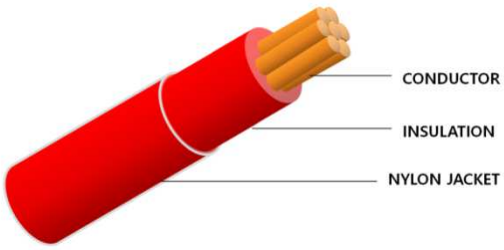
INSULATED WIRE

THERMOPLASTIC- INSULATED WIRE UL TYPE

THHN / THWN / THWN-2

SCOPE AND DEFINITIONS

This standard specifies the requirements for 600V single-conductor, thermoplastic-insulated wires and cables.



APPLICATION

These cables are often used in wiring circuits for machine tool wiring and the internal wiring of appliances in dry or wet locations.

CONDUCTORS

- Solid or Stranded bare copper per ASTM-B3, ASTM-B8 and ASTM-B787

INSULATION

- Color-coded Polyvinyl Chloride (PVC).
- Heat and moisture-resistant
- Flame retardant compound per UL 83. (QMTT2 PVC compound listed by UL)

NYLON JACKET

- Types THHN, THWN, THWN-2 (THW,THHW,TW type is excluded.)
- A tough, polyamide, Nylon outer covering (QMTT2 PVC compound listed by UL)

PRODUCT TYPE AND RATE

Thermoplastic-insulated wire is rated 600V and is designated as follows:

TW	flame-retardant, moisture-resistant thermoplastic insulation. The wire is rated 60°C wet or dry.
THHN	flame-retardant and heat-resistant thermoplastic insulation with a jacket of extruded nylon. The wire is rated 90°C dry only
THW	flame-retardant, moisture- and heat-resistant thermoplastic insulation. The wire is rated 75°C wet or dry.
THW-2	Same as THW except that the wire is rated 90°C wet or dry.
THHW	flame-retardant, moisture- and heat-resistant thermoplastic insulation. The wire is rated 90°C dry and 75°C wet.
THWN	flame-retardant, moisture- and heat-resistant thermoplastic insulation with a jacket of extruded nylon. The wire is rated 75°C wet or dry.
THWN-2	Same as THWN except that the wire is rated 90°C wet or dry.

PRODUCT SERVICE DESCRIPTION

- Flame Retardant : FV-2/VW-1, FT4(Vertical tray), CT USE (*. FT4, CT USE – 1/0AWG and larger)
- Oil Resistance : PR I / PR II
- Sunlight resistance
- Cold bend / Cold Impact at -40℃

PRODUCT PRINT LEGEND

- WAVENET THHN/THWN-2 (UL) E548689 **XX**AWG (**X.XX**mm^2) STRANDED 600V VW-1 OR T90 NYLON/TWN75 C(UL) FT1 (-25°C) WEC84

- WAVENET THHN/THWN-2 (UL) E548689 **XX**AWG (**X.XX**mm2) SOLID 600V VW-1 OR T90 NYLON/TWN75 C(UL) FT1 (-25°C) WEC84

STANDARDS & REFFERENCE

ASTM B8	Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft
ASTM B3	Standard Specification for Soft or Annealed Copper Wire
UL 1581	Reference Standard for Electrical Wires, Cables, and Flexible Cords
UL 2556	Wire and Cable Test Methods
UL 83	Thermoplastic-Insulated Wires and Cables

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INSULATED WIRE

THERMOPLASTIC- INSULATED WIRE UL TYPE

SIZE OF PRODUCT (TYPE : THHN/THWN/THWN-2)

AWG or kcmil	Cross-sectional Area	Number of Strands	Nominal diameter of conductor	Insulation Thickness	Nylon Jacket Thickness	Overall Diameter
	mm²	EA	mm	mm	mm	mm
14AWG SOL	2.08	1	1.63	0.38	0.10	2.59
12AWG SOL	3.31	1	2.05	0.38	0.10	3.01
10AWG SOL	5.26	1	2.59	0.51	0.10	3.81
14AWG	2.08	19	1.85	0.38	0.10	2.81
12AWG	3.31	19	2.32	0.38	0.10	3.28
10AWG	5.26	19	2.95	0.51	0.10	4.17
8AWG	8.37	19	3.71	0.76	0.13	5.49
6AWG	13.3	19	4.67	0.76	0.13	6.45
4AWG	21.2	19	5.89	1.02	0.15	8.23
3AWG	26.7	19	6.60	1.02	0.15	8.94
2AWG	33.6	19	7.42	1.02	0.15	9.76
1AWG	42.4	19	8.43	1.27	0.18	11.33
1/0AWG	53.5	19	9.45	1.27	0.18	12.35
2/0AWG	67.4	19	10.62	1.27	0.18	13.52
3/0AWG	85.0	19	11.94	1.27	0.18	14.84
4/0AWG	107	19	13.41	1.27	0.18	16.31
250KCMIL	127	37	14.60	1.52	0.20	18.04
300KCMIL	152	37	16.00	1.52	0.20	19.44
350KCMIL	177	37	17.30	1.52	0.20	20.74
400KCMIL	203	37	18.49	1.52	0.20	21.93
450KCMIL	228	37	19.61	1.52	0.20	23.05
500KCMIL	253	37	20.65	1.52	0.20	24.09
550KCMIL	279	61	21.72	1.78	0.23	25.74
600KCMIL	304	61	22.68	1.78	0.23	26.70
650KCMIL	329	61	23.60	1.78	0.23	27.62
700KCMIL	355	61	24.49	1.78	0.23	28.51
750KCMIL	380	61	25.35	1.78	0.23	29.37
800KCMIL	405	61	26.16	1.78	0.23	30.18
900KCMIL	456	61	27.79	1.78	0.23	31.81
1000KCMIL	507	61	29.26	1.78	0.23	33.28

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