



### Exploration & Production

# Thermoplastic Umbilicals

## THERMOPLASTIC UMBILICALS

Prysmian Subsea Umbilicals, Risers and Flowlines (SURF) is offering products for connecting subsea assets to a platform or floating production system at the surface. A full product range of exceptional quality to meet the demands of our customers, designed to minimize the total cost of ownership and simplify installation and operation while maintaining the highest possible safety and quality standards.

### APPLICATION

Prysmian Thermoplastic Umbilicals are used in different configurations to transfer high & low pressure fluids, chemical injection fluids, annulus fluids and electrical power & control signals.

### STANDARDS & APPROVALS

Reference Standard: ISO 13628-5 / API 17E  
Prysmian thermoplastic control hoses are qualified in accordance with API (American Petroleum Institute). All Prysmian hoses are designed and tested to withstand the most severe environmental and chemical conditions.

### QUALITY & TESTING

Prysmian Group has one dedicated R&D Center for SURF Solutions based in Brazil, which is fully integrated with other 16 R&D centers spread worldwide, in order to benefit from Prysmian's high level of synergy and efficiency. The R&D center for SURF in Brazil is structured to allow a full development of Umbilicals and Flexible Pipes. This center relies on dedicated facilities and qualified engineers and technicians with a specific experience in SURF solutions. Our laboratories offer a great variety of solutions for application development of polymeric materials and metals, failure analysis and plant support, mainly to provide the largest possible range of options. All raw materials used in Prysmian SURF products are developed, tested and certified according to the most stringent Quality Standards.

### DESIGN & CONSTRUCTION

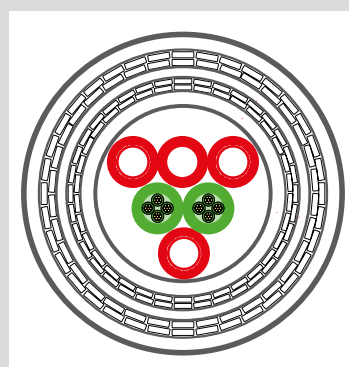
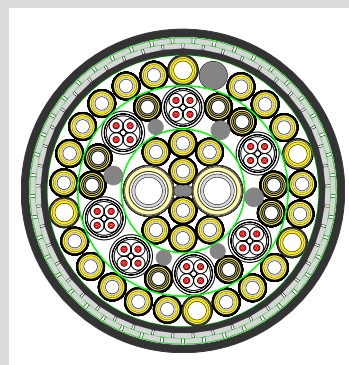
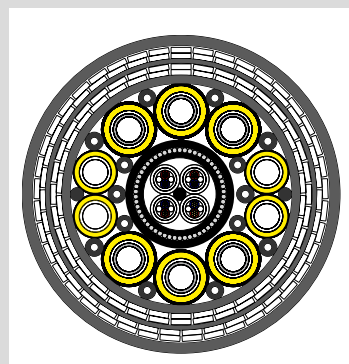
Prysmian Thermoplastic Umbilicals for control management use thermoplastic hoses with a nylon bore.

However, Prysmian has developed and qualified a broad range of hoses for different applications. As a matter of fact, when Thermoplastic Umbilicals are used for chemical injection management, they may be subject to low internal pressure, due to operational conditions and therefore cause unbalance between internal and external pressures, leading to hoses collapse.

For this specific application Prysmian Thermoplastic Umbilicals use High Collapse Resistant (HCR) hoses, adding to hoses an internal layer of metallic carcass to solve hose collapse issues.

Additionally, Prysmian have the unique capabilities and expertise to provide and develop a full range of cable components incorporated in our umbilical solutions – from medium voltage cables to optical fiber cables – designed and manufactured to meet the widest variety of specific needs.

Multifunctional and highly sophisticated cables, which integrate power and communication, are also available for special applications.





## Oil & Gas - SURF

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## PRODUCT RANGE

Prysmian is able to provide a global solution for SURF products, for instance, from the cross-section definition and raw material selection up to the full qualified product and services during the product installation.

PARAMETER	VALUE
Maximum Diameter	Up to 350 mm
Strength Member	Galvanized steel armor wire (Round or Flat), helically wound
Manufacturing length limitations	Qualified splicing processes are available Length limited by umbilical design, packing and installation method
Maximum allowable installation tension, breaking tension, and crush load	Designed to meet specific project's requirements
Axial, bending, and torsional stiffness	Based on specific design
Design life	25 years, as standard. Longer design life can be provided.
Packing, transportation, and load out	Based on Customer's needs Options available include: reel, carousel, pallets, baskets
Installation methods	Umbilicals designed to suit Customer's installation method

## THERMOPLASTIC HOSES

ID	DESIGN WORKING PRESSURE (PSI)
1/4 in	10000
3/8 in	10000
1/2 in	10000
3/4 in	7500
1 in	5000

## HRC HOSES

ID	DESIGN WORKING PRESSURE (PSI)
3/8 in	5000
1/2 in	10000
3/4 in	5000

This product information sheet is provided for reference only.  
For more details, please contact your Prysmian representative.

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