



American Wire Gauge AWG

American wire gauge

THWN or THHN

PVC Insulation, Nylon Jacket, 600 Volts

APPLICATION

General purpose wiring in accordance with the National Electrical Code, maximum conductor temperature of 105°C in dry locations and 75°C in wet locations, 600 volts, for installation in conduit or other recognized raceway. Also used for wiring of machine tools (stranded), appliances, and control circuits not exceeding 600 volts.

STANDARDS

- Listed by UL as Type THHN or THWN per Standard 83, and as Type MTW per Standard 1063 (stranded items).
- Listed by UL as Gasoline and Oil Resistant 11.
- Listed by UL as Sunlight Resistant (10 AWG and larger, all colours).
- 6 AWG and larger pass UL and IEEE-383 ribbon burner flame test and are listed For CT Use.
- Listed by UL as 105°C Appliance Wiring Material, 60°C where exposed to oil (stranded items only).
- C(UL) listed as Type T90 Nylon or TWN75, FT1.
- Conforms to Federal Specification J-C-30B.

CONSTRUCTION

Annealed uncoated copper conductor, PVC insulation, nylon jacket, surface printed.



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SCOPE

This specification describes single conductor THWN or THHN, a general purpose building wire insulated with polyvinyl chloride (PVC) and covered with a tough protective sheath of nylon intended for lighting and power circuits at 600 Volts or less, in residential, commercial and industrial buildings. The wire may be operated at 105°C maximum continuous temperature in dry locations and 75°C in wet locations and is listed by Underwriters Laboratories for use in accordance with Article 310 of the National Electrical Code. The wire shall also be C(UL) listed as Types T90 Nylon or TWN75, FT1 indicating suitability for use in accordance with the Canadian Code.

APPLICABLE STANDARDS

The following standards form a part of this specification to the extent specified herein :

- Underwriters Laboratories Standard 83 for Thermoplastic Insulated Wires.
- Underwriters Laboratories Standard 1063 for Machine-Tool Wires and Cables (Stranded items only).
- Underwriters Laboratories Standard 758 for 105°C Appliance Wiring Materials (Stranded items only).
- CSA Standard C22.2 No. 75 and Electrical Bulletin No. 1451 for Type T90 Nylon or TWN75.
- Federal Specification J-C-30B.

CONDUCTORS

Conductors shall be solid, Class B or Class C stranded, annealed uncoated copper per UL Standards 83 or 1063.

INSULATION

- Each conductor shall be insulated with PVC and sheathed with nylon complying with requirements of UL Standard 83 for Types THHN or THWN, UL Standard 1063 for Type MTW and CSA C22.2 No. 75 for T90 Nylon. In addition, Types THWN or THHN shall comply with the optional Gasoline and Oil Resistant II rating of UL Standard 83. The insulation on stranded sizes shall also comply with UL requirements for 105°C Appliance Wiring Material.
- The average thickness of PVC insulation, for a given conductor size, shall be as specified in UL Standard 83 for Types THWN or THHN. The minimum thickness at any point, of the PVC insulation, shall be not less than 90% of the specified average thickness. The minimum thickness at any point of the nylon sheath, shall be as specified in UL Standard 83 for Types THWN or THHN. The PVC insulation shall be applied tightly to the conductor

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IDENTIFICATION

The wire shall be identified by surface marking indicating manufacturer's identification, conductor size and metal, voltage rating, UL Symbol, type designations and optional ratings. The wire shall also be identified as C(UL) Type T90 Nylon or TWN75, FT1 .

TESTS

Wire shall be tested in accordance with the requirements of UL Standard 83 for Types THWN or THHN wire and for the optional Gasoline and Oil Resistant II listings; as Type MTW to UL Standard 1063 (stranded items); as AWM to UL Standard 758 (stranded items); and as C(UL) Type T90 Nylon or TWN75.

TECHNICAL DATA

Conductor			Maximum DC Conductor Resistance at 20 °C	Nominal Insulation Thickness	Normal Jacket Thick- ness	Approx. Overall Diameter	Approx. Net Weight
Nominal Cross Section	No. x Dia						
AWG mm ²	No. x Dia		Ohms/km	mm	mm	mm	Kg/km
18*	0.82	19 x 0.235	21.9	0.38	0.10	2.2	12
16*	1.31	19 x 0.296	13.7	0.38	0.10	2.5	17
14	2.08	19 x 0.37	8.62	0.38	0.10	2.9	24
12	3.31	19 x 0.47	5.43	0.38	0.10	3.4	37
10	5.26	19 x 0.59	3.409	0.51	0.10	4.2	59

- Listed as TFFN
- Other sizes can be provided on specific request.
- The above data is approximate and subjected to manufacturing tolerance. We reserve the right to change as a result of product development and/or changes in standard.