

# QI THHN/THWN-2<sup>®</sup> PVC Insulated

Nylon Jacket, 600 V



A Viakable Company

## Features

QI THHN/THWN-2<sup>®</sup> Marking apply only to sizes 8 AWG up to 1000 kcmil.

Use of lubrication is not mandatory to install QI THHN/THWN-2<sup>®</sup> conductors in the raceways or cable trays.

PVC insulation offers exceptional electrical, physical and flame-retardant properties.

All sizes are also UL Listed as MTW (Not Solid), AWM, GRIL, T90 Nylon, TWN75, and FT1.

All colors are rated For CT Use in sizes 1/0 AWG and larger.

Sizes 8 AWG and larger rated SR for Sunlight Exposure in all colors.

RoHS compliance in sizes 14 AWG to 10 AWG.

BIG Sequential Footage Marking for easy identification, in sizes 1/0 AWG and larger, every 1 ft.

All sizes meet VW-1 Vertical Flame Test.

Colored insulation and Nylon jacket is color coded (sizes 8 AWG and larger) for visual identification of conductors in electrical installations.

## Application

CME Wire and Cable QI THHN/THWN-2<sup>®</sup> conductors in all colors are suitable for use in general purpose wiring in accordance with the requirements of NFPA 70 (NEC<sup>®</sup>). Type THHN/THWN-2 conductors are approved for use at a maximum voltage of 600 volts and a maximum conductor temperature of 90 °C in wet or dry locations and 75 °C when exposed to gasoline and oil.

Also rated AWM, for 105 °C dry and 80 °C in oil.

## Specifications

UL Standard 83 (THHN/THWN-2)

UL Standard 758 (AWM)

UL Standard 1063 (MTW)

CSA Standard C22.2 No. 75 (T90 Nylon/TWN75).

ASTM B3, B8, and B787.

ICEA S-95-658/NEMA WC70.

Federal Specification A-A-59544.

ANSI/NFPA 70 National Electric Code (NEC<sup>®</sup>).

## Engineering Information

**1. Conductors:** Solid uncoated copper conductors per ASTM B3.

1  
2  
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**Stranded** uncoated copper conductors per ASTM B3, B8 and B787.

**2. Insulation:** Polyvinyl Chloride (PVC) per UL 83 and UL 1063.

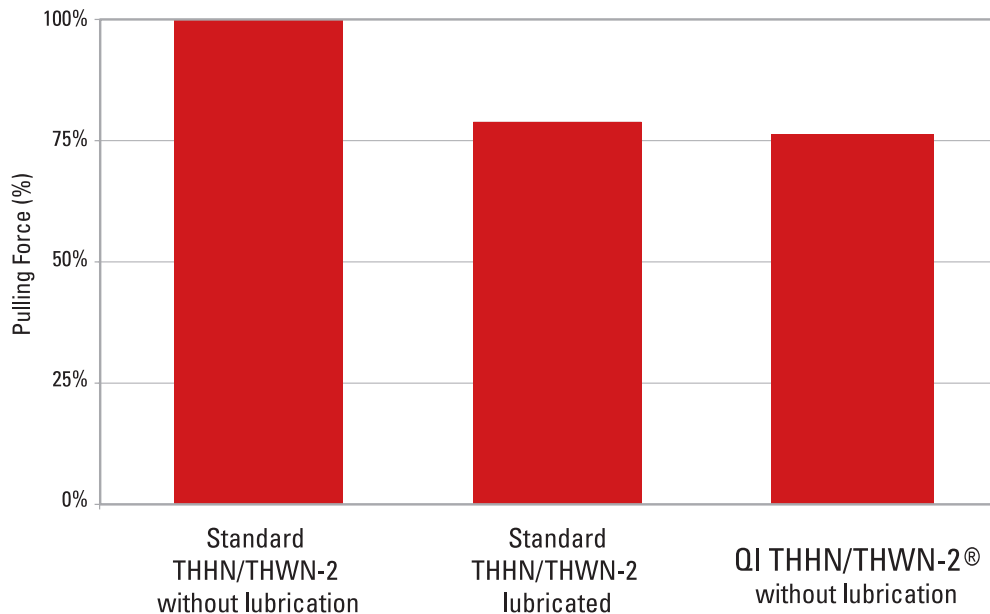
**3. Jacket (color coded):** Low friction tough polyamide, Nylon, per UL 83 and UL 1063.

## Installation Performance

A significant reduction (25% – 30%) in the pulling force is achieved for QI THHN/THWN-2<sup>®</sup> when compared to the pulling force required for Standard THHN/THWN-2 without any lubricant. Further, this reduction is comparable to the reduction achieved when the Standard THHN/THWN-2 conductors are pulled using a lubricant in identical installation. These results demonstrate that it is feasible to install the QI THHN/THWN-2<sup>®</sup> conductors without the use of a lubricant in an NFPA 70 (NEC<sup>®</sup>) compliant installation.

## Pulling Force for QI THHN/THWN-2<sup>®</sup>

500-500-500-1/0 THHN/THWN-2 Conductors in 3" EMT Conduits with four 90 °C Bends



Technical Data *continued*

QI THHN/THWN-2<sup>®</sup> 600 V, Copper Conductors

Size AWG or kcmil	Number of Wires	Nominal Thickness		Nominal Diameter in	Conductor Area in <sup>2</sup>	Ampacity*			Nominal Mass lb/kft	Standard Packaging	
		PVC (in)	Nylon (in)			60 °C	75 °C	90 °C			
14	2.08	1	0.015	0.004	0.102	0.0082	15	15	15	15	500' (only in 2000' cartons) and 2500' reel
12	3.31	1	0.015	0.004	0.119	0.0111	20	20	20	25	500' (only in 2000' cartons) and 2500' reel
10	5.26	1	0.020	0.004	0.150	0.0177	30	30	30	37	500' (only in 2000' cartons) and 2500' reel
14	2.08	19	0.015	0.004	0.112	0.0098	15	15	15	17	500' (only in 2000' cartons) and 2500' reel
12	3.31	19	0.015	0.004	0.131	0.0134	20	20	20	25	500' (only in 2000' cartons) and 2500' reel
10	5.26	19	0.020	0.004	0.164	0.0211	30	30	30	40	500' (only in 2000' cartons) and 2500' reel
8	8.37	19	0.030	0.005	0.213	0.0356	40	50	55	65	500', 1000', 2500', 5000', or cut reels
6	13.30	19	0.030	0.005	0.249	0.0487	55	65	75	99	500', 1000', 2500', 5000', or cut reels
4	21.20	19	0.040	0.006	0.318	0.0794	70	85	95	159	500', 1000', 2500', 5000', or cut reels
3	26.70	19	0.040	0.006	0.346	0.0940	85	100	110	203	500', 1000', 2500', 5000', or cut reels
2	33.60	19	0.040	0.006	0.378	0.1122	95	115	130	243	500', 1000', 2500', 5000', or cut reels
1	42.40	19	0.050	0.007	0.435	0.1486	110	130	150	301	500', 1000', 2500', 5000', or cut reels
1/0	53.50	19	0.050	0.007	0.474	0.1765	125	150	170	387	500', 1000', 2500', 5000', or cut reels
2/0	67.40	19	0.050	0.007	0.518	0.2107	145	175	195	482	500', 1000', 2500', 5000', or cut reels
3/0	85.00	19	0.050	0.007	0.568	0.2534	165	200	225	599	500', 1000', 2500', 5000', or cut reels
4/0	107.00	19	0.050	0.007	0.624	0.3058	195	230	260	747	500', 1000', 2500', 5000', or cut reels
250	127.00	37	0.060	0.008	0.678	0.3610	215	255	290	891	500', 1000', 2500', 5000', or cut reels
300	152.00	37	0.060	0.008	0.730	0.4185	240	285	320	1060	500', 1000', 2500', 5000', or cut reels
350	177.00	37	0.060	0.008	0.777	0.4742	260	310	350	1229	500', 1000', 2500', 5000', or cut reels
400	203.00	37	0.060	0.008	0.821	0.5294	280	335	380	1396	500', 1000', 2500', 5000', or cut reels
500	253.00	37	0.060	0.008	0.902	0.6390	320	380	430	1731	500' 1000', 2500' or cut reels
600	304.00	61	0.070	0.009	1.024	0.8235	355	420	475	2087	500' 1000', 2500' or cut reels
750	380.00	61	0.070	0.009	1.126	0.9958	400	475	535	2588	500' 1000', 2500' or cut reels
1000	507.00	61	0.070	0.009	1.275	1.2768	455	545	615	3732	Made-to-order item**

The above data are approximate and subject to normal manufacturing tolerances.  
 \* Ampacity values shown above are per the National Electrical Code Table 310.15(B)(16) (formerly Table 310.16).  
 \*\* For Made-to-order items: Minimum Runs, Pricing & Lead Times are subject to the plant's production schedule.

**PRINT LEGENDS QI Sizes:**

**STRANDED CONDUCTOR SIZES 8 – 1 AWG (IN ALL COLORS):**

CME WIRE & CABLE QI<sup>®</sup> E102470 S (UL) MTW OR THHN OR THWN-2 OR AWM OR GR II SIZE AWG (SIZE mm<sup>2</sup>) CU 600 V VW-1 SR OR C(UL) TYPE T90 NYLON OR TWN75 FT1.

**CONDUCTOR SIZES 1/0 AWG – 1000 kcmil (IN ALL COLORS):**

CME WIRE & CABLE QI<sup>®</sup> E102470 S (UL) MTW OR THHN OR THWN-2 OR AWM OR GR II SIZE AWG (SIZE mm<sup>2</sup>) CU 600 V VW-1 SR FOR CT USE OR C(UL) TYPE T90 NYLON OR TWN75 FT1.

**PRINT LEGENDS: 14 – 10 AWG:**

**SOLID:**

CME WIRE & CABLE E95989 S (UL) THHN OR THWN-2 OR AWM OR GR II (SIZE) AWG (SIZE mm<sup>2</sup>) CU 600 V VW-1 OR C(UL) TYPE T90 NYLON OR TWN75 FT1.

**STRANDED:**

CME WIRE & CABLE E102470 S (UL) MTW OR THHN OR THWN-2 OR AWM OR GR II (SIZE) AWG (SIZE mm<sup>2</sup>) CU 600 V VW-1 OR C(UL) TYPE T90 NYLON OR TWN75 FT1.