

PolyOil™ Umbilical Protector



The PolyOil™ Umbilical Protector is a safe, easy to use and reliable ‘in riser’ protector. Suitable for both mid-joint and cross coupling applications, the Umbilical Protector has proven impact, and is wear-resistant, non-corrosive, and benefits from low friction properties.

- Hinged design – simple and fast to fit
- Toggle / swing bolt – fast-latching operation of pre-engaged bolt
- Light weight – safe handling and fast make-up
- Proven impact, wear resistant, and low friction material
- Protective to delicate materials (non-metallic)
- Non-corrosive
- Outstanding umbilical cable protection through resilient material
- Buoyant material that floats

PolyOil Umbilical Protector

The protector is available in either single or dual hinged designs and can both be made with low SG material, which will make them float.

It offers improved functionality, ease of handling, and fast make-up times. These light-weight designs also benefit from the fast-latching Toggle Pivot Bolt system, used successfully on many current PolyOil products.

The protector can be used in the following applications:

- Workovers
- Completion running
- Landing strings
- Inside riser
- Open water
- Mounted tubing
- Mounted drill pipe
- Multiple umbilical
- External to riser

Materials and design

PolyOil uses a range of high impact, wear-resistant materials which by their unique processing methods make them the toughest available. The natural properties of the polymers make them low weight, safe, and easy to handle, while their resiliency makes them kinder on all other equipment.

Our Polymer products are tried, tested, and recognized worldwide.

| Material | Tensile strength MPa | Hardness (Shore D) | Charpy impact strength (23 Deg °C - kJ/m ²) | Charpy impact strength (40 Deg °C - kJ/m ²) | Melt point (Deg °C) | Co-efficient of Friction ⁽¹⁾ (Deg °C) |
|--|-------------------------|-----------------------|---|---|--------------------------|---|
| SP | 81.2 | 81 | 12.9 | 5.9 | 220 | 0.06-0.15 |
| SRM 15 | 54 | 77 | 20 | 14 | 214 | 0.10-0.20 |
| SRM 40 | 26 | 59 | ~ | ~ | 214 | 0.10-0.20 |
| LSG | 18 | 69 | 16 | - | 214⁽²⁾ | 0.05-0.15 |
| ~ Indicates no result, as this material does not break under the Charpy Impact Test. | | | | | | |

(1) Co-efficient of friction results are dependent on many factors, for example, friction speed, temperature, lubricants, and specific material properties. Results are based on previous field work.

(2) Long term service temperature is 90 °C. Short term service temperature can be up to 150 °C depending on the application, e.g. open sea/in riser, brine composition, exposure time.

Elasticity and water absorption

| | SP average values | LSG average value | SRM 15 | | | SRM 40 | | |
|---|-------------------|-------------------|-------------|-------------|----------|-------------|-------------|----------|
| | | | Dry as made | Conditioned | Immersed | Dry as made | Conditioned | Immersed |
| Modulus of Elasticity MPa | 8.1 | 442 | 2100 | 900 | 444 | 1045 | 466 | 268 |
| Water absorption % | 3.2 | - | 14 | 2.5 | 14.1 | 214 | 1.7 | 12.6 |
| Data is based on plaques with a thickness of 3.24 mm. Thicker parts tend to be stiffer, so the absorption rate will also be slower. | | | | | | | | |
| Dielectric constant (dry): DIN 53483 at 10 ⁶ Hz = 60 approx, DIN 53483 at 10 ⁶ Hz = 5.3 approx. | | | | | | | | |
| Dielectric strength (dry): DIN 53481 = 115 Kv/mm approx. | | | | | | | | |
| Poisson Ratio: 0.35; Sound Speed: 2380 m/s | | | | | | | | |

Recycling statement

PolyOil products contain polymer, metal and rubber materials that should each be recycled according to the appropriate local governing legislation. Polymer materials can be granulated down to pellets and reused in new products or applications. The rubber and metal components and parts should be recycled according to industry standard practices.

Availability

The PolyOil design team can develop a solution to your specific issues. For more information, contact the sales group at Emerson.

For more information: [Emerson.com/global](https://emerson.com/global)

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