



**UNITED COPPER INDUSTRIES**  
COPPER BUILDING WIRE & CABLE PRODUCTS

# THHN/THWN-2

PVC Insulation with Nylon Jacket



Solid or Stranded Soft-annealed Uncoated Copper



**Type THHN/THWN-2**  
**Single Conductor 90°C**  
**600 volts**

## Applications

Type THHN/THWN conductors are primarily used in conduit for services, feeder, and branch circuits in commercial or industrial applications as specified in the National Electrical Code®.

When used as type THHN, conductor is suitable for use in dry locations at temperatures not to exceed 90°C.

When used as type THWN, conductor is suitable for use in wet or dry locations at temperatures not to exceed 90°C dry locations or 75°C wet locations or not to exceed 75°C when exposed to oil or coolant.

When used as type THWN-2, conductor is suitable for use in wet or dry locations at temperatures not to exceed 90°C both dry and wet locations or not to exceed 75°C when exposed to oil or coolant.

When used as type MTW, conductor is suitable for use in wet locations or when exposed to oil or coolant at temperatures not to exceed 60°C or dry locations at temperatures not to exceed 90°C (with ampacity limited to that for 75°C conductors per NFPA 79).

Conductor temperatures not to exceed 105°C in dry locations when rated AWM and used as appliance wiring material. Voltage rating for all applications is 600 volts.

## Specifications

Type THHN or THWN or MTW (also AWM) meets or exceeds all applicable ASTM Specifications, UL Standard 83/CSA C22.2 No. 75-03, UL Standard 1063 (MTW), UL Standard 758 (AWM), Federal Specification A-A-59544, NEMA WC 70/ICEA S-95-658 and the requirements of the National Electrical Code® (NFPA 70).

## Construction

Type THHN or THWN or MTW are copper conductors that are soft annealed copper, insulated with a tough, heat and moisture resistant, lead-free polyvinyl chloride (PVC) over which a nylon (polyamide) or UL listed equivalent jacket is applied. Available in black, white, red, blue, green, yellow, brown, orange, purple, pink, or gray. Some colors are standard, some subject to economic order quantity.

Conductor		Insulation Thickness (mils)	Jacket Thickness (mils)	Nominal O.D. (mils)		Approximate Net Weight per 1000' (lb.)		Allowable Ampacities +			Standard Package
SIZE (AWG or MCM)	No. Strands			Solid	Stranded	Solid	Stranded	60°C	75°C	90°C	
**14	19*	15	4	102	109	15	16	15	15	15	AD°
**12	19*	15	4	119	128	23	24	20	20	20	AD°
**10	19*	20	4	150	161	37	38	30	30	30	AD^
**8	19	30	5		212		63	40	50	55	BCDE
**6	19	30	5		250		95	55	65	75	BCDE
4	19	40	6		319		153	70	85	95	BCDE
3	19	40	6		346		189	85	100	110	BCDE
2	19	40	6		378		234	95	115	130	BCDE
1	19	50	7		435		300	110	130	150	BCDE
1/0	19	50	7		474		372	125	150	170	BCDE
2/0	19	50	7		518		463	145	175	195	BCDE
3/0	19	50	7		568		576	165	200	225	BCDE
4/0	19	50	7		624		719	195	230	260	BCDE
250	37	60	8		694		849	215	255	290	BCG
300	37	60	8		747		1010	240	285	320	BCD
350	37	60	8		797		1175	260	310	350	BCD
400	37	60	8		842		1332	280	335	380	BCD
500	37	60	8		925		1652	320	380	430	BCD
600	61	70	9		1024		1990	355	420	475	BCF
750	61	70	9		1126		2468	400	475	535	BC

\* Solid construction available in sizes 14, 12, & 10 as Types THHN or THWN or AWM only.  
 \*\* Also suitable for 105°C appliance wiring material (AWM).  
 ° Four 500' spools per carton.  
 ^ Two 500' spools per carton.  
 + Allowable ampacities (see below).

All AWG sizes 14 AWG through 1 AWG rated VW-1  
 All AWG sizes rated THWN-2  
 Sizes 6 AWG and above rated Sunlight Resistant (black color only)  
 Sizes 1/0 AWG and above rated for Cable Tray Use  
 Sizes 1/0 AWG and above rated FT4 / IEEE 1202  
 Sizes 14 AWG and above Listed T90 Nylon or THWN 75

**STANDARD PACKAGING CODE:**  
 A - 500' Spool E - 5000' Reel  
 B - 500' Reel F - 2000' Reel  
 C - 1000' Reel G - 4000' Reel  
 D - 2500' Reel

Allowable ampacities shown are for general use as specified by the National Electrical Code, section 310.15.  
 60°C - When terminated to equipment for circuits rated 100 amperes or less or marked for AWG 14 through 1 conductors.  
 MTW wet locations or when exposed to oil or coolant  
 75°C - When terminated to equipment for circuits rated 100 amperes or marked for conductors larger than 1 AWG. THWN when exposed to oil or coolant. MTW dry locations.  
 90°C - THHN dry locations.

## Recommended Sample Specifications

### (MTW or THHN or THWN or THWN-2)

Conductors shall be UL listed type MTW or THHN or THWN or THWN-2 gasoline and oil resistant II for CT use (1/0 and larger), suitable for operations at 600 volts in all installations as specified by the National Electrical Code®. Conductors shall be annealed copper, insulated with high-heat, moisture resistant, and lead-free PVC, jacketed with abrasion, moisture, gasoline, and oil resistant nylon or UL listed equivalent.

### (AWM)

Conductors shall be UL listed type THHN or THWN or THWN-2 or MTW or AWM suitable for operation at 600 volts at conductor temperatures not to exceed 105°C.



Authorized Styles: 1401, 1402, 1403, 1404, 1405, 1406, 1407, 1408, 1409, 1410, 1411, 1412, 1413, 1414, 1452, 1453



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