

ProShell Cable Protection Systems

The requirement for subsea cable protection is increasing; the escalating global demand for energy and data transfer means that both power and telecoms cables are now laid in increasingly demanding environments.

ProShell protects in the following areas:

- **Shore landings:** when the cable runs across a public beach
- **Cable crossings:** product separation and post cable lay protection
- **Unburied cables:** impact protection from dropped objects
- **Scour prevention:** protection from rock placement
- **Reefs and rocky terrain:** abrasion resistance

The loss of transmission due to damage will ultimately require retrieval and repair of the cable at huge cost. The application of ProShell can help mitigate such risks.



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Design

Comprising of interlocking half shells of polyurethane, ProShell is moulded in a range of thicknesses and lengths, providing flexing characteristics to suit the minimum bend radius of the cable. ProShell is secured in position with either stainless steel, alloy, titanium or polymer banding.

ProShell – typical values

Property	Cable type	
	Telecoms	Power
Outer diameter (mm)	76	240
Wall thickness (mm)	22	25
Effective length (mm)	1000	1500
Wt per half shell (kg)	2.0	13.5
Qty. per pallet (max)	300	35

Materials

ProShell is produced from marine grade polyurethane specifically designed for use in subsea applications.

Typical physical properties at 25°C

Property	Value	Units
Shore hardness	81	°A
Cured density	1.1	g/cm ³
Tensile strength	13	MPa
Elongation at break	400	%
Tear Strength	56	MPa
DIN abrasion	106	mg

Testing

ProShell undergoes the following test procedures, according to client specification and referencing API17L standard.

- **Materials testing:** i.e tensile, compressive strength, abrasion resistance
- **Impact resistance:** seabed drop test
- **Bend test:** for installation purposes based on cable MBR
- **Fit-up test:** to ensure the ProShell remains firmly clamped to the cable

BMP will also undertake third party testing and engagement of Independent Verification Agencies on request.

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