



TIW TEX-E triple-insulated transformer wire

TIW TEX-E

Triple-Insulated Winding Wire (TIW) for High-Frequency

IEC 62368-1 Annex U / UL 2353 3-layer extruded reinforced-insulation winding wire (3.0 kV)



IEC 62368-1 Annex U / UL 2353

3,000 V AC (1 min) Reinforced

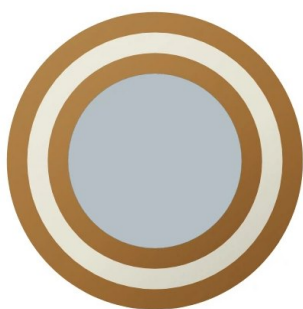
Direct Dip-Solderable (+420 °C)

Application

Safety-certified Triple-Insulated Winding Wire (TIW TEX-E) built to IEC 62368-1 Annex U, IEC 60950-1, IEC 61558-1, IEC 60601-1 and UL 2353 (Class B 130 °C & Class F 155 °C), featuring three independent concentric extruded polymer/fluoropolymer.

Typical uses: USB-PD GaN Fast Chargers, Laptop Adapters & Server SMPS, EV On-Board Chargers (OBC), Auxiliary DC-DC & BMS Isolation, Medical Power Supplies (IEC 60601-1 2×MOPP Isolation), Photovoltaic Microinverters & Industrial Gate-Drive Transformers, Telecom 48 V Rectifiers & LED Driver Flyback Transformers

Construction



Cross-section, not to scale

- 1 Tinned annealed oxygen-free copper (or enamelled Litz core)
- 2 1st Layer — Extruded golden modified polyester primary barrier
- 3 2nd Layer — Extruded middle dielectric isolation barrier
- 4 3rd Layer — Extruded Polyamide (TEX-E) or ETFE (TEX-F) outer skin

Technical data

Typical values

Safety isolation class	Reinforced / Double Insulation per IEC 62368-1 Annex U & UL 2353	Max rated working voltage	1,000 Vrms / 1,414 V peak (50/60 Hz to 1 MHz switching)
Routine 1-minute AC test	3,000 V AC rms (after mandrel bend, heat shock & abrasion)	Typical AC breakdown voltage	12.0 kV to 18.0 kV AC rms at +20 °C
Thermal class	Class B (+130 °C, TEX-E) · Class F (+155 °C, TEX-F / ETFE)	Direct dip-solderability	+410 °C to +440 °C for 3–5 seconds (TEX-E Class B)
Solid conductor Ø range	0.20 mm to 1.00 mm (in 0.05 mm steps)	Radial insulation wall (3 layers)	0.095 mm to 0.115 mm (approx. 100 µm total radial wall, +0.20 mm on OD)
High-speed winding	Low friction coefficient for 15,000 rpm CNC bobbin flyer winders	Varnish & potting compatibility	Resistant to transformer impregnating varnishes & epoxy potting
Standards	IEC 62368-1 Annex U · IEC 60950-1 · IEC 61558-1 · IEC 60601-1 · UL 2353 (OBJT2) · VDE		

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	Conductor Ø / Strands	Cu Area mm ²	Min 3-Layer Wall mm	Nom. OD mm	Max R20 Ω/km	Min / Typ BDV kV AC
TIW TEX-E Solid Tinned Copper 3-Layer Extruded Wire (Ø 0.20 mm – 1.00 mm, Class B 130 °C) 8 sizes						
☐ TIW-TEXE-0.20	Ø 0.20 mm Solid SnCu	0.031	0.090	0.40	589.0	3.0 / 13.5 kV
☐ TIW-TEXE-0.25	Ø 0.25 mm Solid SnCu	0.049	0.090	0.45	376.0	3.0 / 14.0 kV
☐ TIW-TEXE-0.30	Ø 0.30 mm Solid SnCu	0.071	0.095	0.50	261.0	3.0 / 14.5 kV
☐ TIW-TEXE-0.40	Ø 0.40 mm Solid SnCu	0.126	0.095	0.60	145.0	3.0 / 15.0 kV
☐ TIW-TEXE-0.50	Ø 0.50 mm Solid SnCu	0.196	0.100	0.70	92.6	3.0 / 15.5 kV
☐ TIW-TEXE-0.60	Ø 0.60 mm Solid SnCu	0.283	0.100	0.80	64.3	3.0 / 16.0 kV
☐ TIW-TEXE-0.80	Ø 0.80 mm Solid SnCu	0.503	0.100	1.00	36.2	3.0 / 16.5 kV
☐ TIW-TEXE-1.00	Ø 1.00 mm Solid SnCu	0.785	0.100	1.20	23.1	3.0 / 17.0 kV
TIW-Litz Multi-Strand Enamelled + 3-Layer Extruded High-Frequency Wire (Class B / F) 4 sizes						
☐ TIW-LITZ-7X0.20	7 × 0.20 mm PU Litz + 3L	0.220	0.100	0.82	83.5	3.0 / 15.0 kV
☐ TIW-LITZ-19X0.15	19 × 0.15 mm PU Litz + 3L	0.336	0.100	0.98	54.8	3.0 / 15.5 kV
☐ TIW-LITZ-30X0.10	30 × 0.10 mm PU Litz + 3L	0.236	0.100	0.88	78.2	3.0 / 15.0 kV
☐ TIW-LITZ-60X0.10	60 × 0.10 mm PU Litz + 3L	0.471	0.105	1.18	39.1	3.0 / 16.0 kV

– All TIW TEX-E sizes add only ~0.20 mm to the bare conductor diameter across all three extruded layers combined.

Standards and approvals

- ✓ IEC 62368-1 Annex U / IEC 60950-1 / IEC 61558-1 Triple-Insulated
- ✓ UL 2353 (OBJT2) Reinforced Insulation System Compliant

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/triple-insulated-winding-wire-tiw-for-high-frequency-switching-transformers



Typical values for this cable type, based on IEC 62368-1 Annex U / IEC 60950-1 / IEC 61558-1 / UL 2353 (OBJT2). Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.