subsea ROV umbilical, AUV tether & sonar tow cable

Custom Engineered ROV Umbilical

DNV-ST-E402 / MIL-DTL-24643 · 3.0/3.3 kV · Subsea rov umbilical, auv tether & sonar



DNV-ST-E402 / MIL-DTL-24643 | 3.0/3.3 kV (-40 to +80 °C) | Double Torque-Balanced Steel Wire Ar

Application

Custom Engineered ROV Umbilical featuring single-mode / multi-mode optical unit and double torque-balanced steel wire armour (DNV-ST-E402 / MIL-DTL-24643, 3.0/3.3 kV, -40 to +80 °C, min. bend radius 12 × OD).

Typical uses: Work-Class & Observation ROV Umbilicals and TMS Tethers, Offshore Aquaculture Net Cleaners & Subsea Cage Inspection, AUV, Ocean Glider & Expendable Spool-Payoff Micro-Tethers, USV Towed Sonar Arrays, Seabed Crawlers & Subsea Trenchers

Construction





Cross-section, not to scale

1. Single-Mode / Multi-Mode Optical Unit
2. Power & Control Copper Conductors
3. Aramid / LCP Braided Strength Member
4. Double Torque-Balanced Steel Wire Armour

Technical data

Typical values

Rated voltage / operating system	3.0/3.3 kV (DNV-ST-E402 Custom Engineered Deepwater ROV Armored Umbilical Specification)	**Core / conductor construction**	Single-Mode / Multi-Mode Optical Unit — Hermetic stainless-steel tube / tight-buffered optical unit
Primary dielectric / optical buffer	Power & Control Copper Conductors — Stranded copper conductors with Cross-linked polyethylene (XLPE) insulation	**Continuous operating temperature**	−40…+80 °C (submerged seawater & topside deck service)
Hydrostatic & thermal cycling endurance	Verified cold-bend and wet dielectric stability across −40…+80 °C per DNV-ST-E402 Custom Engineered Deepwater ROV Armored Umbilical Specification	**Storage & transport temperature**	−40…+80 °C on export wooden/steel cable drum
Outer jacket / sheath protection	Double Torque-Balanced Steel Wire Armour — Contra-helical high-tensile galvanized steel wire armour	**Minimum bending radius**	12 × OD
Reinforcement / screen / bedding layer	Aramid / LCP Braided Strength Member — High-tenacity synthetic fiber braid absorbing dynamic tension	**Seawater, hydrolysis & oil resistance**	Resistant to permanent seawater immersion, hydrolysis, hydraulic oil and bio-fouling per DNV-ST-E402 Custom Engineered Deepwater ROV Armored Umbilical Specification
Hydrostatic pressure & water blocking	Radial and longitudinal water-blocking integrity verified per DNV-ST-E402 Custom Engineered Deepwater ROV Armored Umbilical Specification	**RoHS & REACH compliance**	RoHS 2 (2011/65/EU + 2015/863) & REACH SVHC compliant
Standards	DNV-ST-E402 Custom Engineered Deepwater ROV Armored Umbilical 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	Max. pulling kN ≈	Min. bend R mm
Custom Engineered ROV Umbilical Construction Schedule (−40…+80 °C) 3 sizes						
☐ **Custom Engineered ROV Umbilical 3×6 + 4×SM + 2TP**	3×6 mm² Power + 4×SM Fiber + 2×2×0.75	SnCu + Gel Tube + Contra-Helical GSWA	20.8	1,280	115.0	250
☐ **Custom Engineered ROV Umbilical 3×10 + 6×SM + 4T**	3×10 mm² Power + 6×SM Fiber + 4×2×0.75	SnCu + SS Tube + Double Steel Armour	25.4	1,890	185.0	305
☐ **Custom Engineered ROV Umbilical 3×16 + 8×SM/MM**	3×16 mm² Power + 8×SM/MM + 3×2×1.0	SnCu + SS Tube + Heavy GSWA Pack	30.2	2,680	260.0	365

– Custom core counts, optical fiber channels, wet-mate terminations and continuous winch lengths available per DNV-ST-E402 Custom Engineered Deepwater ROV Armored Umbilical Specification.

Electrical, optical & thermal parameters

3 sizes

Configuration	Max. DC R_{20} Ω/km	Rating / Impedance / Load	Operating temp.
3×6 mm² Power + 4×SM Fiber + 2×2×0.75	3.30	3.0/3.3 kV · 115 kN MBS	−40…+80 °C
3×10 mm² Power + 6×SM Fiber + 4×2×0.75	1.91	3.0/3.3 kV · 185 kN MBS	−40…+80 °C
3×16 mm² Power + 8×SM/MM + 3×2×1.0	1.21	3.0/3.3 kV · 260 kN MBS	−40…+80 °C

– Every production length undergoes routine conductor DC resistance / OTDR optical attenuation, AC dielectric and dimensional verification.

Standards and approvals

- DNV-ST-E402 / MIL-DTL-24643 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/custom-engineered-rov-umbilical

Typical values for this cable type, based on DNV-ST-E402 Custom Engineered Deepwater ROV Armored Umbilical Specification. Values for your order are confirmed in the quotation. Subject to change without notice. Jiangsu Tebaoflex Special Cable Co., Ltd., Taicang, Jiangsu, China.