

Pneumatic Fenders

New, ISO17357-1:2014 compliant,
high performance pneumatic fenders

TRELLEBORG
PNEUMATIC FENDER
PRESSURE
ISO17357-1
REINFORCE
4.5D
SERIAL
AG09008
50kPa
11 TYRE CORD
9.0L

PRODUCT BRIEFING



Better by Design

Designed to address the unique needs of port applications and for offshore ship-to-ship transfers, Trelleborg has developed a new ISO17357-1:2014 compliant, high performance pneumatic fender.

The design of this quality assured, market leading fender features a thinner, lighter body, with improved netting and hemispherical ends designed to offer better functional performance and enhanced continuity of end fittings for optimum deflection capability.

Trelleborg's new pneumatic fender promises a number of key customer benefits

- Fully ISO17357-1:2014 compliant
- Comprehensive document package guarantees compliance
- Faster production for quicker delivery
- Improved technical and functional quality
- Full material traceability
- High quality materials ensure improved performance
- Lighter, making it easier to transport and handle
- A range of ISO compliant sizes in standard or high-pressure versions
- Improved consistency for easier maintenance and repair
- Improved design at the hemispherical ends for superior functional performance

IMPROVED MATERIALS

In addition to improvements in the design of the fender, improved materials have been engineered to ensure a stronger overall performance. After detailed research into optimum tire cord reinforcement, we have re-evaluated our materials to enhance fender performance. Unlike other manufacturers who use tire cords for the body and chafer fabric at the two hemispherical ends to construct a fender, Trelleborg now uses 100% synthetic tire cord for the construction of the entire fender. This improvement directly enhances the fender's operational ability because synthetic tire-cord has a higher tensile strength than chafer fabric. By incorporating this into the new fender, the stability, longevity, and shape retention have all significantly improved.

A key consideration in the selection of fenders is the external rubber layer composition, which is a major factor in the longevity of pneumatic fenders. Many suppliers use rubber compounds, which fail to comply with the new ISO requirement. In addition, a large number of suppliers turn to low cost recycled rubber-based compounds. Others use chafer fabric, a cheaper alternative to tire-cord. The chafer fabric is unable to provide Minimum Endurable Pressure (MEP) at 0% and 60% deflection, which is imperative for pneumatic fenders to work efficiently in harsh conditions.

Many suppliers reduce the number of plies, or use a reinforcing layer made from a low-cost suboptimal combination of chafer fabric and tire cord as they lack the basic design concepts to produce high quality pneumatic fenders. Specifiers should also be wary of inefficient, cost-reducing methods used by suppliers such as the use of a heating jacket instead of a mold during the curing process.

This is because the use of a heating jacket significantly reduces the accuracy of manufacturing fenders to the size originally specified.

BEWARE NON-COMPLIANT TACTICS

- The use of non-compliant low cost recycled rubber-based compounds
- The use of low cost, low quality tire-cord
- The use of chafer fabric instead of tire-cord
- Use of a heating jacket, rather than a mold, for curing
- A lack of materials testing
- A lack of final product testing
- A lack of material traceability
- Claiming an irrelevant ISO standard (ISO 9001 or ISO 9002, rather than ISO 17357-1:2014)
- Providing fake aircraft tires
- Using low quality chains and accessories

Trelleborg's new pneumatic fender goes above and beyond the minimum requirements of the ISO 17357-1:2014 standard which recommends

the use of synthetic tire-cords but does not make it mandatory. This demonstrates our best practice approach to delivering superior products that incorporate optimum, high quality materials.

GUARANTEED PERFORMANCE

Trelleborg is open and transparent about not only meeting but exceeding the demands of the ISO17357-1:2014 standard with quality assurance documents and test results shared in a comprehensive, fully-authenticated supporting document package. Proof data, inner and outer rubber material specifications and pressure test data are all included as standard for even greater peace of mind.

Many suppliers do not perform stringent materials and product testing, and many of those that do, fail to test to the requirements of the ISO standard. All of Trelleborg's materials and product are rigorously tested beyond the requirements of the ISO standard and validated by a specialist third party to give you complete confidence in the quality of our fenders. Our long-standing expertise and heritage, together with our quality assured supply chain, give you the reassurance you need to ensure unrivaled pneumatic fender performance.



WE ENCOURAGE CLIENTS TO VISIT OUR MANUFACTURING AND TESTING FACILITY

In fender manufacture, testing of materials is usually carried out in the manufacturer's facility before or after production of the final products. Sometimes, testing is witnessed by third parties, but there is always an element of doubt as to whether the material tested is used in the manufacture of the final product.

Unlike many other manufacturers, Trelleborg provides full traceability for all materials used in the final fender.

We will provide the following quality assurance documentation during your factory visit:

- ISO certification
- Prototype test reports for parallel compression
- Angular compression
- Compression recovery
- Puncture resistance tests

We also provide test reports on commercial fenders for:

- Hydrostatic pressure and air leakage
- Full rubber properties testing for inner and outer rubber
- Confirmation of the synthetic tire cord

APPLICATIONS

Pneumatic fenders are ideal for permanent and semi-permanent port applications and for offshore ship-to-ship transfers. Fast and easy to deploy, Trelleborg's quality assured fenders ensure large clearances are maintained between the hull and jetty or other vessels. In addition, risk of damage during mooring is minimized, protecting the people and the cargo on board.

Floating pneumatic fenders are a versatile choice, ensuring low reaction force and hull pressure across a wide range of vessel categories and sizes, including the latest vessel types, such as ULCCs, LNG and bulk carriers, FSOs and FSPOs.

THE FULL RANGE

Trelleborg supplies a wide range of ISO compliant sizes in standard or high-pressure versions. Smaller fenders can be supplied as hook type, whilst larger fenders are commonly fitted with a chain-tire net for added protection. For navy ships, a grey body is also available while other colors are available upon request. Custom sizes can be designed and manufactured at short notice, so customers with specific requirements can still enjoy the fastest lead times.

KNOW YOUR ISO

Pneumatic fenders should be fully ISO17357-1:2014 compliant, and have supporting, authenticated certification to prove it.

ISO 9001/9002 is not an indicator of pneumatic fender performance.



Trelleborg is a world leader in engineered polymer solutions that seal, damp and protect critical applications in demanding environments. Its innovative solutions accelerate performance for customers in a sustainable way.

WWW.TRELLEBORG.COM/MARINE



twitter: [@MarineInsights](https://twitter.com/MarineInsights)
youtube.com/user/TrelleborgMarine
flickr.com/photos/MarineInsights
linkedin.com/MarineInsights
MarineInsightsBlog.Trelleborg.com