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Subsea

Bend restrictor

Protection from overbending

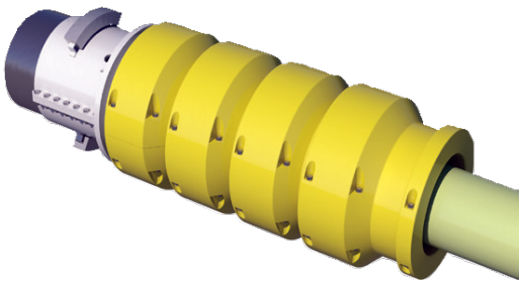
When a flexible pipeline, umbilical or cable connects to a rigid structure, normal movement during operation or forces incurred during installation and retrieval, can cause damage and failure at the connection point. A bend restrictor controls the bending of the flexible pipeline, umbilical or cable to prevent damage from occurring.



Bend restrictor

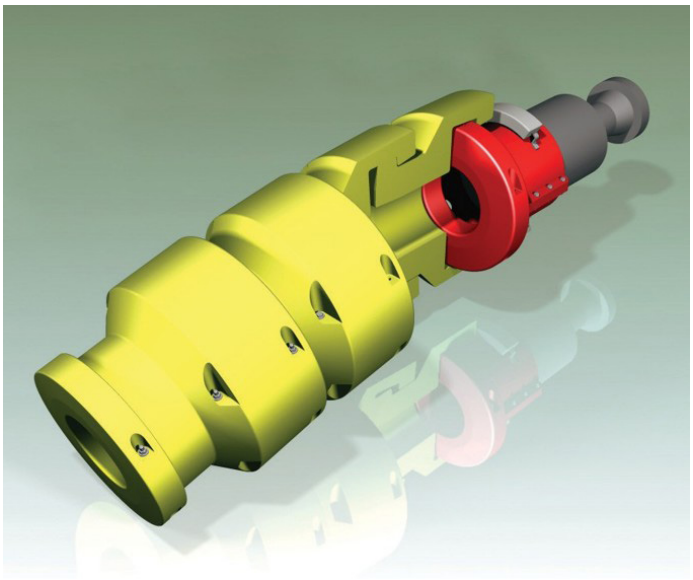
The bend restrictor has been designed to protect flexible pipelines, umbilicals and cables from overbending and buckling during their installation or operation. The system comprises of a number of interlocking elements that form a semirigid curved structure, engineered to inhibit bending beyond a designated minimum bending radius (MBR) at a specified design load in static and quasidynamic applications, on any diameter subsea cable, umbilical, riser or flowline.

The bend restrictor two-piece, polymeric, split design is attached to the pipeline or cable during deployment, improving installation efficiencies without compromising on joint integrity or cascade failure risks between parts. Typically deployed at pipeline end terminations (PLETs) and wellhead connectors, bend restrictors can be supplied with specific end terminations to allow for easy mating to any rigid structure that needs to protect its flexible pipeline, umbilical or cable from overbending, for example tether clamps.



Bend restrictors are available as both a standardised product for a wide range of common diameters, loads and MBRs, reducing lead time and increasing installation efficiencies, and alternatively as a fully bespoke solution allowing design customisation of a wide range of features, providing a custom approach for your specific application.

Bend restrictors design methodology, materials and manufacturing processes are fully API 17L certified and REACH compliant. Manufactured from material that is lightweight in water reduces the load and provides increased durability, ensuring protection throughout the design life in excess of 25-30 years.



Benefits

- Maintains manufacturers recommended minimum bend radius (MBR) during the life of the project
- Protection from over bending and buckling
- Provides a suitable load path from flexible to fixed structures
- Reduces the loads on the termination structure compared to heavy steel alternatives
- Standardised and bespoke custom design options available
- Lightweight, quick, easy and safe to install
- Multiple handling options available
- API 17L certified material
- REACH compliant material - Hg (Mercury free)
- Reduced mass per metre
- Streamlined manufacturing with standardised options
- No maintenance required
- Marine grade polymers and corrosion resistance

Applications

- Subsea flexible pipelines, umbilicals & cables
- SURF protection at end terminations
- Flexible risers and jumpers
- Steel tube and thermoplastic umbilicals
- Thermoplastic composite risers
- Flowlines
- Fibre optic cables and communications
- Bonded rubber hoses
- Control and power cables
- PLETs
- J-tube entries
- Wellhead connectors
- Flying leads
- Crossings

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