



NACE SP0169 HMWPE direct-burial CP cable

HMWPE Cathodic Protection Cable

600 V DC heavy-wall 110 mil HMWPE direct-burial cathodic protection header & anode cable



NACE SP0169 · 600 V DC

110/125 mil Heavy-Wall HMWPE

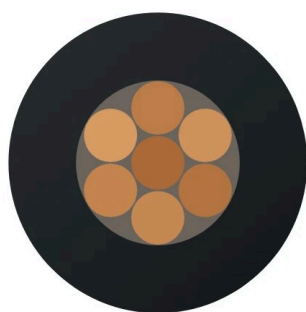
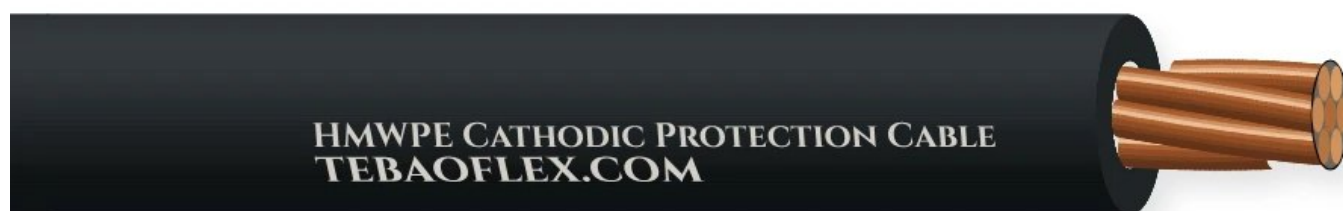
ASTM D1248 Type I Class C Cat 5

Application

Direct-burial Impressed Current and Galvanic Cathodic Protection cable (HMWPE Cathodic Protection Cable) manufactured to NACE SP0169 and ASTM D1248 Type I Class C Category 5 Grade E5 with stranded annealed copper (#10 AWG to 2/0 AWG) and single-extruded.

Typical uses: Oil, Gas & Water Transmission Pipeline CP Headers, Aboveground Storage Tank (AST) Bottom Cathodic Grids, Shallow Horizontal Coke-Breeze Groundbeds, Sacrificial Magnesium & Zinc Anode Lead Wires

Construction



Cross-section, not to scale

- 1 Stranded annealed bare copper (ASTM B3 / B8)
- 2 Concentric extrusion bonding interface
- 3 Heavy-wall High-Molecular-Weight Polyethylene (HMWPE)

Technical data

Typical values

Rated operating voltage	600 V DC / AC continuous	Factory spark & water-immersion HV test	15 kV AC dry spark test + 6.0 kV AC water-tank dielectric withstand test
Volume resistivity & IR @ 20 °C	$> 10^{16} \Omega \cdot \text{cm}$ · Insulation resistance $\geq 10,000 \text{ M}\Omega \cdot \text{km}$	Operating temperature range	-40 °C to +75 °C continuous in wet/dry soil
Thermal cycling & overload stability	Verified thermal ageing and short-circuit withstand per standard	Nominal HMWPE wall thickness	110 mil (2.79 mm for #12–#2 AWG) · 125 mil (3.18 mm for #1–250 kcmil)
Tensile strength & ultimate elongation	$\geq 19.3 \text{ MPa}$ (2,800 psi) · Elongation at break $\geq 600 \%$	Minimum bending radius	$6 \times \text{OD}$ (static trench) · $8 \times \text{OD}$ (pulling)
Environmental stress-crack resistance	Zero failures after 1,000 h (ASTM D1693 Condition C)	Soil chemical, humic acid & UV	2.0–2.5 % finely dispersed carbon black (ASTM D1248 Class C)
Standards	NACE SP0169 (AMPP), ASTM D1248 Type I Class C Cat 5, ASTM B8 & ICEA		

Sizes

8 standard constructions

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

Order designation	AWG / Metric	Rating	Outer Ø ≈ mm	Copper kg/km	Weight ≈ kg/km	Max. DC cur. A	Min. bend R mm
600 V DC Heavy-Wall HMWPE Direct-Burial Cathodic Protection Cables 8 sizes							
☐ HMWPE-CP 1×10 AWG (110 mil)	10 AWG (5.26 mm ²) · 7W	600 V DC	8.5	47	78	40	51
☐ HMWPE-CP 1×8 AWG (110 mil)	8 AWG (8.37 mm ²) · 7W	600 V DC	9.3	75	112	55	56
☐ HMWPE-CP 1×6 AWG (110 mil)	6 AWG (13.3 mm ²) · 7W	600 V DC	10.3	119	162	75	62
☐ HMWPE-CP 1×4 AWG (110 mil)	4 AWG (21.2 mm ²) · 7W	600 V DC	11.5	189	238	95	69
☐ HMWPE-CP 1×2 AWG (110 mil)	2 AWG (33.6 mm ²) · 7W	600 V DC	13.0	300	358	130	78
☐ HMWPE-CP 1×1 AWG (125 mil)	1 AWG (42.4 mm ²) · 19W	600 V DC	14.8	379	452	150	89
☐ HMWPE-CP 1×1/0 AWG (125 mil)	1/0 AWG (53.5 mm ²) · 19W	600 V DC	15.8	478	558	175	95
☐ HMWPE-CP 1×2/0 AWG (125 mil)	2/0 AWG (67.4 mm ²) · 19W	600 V DC	17.0	603	692	200	102

– Larger collector header sizes up to 4/0 AWG and 250 kcmil are also supplied.

Standards and approvals

- ✓ NACE SP0169 / AMPP Direct-Burial CP Compliant
- ✓ ASTM D1248 Type I Class C Category 5 Grade E5
- ✓ ICEA S-95-658 600 V Dielectric Qualified

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/hmwpe-direct-burial-deep-anode-bed-cathodic-protection-cable



Typical values for this cable type, based on NACE SP0169 / ASTM D1248 Type I Class C Cat 5 / ICEA S-95-658. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.