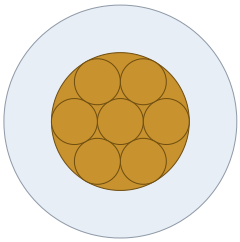
XHHW-2 XLPE-Insulated Building Wire 600 V and 1000 V

SORIVO Product Series: **Thermoset single-conductor building wire** | Rated Voltage 600 V · 1000 V from 8 AWG | Standard UL 44 · NEC 310.16 | Sizes 14 AWG–4/0



- XLPE insulation — 1.14 mm (0.045 in), 90 °C wet or dry
- 7-strand Class B copper, ASTM B3 — 8 AWG shown

APPLICATION

Single-conductor 600 V and 1000 V building wire for branch circuits, feeders and service entrance conductors pulled through conduit, raceway and cable tray. The thermoset XLPE wall carries a **90 °C wet** rating, so the same wire serves dry, damp and wet locations, and it is the one common building wire that NEC 310.15(B)(2) exempts from the rooftop temperature adder.

CONSTRUCTION

Conductor
Bare annealed copper, Class B stranding — 7 strands to 2 AWG, 19 strands from 1 AWG, ASTM B3

Insulation
XLPE (cross-linked polyethylene), thermoset, 1.14 mm on 8–2 AWG and 1.40 mm on 1–4/0

MODEL DESIGNATION

XHHW Cross-linked polyethylene, High Heat- and Water-resistant · **-2** the wet rating raised to 90 °C (without the suffix the wet rating is 75 °C)

KEY FEATURES

- 90 °C in wet locations — the rating THHN does not have (75 °C wet)
- Exempt from the 33 °C rooftop adder of NEC 310.15(B)(2), by the exception written for XHHW-2 alone
- Thermoset insulation: no nylon jacket to scuff, and better resistance to heat ageing and to oil than thermoplastic
- Class B compact stranding — terminates and bends like standard building wire

STANDARDS

- UL 44 — Thermoset-Insulated Wires and Cables
- NEC Table 310.4(A) — insulation thickness for RHH / RHW / XHHW
- NEC Table 310.16 — ampacity, 75 °C and 90 °C columns
- NEC 310.15(B)(2) — rooftop temperature adder, and its XHHW-2 exception

TECHNICAL PARAMETERS

Rated Voltage
600 V — all sizes
1000 V — 8 AWG and larger, subject to the listing of the size ordered

Temperature Rating
Conductor +90 °C dry and +90 °C wet
Emergency overload +130 °C · short circuit +250 °C (thermoset typicals)

Insulation Thickness
1.14 mm on 14–2 AWG · 1.40 mm on 1–4/0 · per NEC Table 310.4(A)

Sizes
14 AWG to 4/0 tabulated here; 250–1000 kcmil to the same construction

Sunlight Resistance
720 h UL 44 weathering test; sunlight-resistant legend available, confirm per size

Direct Burial
Not listed — direct burial calls for UF, USE or USE-2

COLOUR IDENTIFICATION

Black, white, red, blue, green, yellow, gray, brown, orange, violet and pink. Green is the equipment grounding conductor; other colours available.

600 / 1000 V	+90 °C	ROOFTOP
UL 44	wet and dry	no 33 °C adder

DIMENSIONS AND ELECTRICAL DATA

Table 1 — 600 / 1000 V single conductor, XLPE insulation, bare copper

SIZE AWG	STRANDS count	CONDUCTOR dia. mm (in)	XLPE INSUL. mm (in)	OVERALL DIA. mm (in)	WEIGHT lb/1000 ft (kg/km)	R @20 °C Ω/km calc.	AMPACITY 75 °C	AMPACITY 90 °C
8	7	3.58 (0.141)	1.14 (0.045)	6.05 (0.238)	64 (95)	2.06	50	55
6	7	4.50 (0.177)	1.14 (0.045)	6.96 (0.274)	97 (144)	1.30	65	75
4	7	5.72 (0.225)	1.14 (0.045)	8.15 (0.321)	148 (220)	0.815	85	95
3	7	6.40 (0.252)	1.14 (0.045)	8.84 (0.348)	184 (274)	0.646	100	115
2	7	7.16 (0.282)	1.14 (0.045)	9.63 (0.379)	228 (339)	0.513	115	130
1	19	8.18 (0.322)	1.40 (0.055)	11.05 (0.435)	291 (433)	0.407	130	145
1/0	19	9.17 (0.361)	1.40 (0.055)	12.09 (0.476)	361 (537)	0.322	150	170
2/0	19	10.29 (0.405)	1.40 (0.055)	13.21 (0.520)	450 (670)	0.256	175	195
3/0	19	11.58 (0.456)	1.40 (0.055)	14.58 (0.574)	564 (839)	0.203	200	225
4/0	19	13.00 (0.512)	1.40 (0.055)	16.00 (0.630)	707 (1052)	0.161	230	260

Dimensions and masses are nominal and subject to manufacturing tolerance. Resistance at 20 °C is the calculated value from the nominal copper cross-section and is given for construction comparison only — it is not the NEC Chapter 9 Table 8 value at 75 °C. Ampacity is NEC Table 310.16 for not more than three current-carrying conductors in a raceway or cable at 30 °C ambient. 14–10 AWG are supplied to the same construction.

XHHW-2 OR THHN

Table 2 — the lines that decide the choice, stated without marketing

	XHHW-2	THHN / THWN-2
Insulation family	Thermoset — XLPE	Thermoplastic — PVC + nylon
Wet-location rating	+90 °C	+75 °C
Rooftop 33 °C adder	Exempt (310.15(B)(2) Exception)	Applies
Overall dia., 8 AWG	6.05 mm	5.6 mm
Relative cost	Higher	Lower

XHHW-2 is not a premium version of THHN and THHN is not an outdated XHHW-2: one is thermoset and the other thermoplastic, and the codes treat them differently.

The rooftop exception, verbatim. NEC 310.15(B)(2) requires an ampacity correction for conductors exposed to sunlight on or above a rooftop, adding 33 °C to the design ambient (60 °C on a metal roof). Its exception reads: *"Type XHHW-2 insulated conductors shall not be subject to this ampacity adjustment."* The exception is written for the -2 suffix, not for XHHW.

INSPECTION AND TEST PROGRAMME

Table 3 — what is checked on every length, and what is proved once

CHECK	REFERENCE
ROUTINE — EVERY DELIVERY LENGTH	
Conductor resistance at 20 °C	UL 44 / ASTM B193
Spark test on the finished insulation	UL 44
Insulation wall and overall diameter	UL 44 / NEC Table 310.4(A)
Printed legend	UL 44
TYPE TEST — PROVED ONCE ON THE DESIGN	
Dielectric withstand, dry and wet	UL 44
Cold bend	UL 44
Sunlight resistance (720 h), where marked	UL 44
Vertical flame	UL 1581

A sizing trap worth flagging. XHHW-2 is slightly *larger* in overall diameter than the THHN it replaces — 6.05 mm against 5.6 mm at 8 AWG. A conduit fill calculation carried over from a THHN schedule can come out over 40 % of the raceway area once the wire is changed. Re-run the fill, not just the ampacity.

Disclaimer. The information in this datasheet is for guidance only and is subject to change without notice. Dimensions and masses are nominal and subject to manufacturing tolerance; confirm against the certificate of the delivered product. This document is uncontrolled once printed or forwarded — the current revision, issued under document number SORIVO-TM-XHHW2-001, governs. © 2026 SORIVO. All rights reserved. Ampacity values assume 30 °C ambient and not more than three current-carrying conductors in a raceway or cable. Under NEC 110.14(C) the conductor ampacity may not exceed the lowest temperature rating of any connected termination, conductor or device; the 90 °C column is used for adjustment and correction, not as a free upgrade.