

Umbilical Portfolio

Connectivity solutions for challenging applications



Oceaneering umbilicals are designed and manufactured drawing on over 35 years of industry experience. Our umbilicals have met and continue to meet the demands of complex project requirements including increased functionality, harsh environmental conditions, and delivery of cost-effective connectivity solutions.

FEATURES

Expertise in engineering

In-house design validation capabilities

Extensive track record

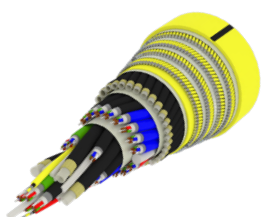
Oceaneering Umbilicals

Oceaneering's 35 year track record and engineering expertise ensures our clients' umbilicals support their specific project requirements for subsea distribution of hydraulic fluid, chemicals, power, and communications. Our umbilicals are designed to meet the demands of both static and dynamic applications and function in water depths deeper than 10,000 ft / 3,000 m, withstanding the demands of increasingly harsh environmental conditions.

Our designs can include thermoplastic hose and/or steel tube conduits facilitating the distribution of hydraulic fluids and/or chemicals. Oceaneering umbilicals are able to support power transmission and communication functions through the inclusion of low voltage, medium voltage, and fiber optic cables.

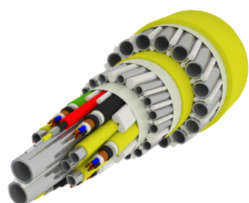
Using components manufactured in-house and those supplied by vendors, our designs provide customers with optimized solutions focused on reliability, cost effectiveness, and longevity.

Oceaneering ensures the suitability and quality of our designs by offering customized programs for analysis and validation testing. Significant investment in state-of-the-art testing facilities at our Rosyth and Niteroi manufacturing sites has established Oceaneering as a leader in design qualification and verification.



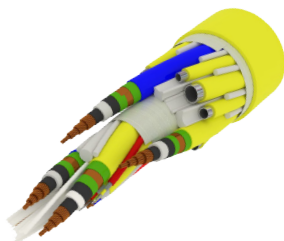
Thermoplastic Hose Umbilicals

Thermoplastic hose conduits included in an umbilical's design provide a safe and efficient method for the distribution of hydraulic fluids and chemicals, supporting chemical injection and hydraulic control. Power and communication functions may be integrated with the inclusion of electrical and fiber optic cables.



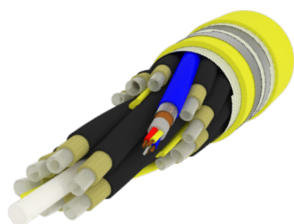
Steel Tube Umbilicals

Steel tubes can be used in umbilical designs for conveyance of hydraulic control fluids and/or injection chemicals for subsea applications. A steel tube umbilical can contain low and/or medium voltage electric cables and fiber optic cables. Steel tube umbilicals generally do not need to be armored due to the inherent axial strength of the steel tubes themselves. Armoring can be added to reduce dynamic fatigue, provide weight for stability on the seabed, and offer mechanical protection.



Power Umbilicals

The increased demand for power subsea drives the inclusion of medium voltage power cables within the umbilical function and, in some cases, the need for dedicated power umbilicals. The cost benefit of combining the functionality of power cores with thermoplastic hoses, steel tubes, low voltage, and fiber optic cables in an umbilical has the potential to justify the engineering challenges presented by this type of design. Oceaneering has expertise in engineering solutions for these complex umbilical types.



IWOCS Umbilicals

An installation workover control umbilical contains thermoplastic hoses for conveyance of hydraulic control fluid and can include low voltage electrical cables. Hose internal bores range from 3/16 in to 2 in and hose pressures range from 3,000 psi to 12,500 psi. An installation workover and control umbilical provides a temporary interface between surface controls and subsea equipment.

Global Umbilical Manufacturing Capabilities

Oceaneering manufactures a full range of umbilicals at each of its three strategically located facilities in Niteroi, Brazil, Panama City, Florida, and Rosyth, UK. Each site benefits from manufacturing assets, handling equipment, deepwater quayside locations and full load out facilities.

In addition to the manufacturing and load-out capabilities documented below, Oceaneering sites in Niteroi and Rosyth are equipped to complete design validation testing.

Niteroi, Brazil



Panama City, Florida



Rosyth, UK

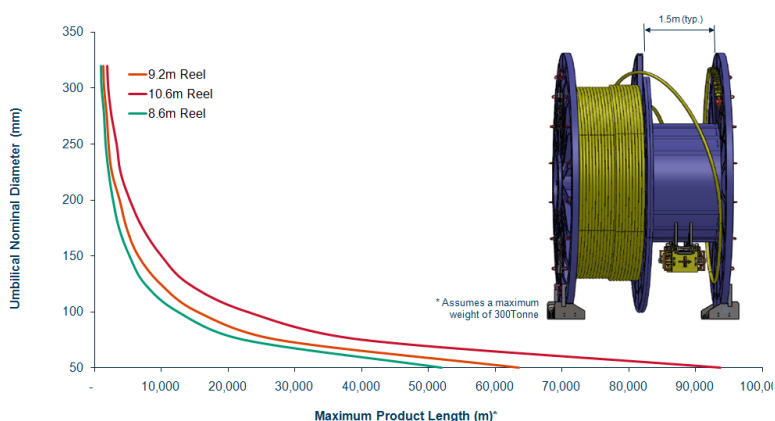


	Niteroi	Panama City	Rosyth
Planetary Cabler	16 Primary Bobbins 30 Secondary Bobbins	16 Primary Bobbins 20 Secondary Bobbins	16 Primary Bobbins 20 Secondary Bobbins
Extrusion	Computer controlled with online measurement of diameter via laser micrometry and thickness via ultrasound	Computer controlled with online measurement of diameter via laser micrometry and thickness via ultrasound	Computer controlled with online measurement of diameter via laser micrometry and thickness via ultrasound
Armoring	96 Bobbins, single cage Max wire size: 0.177 in / 4.50 mm	96 Bobbins, dual cage Max wire size: 0.236 in / 6.0 mm	96 Bobbins, dual cage Max wire size: 0.266 in / 6.75 mm
Load Out	Reels, up to 8.6 m flange, 300 tonne	Carousel, 500-7,000 tonne capabilities Reels, up to 10.3 m flange, 300 tonne	Carousel, 400-7,000 tonne capabilities Reels, up to 9.8 m flange, 300 tonne up to 10.6 m flange, 400 tonne
Water depth at quayside	22 ft / 7 m	36 ft / 11 m	30 ft / 9 m

Product Length Capacity

The graphic to the right gives an indication of the maximum continuous length of product that can be accommodated on a shipping reel for a given outside umbilical diameter.

Longer lengths can be accommodated by using larger or modified reels and carousels. For more detailed information, please contact Oceaneering.





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