



Protecting seismic survey cables

Vor BS (Bend Stiffener)

Where any cable or hose connects to a structure, normal movement during operation (dynamic loading) or forces incurred during installation and retrieval (static loading) can cause catastrophic failure of the cable or hose, at the termination point. The failure mode can be through collapse, rupture of internal lines or even rupture of the external layers leading to escape of the contents to the environment. This can happen as the result of a single event or be caused through fatigue damage over time.

Bend limiting devices are provided to protect the cable or hose from these situations and perform the following functions:

- Maintain the manufacturers recommended minimum bend radius (MBR) during the life of the project
- Provide a suitable load path from cable or hose, to fixed structure
- Reduce point loading at the termination to an acceptable level

Vor BS (Bend Stiffener)

Vor BS acquired its name because the conical shape gradually increases the overall stiffness of the cable or hose in order to prevent over bending

at the termination point. Manufactured from elastomeric material, a bend stiffener is suited to the constant wave and current induced motion of dynamic installations but can also be used for static applications.

Vor BS are project specific and fully engineered to accommodate the defined tension and angle combinations as Trelleborg Offshore strive to perform at every level to meet the customers' needs. The two types of Bend Stiffeners are split and non-split bend stiffeners. These are offered in a variety of attachment methods, such as brackets, flanges & slide-on.



Examples and benefits of some of these are below:

Vor SS (Split Stiffener)

- Fully split to allow bolt-on installation after termination
- Completely field installable and replaceable
- Improved resistance to general wear and tear in offshore operations
- Customizable mounts
- Adaptable to a number of towing attachment assemblies
- Fully spoolable

Vor AHS (Air Hose Stiffener)

- Slide on design
- Attached via band strap
- Profiled internal interface detail
- Simple attachment method, no termination machining required
- Cost effective solution for small air hoses

Vor DS (Dynamic Stiffener)

- Provides localized stiffness to the cable or umbilical to maintain minimum bend radius.
- Customizable mounts
- Adaptable to a number of towing attachment assemblies
- Customized design to meet customer load and angle combinations

Information needed to specify a Vor BS:

Cable Properties:

- Cable diameter and tolerances
- Minimum bend radius in Static (storage) and Dynamic (deployed) configurations
- Cable bend stiffness

Duty:

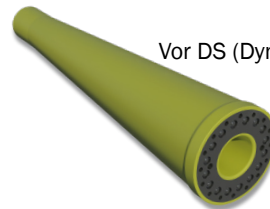
- Actual tension and angle combinations
- On deck handling cases
- Will system be spooled or not
- Deployment Scenario with full schematic drawing

Interface Design:

- Material preference
- Protective coating if required
- Size restrictions



Vor AHS (Air Hose Stiffener)



Vor DS (Dynamic Stiffener)

Contact Us

Trelleborg Offshore delivers innovative and reliable offshore solutions that maximize business performance to meet your needs. Our dedicated and highly skilled staff are always on hand to provide seamless process support from initial idea, through to delivery and beyond.



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