1 (2C)	2.5	Flexible	2.00	0.8	4.0	8.0	7.98	0.009	65	100/Coil
1 (2C)	4	Flexible	2.60	0.8	4.5	9.5	4.95	0.007	100	100/Coil
1 (2C)	6	Flexible	3.40	0.8	5.5	11.0	3.30	0.006	149	100/Coil
1 (3C)	1.5	Flexible	1.55	0.7	3.5	7.0	13.3	0.010	62	100/Coil
1 (3C)	2.5	Flexible	2.00	0.8	4.0	8.5	7.98	0.009	98	100/Coil
1 (3C)	4	Flexible	2.60	0.8	4.5	10.0	4.95	0.007	149	100/Coil
1 (4C)	1.5	Flexible	1.55	0.7	3.5	8.0	13.3	0.010	82	100/Coil
1 (4C)	2.5	Flexible	2.00	0.8	4.0	9.5	7.98	0.009	131	100/Coil
1 (4C)	4	Flexible	2.60	0.8	4.5	11.0	4.95	0.007	199	100/Coil