submarine & offshore power composite cable

10–170kV Offshore Wind Cable

10–170 kV AC Offshore Wind Array & Export XLPE Submarine Power and Opt

IEC 60502-2 / IEC 60840 / CIGRE TB 490 · 10 kV – 170 kV · Submarine & offshore power



IEC 60502-2 / IEC 60840 / CIGRE TB 4

10 kV – 170 kV (-20 to +90 °C)

Steel / Copper Wire Armour & PP Serv

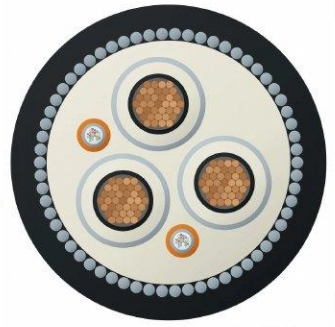
Application

10–170 kV AC Offshore Wind Array & Export XLPE Submarine Power and Optical Composite Cable (IEC 60502-2 / IEC 60840 / CIGRE TB 490) engineered for 10 kV – 170 kV service across -20 to +90 °C (min. bend radius 15 × OD).

Typical uses: Offshore Wind Inter-Array & Export Submarine Links, Subsea Island & Platform HV/MV Power Interconnects, Offshore Oil & Gas Drilling Rigs & FPSOs, Commercial Vessels, Polar Ships & Marine Propulsion

Construction





Cross-section, not to scale

1. 10-170 kV XLPE Power Phase Cores
2. Lead /Aluminum-Plastic Water Barrier
3. Stainless-Steel Tube Optical Units
4. Steel / Copper Wire Armour & PP Serving

Technical data

Typical values

Rated voltage / transmission duty	10 kV – 170 kV (IEC 60502-2 / IEC 60840 Offshore Wind 10–170 kV Submarine Power & Optical Specification)	**Core / conductor construction**	10-170 kV XLPE Power Phase Cores — Stranded copper/aluminum conductors with triple-extruded XLPE
Primary dielectric / buffering	Lead /Aluminum-Plastic Water Barrier — Radial moisture barrier over each insulated power core	**Continuous operating temperature**	−20...+90 °C (subsea & offshore duty)
Hydrostatic & thermal stability	Verified thermal and hydrostatic stability per IEC 60502-2 / IEC 60840 Offshore Wind 10–170 kV Submarine Power & Optical Specification	**Storage & transport temperature**	−40...+80 °C on export wooden/steel winch reel
Outer protection / armouring	Steel / Copper Wire Armour & PP Serving — Heavy wire armour + polypropylene roving outer protection	**Minimum bending radius**	15 × OD
Armour, strength member & mechanical duty	Stainless-Steel Tube Optical Units — Hermetic optical fiber units placed in cable interstices	**Seawater, hydrostatic & hydrolysis resistance**	Engineered for continuous seawater immersion, pressure cycling and hydrolysis resistance per IEC 60502-2 / IEC 60840 Offshore Wind 10–170 kV Submarine Power & Optical Specification
Oil, drilling mud & abrasion resistance	Resistant to marine hydraulic oils, salt mist, winch sheave wear and seabed abrasion per IEC 60502-2 / IEC 60840 Offshore Wind 10–170 kV Submarine Power & Optical Specification	**RoHS & REACH compliance**	RoHS 2 (2011/65/EU + 2015/863) & REACH SVHC compliant
Standards	IEC 60502-2 / IEC 60840 Offshore Wind 10–170 kV Submarine Power & Optical Specification		

Sizes

3 standard constructions

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

Order designation	Configuration	Core / stranding	Outer Ø ≈ mm	Net weight ≈ kg/km	Breaking / tensile kN ≈	Min. bend R mm
10–170kV Offshore Wind Cable Construction Schedule (−20...+90 °C) 3 sizes						
☐ 10–170kV Offshore Wind Cable Config A	3×25–50 mm² (or 3P+FO Composite)	Compacted / Class 5 Cu/SnCu + FO	32.0	1,850	85.0	380
☐ 10–170kV Offshore Wind Cable Config B	3×95–150 mm² (or Heavy EOM)	Compacted / Class 5 Cu/SnCu + FO	48.5	4,280	130.0	580
☐ 10–170kV Offshore Wind Cable Config C	3×240–400 mm² (or Trunk HV/MV)	Compacted Cu + Lead/Armour + FO	78.0	9,650	210.0	950

– Custom core cross-sections, pair/fibre counts, armour breaking loads and continuous winch/seabed lengths available per IEC 60502-2 / IEC 60840 Offshore Wind 10–170 kV Submarine Power & Optical Specification.

Electrical, optical & thermal parameters

3 sizes

Configuration	Max. DC R_{20} / Atten. Ω/km or dB/km	Rating / Impedance	Operating temp.
3×25–50 mm² (or 3P+FO Composite)	0.49	10 kV – 170 kV (Subsea/MV)	−20...+90 °C
3×95–150 mm² (or Heavy EOM)	0.19	10 kV – 170 kV (Subsea/MV)	−20...+90 °C
3×240–400 mm² (or Trunk HV/MV)	0.07	10 kV – 170 kV (Trunk/HV)	−20...+90 °C

– Every production length undergoes routine conductor DC resistance, high-voltage dielectric or OTDR continuity and dimensional verification.

Standards and approvals

- IEC 60502-2 / IEC 60840 / CIGRE TB 490 Compliant
- EN 10204 3.1 Factory 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/submarine-power-optical-cable-10-170kv

Typical values for this cable type, based on IEC 60502-2 / IEC 60840 Offshore Wind 10–170 kV Submarine Power & Optical Specification. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.