

SUBSEA CABLE PROTECTION PRODUCTS



The Blue Ocean Projects (BOP) range of Cable Protectors is designed to provide protection for subsea cables or pipes at offshore wind or tidal energy foundations, in shallow water and at landfalls, boulder fields or areas of rocky seabed where cable burial is impractical.

Consisting of a series of interlocking half shell modules to form a vertebrae bend restrictor around the cable, the BOP Cable Protectors are manufactured in ductile iron to provide:

- Strong Bend Restriction to ensure that product minimum bend radius is respected
- Protection to the cable from impact and abrasion
- Increased stability through added weight
- Ease of installation and cost effective protection
- Greater articulation angle achieved at each joint than conventional 'split pipe', facilitating use over sheaves, chutes and quadrants
- Smooth bore to facilitate longitudinal cable movement where required, for instance for cable pull-in or cable tension relief
- No sharp edges
- All bolted assembly with identical top and bottom castings and use of large fasteners with built in nut recesses for simplicity, speed and reliability of assembly
- Smooth outer profile for ease of pulling through apertures and structures
- Range of accessories available, including male/male adaptors with cable clamps, female/female adaptors, end pieces, pulling heads, hang off, and I/J tube centralisers

Castings are manufactured in a high capacity, highly mechanised, 'automotive grade' UK foundry (with full ISO9001 quality and ISO14001 environmental certification) for quality, consistency of fitting, material traceability and dependable lead times. Tooling is manufactured directly from 3D CAD software models for quality and precision.



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Outside & Inside Views

Cable Protectors

The BOP Cable Protector has a ball and socket (shoulder) joint between each interlocking module, allowing movement in any direction up to the lock out (minimum) bend radius. Supplied in EN-GJS-400-15 ductile iron, with socket head cap screws and nuts as fasteners between each pair. Self-coloured, galvanized or subsea grade paint finishes are available.

The existing product range includes:

Bore Internal diameter	Maximum Cable diameter	Pitch (effective length)	Lock out bend radius	Casting Wall thickness	Weight in air/casting	Weight in air/metre	Weight in water/meter
120mm	108mm	400mm	2.0m	8.5mm	8.2kg	41.0kg/m	35.2kg/m
150mm	138mm	400mm	2.5m	8.5mm	10.7kg	54.0kg/m	46.0kg/m
180mm	168mm	400mm	2.5m	8.5mm	12.5kg	62.5kg/m	53.7kg/m

Please note: larger and smaller sizes and alternate specifications are also available, please contact us for further information



Male/Male Adaptor ('Dogbone') and Cable Clamp



Female/Female Adaptor



Flange Connector

End Piece

Male/Male Adaptor ('Dogbone') and Cable Clamp

The male/male adaptor ('Dogbone') is designed to incorporate a cable clamp. This is typically used as the starting point for assembly. The standard cable clamp is designed as a three part clamp which provides greater tolerance of variations in cable diameter and cable 'out of roundness' than a conventional two part clamp, and also provides greater tension holding capability for a given clamping pressure.

Female/Female Adaptor

The female/female adaptor can be used as a transition adaptor with polyurethane tubular cable protectors; within 'second end' protection arrangements for array cables; and to couple runs starting from opposite directions.

Flange Connector

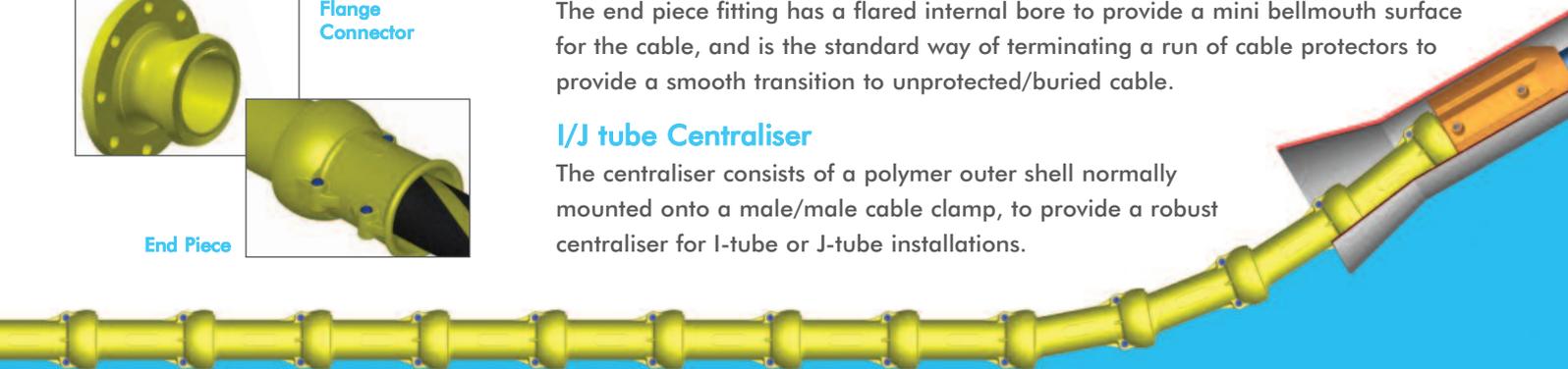
This provides a starting point for connection to a structure.

End Piece

The end piece fitting has a flared internal bore to provide a mini bellmouth surface for the cable, and is the standard way of terminating a run of cable protectors to provide a smooth transition to unprotected/buried cable.

I/J tube Centraliser

The centraliser consists of a polymer outer shell normally mounted onto a male/male cable clamp, to provide a robust centraliser for I-tube or J-tube installations.



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