



IEC 61788-26 REBCO HTS Roebel cable

HTS Roebel Cable

Transposed REBCO High-Temperature

Fully transposed meander-punched REBCO 2G HTS rectangular Roebel cable
(4.2 K–77 K)

IEC 61788-26 REBCO 2G HTS

Fully Transposed Roebel Bar

Low AC Loss · 4.2 K to 77 K

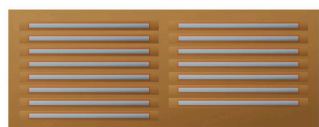


Application

Fully transposed High-Temperature Superconducting Roebel Cable (HTS Roebel Cable) built to IEC 61788-26 by precision-punching 12 mm REBCO 2G HTS coated-conductor tapes into meander-shaped strands (2 mm or 5.5 mm wide) and cabling 10 to 30 strands into a.

Typical uses: Utility 50/60 Hz HTS Power Transformers (65–77 K), MW-Class Cryogenic Aircraft & Marine Propulsion Motors, High-Energy Physics Accelerator Cos- θ & Block Dipoles, Inductive Superconducting Fault Current Limiters (SFCL)

Construction



Cross-section, not to scale

- 1 Meander-punched REBCO 2G HTS coated-conductor strands
- 2 Inter-strand turn insulation (optional insulated)
- 3 Outer turn-to-turn cryogenic insulation wrap

Technical data

Typical values

Critical current (I _c @ 77 K	450 A (10/2-4mm) to 5,400 A (30/5-12mm) in liquid nitrogen	Critical current (I _c @ 4.2 K, 13 T B ⊥	2,200 A (10/2-4mm) to 28,000 A (30/5-12mm) in liquid helium
Engineering current density (J _e @ 4.2	650 to 900 A/mm ² across the compact rectangular bar cross-section	50/60 Hz AC loss reduction vs. stacked	60 % to 80 % lower AC magnetisation & transport loss via full
Operating cryogenic temperature range	4.2 K (LHe) · 20–30 K (GHe/LH ₂ /LNe) · 65–77 K (subcooled LN ₂)	Thermal cycling & overload stability	Verified thermal ageing and short-circuit withstand per standard
Transposition pitch length	126 mm, 180 mm, 226 mm or 300 mm (customisable to coil turn circumference)	Minimum flatwise / easy-way bend radius	15 to 25 mm (unimpregnated) · Transverse stress limit ≥ 150 MPa (epoxy VPI)
Punch-edge seal & moisture protection	Optional post-punching Ag/Cu or SnPb edge coating + polyimide encapsulation	Environmental & chemical durability	Resistant to moisture, industrial fluids and service ageing
Standards	IEC 61788-26 (REBCO critical current), IEC 61788-8 (AC loss) & EuCARD-2		

Sizes

6 standard constructions

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

Order designation	Strand count & width	Bar W × T	Width mm	I _c (4.2K, 13T) kA	I _c (77K, 0T) kA	Pitch L _p mm
4 mm Narrow Low-AC-Loss Roebel Bars (2 mm Strands · Stators & Transformers) 2 sizes						
☐ ROEBEL-10/2-4mm	10 strands · 2 mm strand width	4.0×0.9 mm Bar	4.0	2.2	0.45	126
☐ ROEBEL-15/2-4mm	15 strands · 2 mm strand width	4.0×1.3 mm Bar	4.0	3.3	0.68	126
12 mm High-Current Magnet & Utility Transformer Roebel Bars (5.5 mm Strands) 4 sizes						
☐ ROEBEL-10/5-12mm	10 strands · 5.5 mm strand width	12.0×1.0 mm Bar	12.0	9.5	1.85	226
☐ ROEBEL-12/5-12mm	12 strands · 5.5 mm strand width	12.0×1.2 mm Bar	12.0	11.4	2.20	226
☐ ROEBEL-15/5-12mm	15 strands · 5.5 mm strand width	12.0×1.5 mm Bar	12.0	14.5	2.80	300
☐ ROEBEL-30/5-12mm (Double)	2×15 strands · 5.5 mm width	12.0×2.9 mm Bar	12.0	28.0	5.40	300

– Transposition pitch length (126, 180, 226 or 300 mm) is matched to the winding harmonic pitch to cancel coupling currents.

Standards and approvals

- ✓ IEC 61788-26 & IEC 61788-8 HTS Qualified
- ✓ CERN EuCARD-2 / Feather-M2 Dipole Architecture
- ✓ 100 % Strand-by-Strand I_c Mapped

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/transposed-rebco-high-temperature-superconducting-roebel-cable



Typical values for this cable type, based on IEC 61788-26 / CERN EuCARD-2 / IEEE 1726. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.