



General Description

XHHW is an alphabetism or initialism which stands for “XLPE (cross-linked polyethylene) High Heat-resistant Water-resistant.” XHHW is a designation for a specific insulation material, temperature rating, and condition of use (suitable for wet locations) for electrical wire and cable. Wires with XHHW insulation are commonly used in the alternating current (AC) electrical distribution systems of commercial, institutional, and industrial buildings and installations, usually at voltage levels (potential difference or electromotive force) ranging from 110-600 Volts. This type of insulation is used for both copper and aluminum conductors which are either solid or stranded, depending on size. According to Underwriters Laboratories (UL) Standard 44, XHHW insulation is suitable for use in dry locations up to 90° C (194° F), or wet locations up to 75° C (167° F).

XHHW-2 insulation, which is similar to XHHW, is suitable for use in dry or wet locations up to 90° C (194° F).

XHHW / XHHW-2 electrical conductor insulation is governed by the following Industry Standards:

- UL 44 - File No. E63539
- CSA LL 82214
- ASTM-B3
- ASTM-B8
- ASTM-B787
- U.S. Federal Specification A-A-59544
- NEMA WC70/ICEA S-95-658

XHH Indicates a single conductor having a cross-linked synthetic polymer insulation with no overall covering provided, rated 90°C dry.

RHW Indicates a single conductor having a thermoset insulation, with or without a nonmetallic covering, rated 75°C dry, 75°C wet.

RHW-2 Indicates a single conductor with the same description as Type RHW, except that it is rated 90°C dry, 90°C wet.

RHH Indicates a single conductor with the same description as Type RHW, except that it is rated 90°C dry only.

SA Indicates a single conductor having thermosetting silicone rubber insulation and a nonmetallic covering rated 90°C dry, general use, 200°C dry, special applications.

SIS Indicates a single conductor having thermosetting insulation with no overall covering provided rated 90°C dry, for switchboard wiring only.



American Standard UL

THHN is an acronym which stands for “Thermoplastic High Heat-resistant Nylon-coated” THHN is a designation for a specific insulation material, temperature rating, and condition of use (suitable for dry and damp locations) for electrical wire and cable. Wire with THHN insulation is commonly used in the power-voltage (up to 600 Volts) electrical distribution systems of buildings of all types and sizes throughout North America. This type of insulation is used for both copper and aluminum conductors which are either solid or stranded, depending on size.

THHN electrical conductor insulation is governed by the following Industry Standards:

- UL 83
- UL 1063 (MTW)
- AWM
- Canadian Standard C22.2 No. 75 and CSA Bulletin No. 1451
- ASTM: B3, B8, B787
- WC70/ICEA S-95-658
- U.S. Federal Specification A-A-59544

THWN stands for “Thermoplastic High Water-resistant Nylon-coated.” THWN is a designation for a specific insulation material, temperature rating, and condition of use (wet locations) for electrical wire and cable. Wires with THWN insulation are commonly used in the alternating current (AC) electrical distribution systems of buildings of all types and sizes throughout North America, usually at voltage levels (potential difference or electromotive force) ranging from 110-600 Volts. This type of insulation is used for both copper and aluminum conductors which are either solid or stranded, depending on size.

THWN electrical conductor insulation is governed by the following Industry Standards:

- UL 83
- UL 1063 (MTW)
- AWM
- Canadian Standard C22.2 No. 75 and CSA Bulletin No. 1451
- ASTM: B3, B8, B787
- WC70/ICEA S-95-658
- U.S. Federal Specification A-A-59544