UL 83 THHN-THWN-2

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UL 83 Type THHN / THWN-2 600 V +90 °C PVC/Nylon Conduit & Tray

UL 83 / ASTM B8 / CSA T90 · 600 V · −25…+90 °C industrial THHN-THWN-2 construction



UL 83 / ASTM B8 / CSA T90 | **600 V** | **−25…+90 °C (Wet & Dry)**

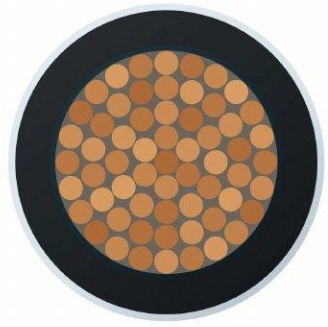
Application

UL 83 Type THHN / THWN-2 600 V +90 °C PVC/Nylon Conduit & Tray Building Wire engineered to UL 83 / ASTM B8 / CSA T90 for 600 V service across −25…+90 °C, featuring stranded copper conductor and nylon covering with minimum bending radius 5 × OD.

Typical uses: Commercial & Residential Building Distribution, Data Centers & Public Infrastructure, Fire-Safe Evacuation & Riser Shafts, Industrial Plant Balance-of-Plant Wiring, Automated Assembly & Packaging Lines

Construction





Cross-section, not to scale

1	Stranded copper conductor	UL 83 / ASTM B8 / CSA T90
2	PVC insulation	UL 83 / ASTM B8 / CSA T90
3	Nylon covering	UL 83 / ASTM B8 / CSA T90

Technical data

Typical values

Rated voltage / duty	600 V (UL 83 / ASTM B8 / CSA T90)	**Conductor construction**	Stranded copper conductor — High-conductivity copper conductor per UL 83 / ASTM B8 / CSA T90
Primary insulation / dielectric	PVC insulation — Extruded PVC insulation dielectric (continuous layer)	**Continuous operating temperature**	−25…+90 °C (Wet & Dry) per UL 83 / ASTM B8 / CSA T90
Short-circuit / peak thermal limit	+160 °C to +250 °C (5 s adiabatic limit depending on dielectric class)	**Minimum installation temperature**	−5 °C (thermoplastic) / −25 °C (cross-linked or elastomer) / −40 °C (metallic)
Outer protection / covering	Nylon covering — Extruded Nylon covering protective layer (continuous layer)	**Minimum bending radius**	5 × OD (installed / static routing)
Layer count & geometry	3 concentric/structural layers verified by cross-section inspection	**Environmental & chemical durability**	Engineered for industrial service in accordance with UL 83 / ASTM B8 / CSA T90
RoHS & REACH compliance	RoHS 2 (2011/65/EU + 2015/863) & REACH SVHC compliant	**Standards**	UL 83 / ASTM B8 / CSA T90

Sizes

12 standard constructions

Tick the sizes you need and send this page to info@tebaoflex.com or WhatsApp +86 185 9591 3361.

Order designation	Configuration	Outer Ø ≈ mm	Weight ≈ kg/km	Min. bend R fixed mm
THHN-THWN-2 Standard Production Schedule (600 V · −25…+90 °C (Wet & Dry)) 12 sizes				
☐ THHN-THWN-2 3G1.5	3 × 1.5 mm²	8.4	105	68
☐ THHN-THWN-2 4G1.5	4 × 1.5 mm²	9.2	128	74
☐ THHN-THWN-2 5G1.5	5 × 1.5 mm²	10.1	156	81
☐ THHN-THWN-2 3G2.5	3 × 2.5 mm²	9.8	148	78
☐ THHN-THWN-2 4G2.5	4 × 2.5 mm²	10.8	186	86
☐ THHN-THWN-2 5G2.5	5 × 2.5 mm²	11.9	228	95
☐ THHN-THWN-2 4G4	4 × 4.0 mm²	12.6	268	101
☐ THHN-THWN-2 4G6	4 × 6.0 mm²	14.2	365	114
☐ THHN-THWN-2 4G10	4 × 10 mm²	17.5	580	140
☐ THHN-THWN-2 4G16	4 × 16 mm²	20.4	845	163
☐ THHN-THWN-2 4G25	4 × 25 mm²	24.8	1,290	198
☐ THHN-THWN-2 4G35	4 × 35 mm²	27.9	1,710	223

– Single-core and multi-core sizes from 0.5 mm² up to 630 mm² (or AWG/kcmil) available per UL 83 / ASTM B8 / CSA T90.

Conductor resistance & current-carrying capacity

8 sizes

Cross-section	Max. DC R_{20} Ω/km	Current in air A (30 °C) ≈	Voltage drop mV/A-m
1.5 mm² (AWG 16)	13.30	18	29.0
2.5 mm² (AWG 14)	7.98	26	17.5
4.0 mm² (AWG 12)	4.95	34	10.9
6.0 mm² (AWG 10)	3.30	44	7.3
10 mm² (AWG 8)	1.91	61	4.2
16 mm² (AWG 6)	1.21	82	2.7
25 mm² (AWG 4)	0.78	108	1.7
35 mm² (AWG 2)	0.55	135	1.2

– Current ratings are for 3 loaded conductors at 30 °C ambient in free air/tray per IEC 60364-5-52 / NEC.

Standards and approvals

- UL 83 Compliant
- EN 10204 3.1 Routine Test Certificate
- CE, RoHS 2 (2011/65/EU) & REACH

Certifications

Management systems: ISO 9001, ISO 14001, ISO 45001

Request a quotation

Send the size, length and destination. An application engineer replies within 2 business hours.

WhatsApp / phone
+86 185 9591 3361

Email
info@tebaoflex.com

Web
tebaoflex.com/cables/ul-83-thhn-thwn-2-600v-pvc-nylon-conduit-building-wire

Typical values for this cable type, based on UL 83 / ASTM B8 / CSA T90. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.