



# Extended protection for North America

Introducing a five year warranty on marine fenders, backed by Trelleborg's financial strength.



# Introduction



**American shipping is in a time of flux, as the Panama Canal expansion creates a new lane of traffic, increasing shipping from West to East coast and allowing more and larger ships to transit the U.S.**

The project is expected to create increased demand for ports to handle the new breed of Panamax vessels. Terminal owners and operators, now more than ever, need to collaborate with a strategic partner, to evolve infrastructure and rise to these new challenges.

To facilitate this time of change and become a partner of choice for North American ports and terminals, Trelleborg has committed significant resources to its presence in the region. Whatever your application, Trelleborg will help you to ensure your facility adapts to the next generation of shipping and logistics.

## COMMITMENT TO NORTH AMERICA

As part of this commitment to the region, Trelleborg recently acquired Maritime International, Inc. There were many natural synergies in the approaches the two organizations take to safety and technology. Both are focused on design and engineering excellence, and delivering the highest quality products to customers through rigorous testing and aftersales service.

Trelleborg believes in local, feet on the ground presence as a key component in delivering exceptional levels of customer service. Maritime International built its strong reputation in the U.S. around its exceptional levels of service and rapid response, with its two rings and a 'response in an hour' policy which is now setting the standard for performance across the whole Trelleborg marine systems operation in North America.

Bringing the two together allows customers to capitalize on the best of both companies.

*"Boosted by the financial strength of Trelleborg, we look forward to continuing to provide the excellent products and services that customers from both legacy companies have come to expect, backed up by extended warranties and surety bonds that we can truly stand by."*

**David LeBlanc, President,  
Maritime International**

*"Bringing both organizations together allows us to capitalize on the best of both companies, to further strengthen our offering for our customers."*

**Richard Hepworth, President,  
Trelleborg's marine systems operation**

# Trelleborg Marine Systems in North America

Trelleborg Marine Systems is a global leader in design, manufacture, installation and support for fender systems, docking and mooring equipment, oil and gas transfer technology, navigation and piloting, ship performance management and surface buoyancy. Trelleborg believes strongly in supporting customers with a local presence, which means people speaking your language, working to your time zone. The company's commitment to North America has led to committing significant resources to establishing a strong local footprint.



## A comprehensive presence



### **BROUSSARD, LOUISIANA:**

The headquarters of Trelleborg's marine systems operation in North America is located in Broussard, Louisiana, where the company also designs and manufactures all rubber and steel based solutions for the region.



### **BERRYVILLE, VIRGINIA:**

Built from the ground up in 2014, the Berryville site houses a 36,000 square foot manufacturing facility for foam-based marine fenders and buoys. As part of its ongoing commitment to accelerating performance in a sustainable way, Trelleborg has invested heavily in new, advanced polyurethane spraying and foam winding equipment to enhance production efficiencies.



**HOUSTON, TEXAS:** As Trelleborg's marine systems operation's representative in the global capital for oil and gas, the Houston office offers business development support, on behalf of the whole business unit, to global projects requiring assistance from within the region. The Houston office serves the local U.S. and Gulf of Mexico region across all product areas.



**PORT OF VERMILION, LOUISIANA:** Trelleborg has a quayside fabrication yard in Port of Vermilion, Louisiana, which allows larger fabricated structures to be loaded out directly onto barges.

# Commercial support

**The collaboration between Trelleborg and Maritime International has already resulted in exciting changes to the new company's combined offering. With a keen eye on service, Trelleborg is now happy to offer extended warranties, financially backed by warranty bonds, across its entire product range.**

As part of its premium specification, both technical and commercial, Trelleborg will offer extended warranties of up to a remarkable five years, backed by warranty bonds, to assure the quality and performance of all of its fender systems.

These warranties are dependent on following Trelleborg's best practice specification, which includes the requirement for materials and performance testing, and a schedule for inspections and maintenance through the life of the product.

Should the fender suffer a defect, Trelleborg will repair or replace it after up to five years in service, as long as customers have undertaken the recommended inspection and maintenance schedule stipulated by Trelleborg.



## Unparalleled quality

High quality fenders are essential to the safety and efficiency of port operations, protecting vessels and terminals alike during berthing, docking and mooring. However, the industry has historically undervalued this mission critical equipment, often looking for low cost solutions, and in the process, jeopardizing operations.

Trelleborg takes a smarter approach to fender specification, design and manufacture, and is committed to refocusing the industry on high quality solutions that will help to protect port infrastructure and investment. In this spirit, the company has undertaken substantial research into:

**Rubber fenders:** ingredient selection, applying the right correction factors, manufacturing and measuring quality and building and curing.

**Foam fenders:** ingredient selection.

We are committed to this research program and will continue to evolve it to raise the bar on industry best practice.



# A complete portfolio of fender solutions

## **SUPER CONE FENDERS (SCN)**

SCN fenders are the latest generation of 'cell' fenders, with optimal performance and efficiency. The conical body shape makes the SCN stable even at large compressions. It is the perfect solution for a huge range of applications including general cargo berths, bulk terminals, oil and LNG facilities and RoRo and cruise terminals.

## **SCK CELL FENDERS**

SCK Cell fenders have a long track record and remain popular thanks to their simplicity, high performance and strength. Trelleborg's SCK fenders come in a wide range of standard sizes, and are suitable for oil and LNG facilities, bulk terminals, offshore platforms, container berths and RoRo and cruise terminals.

## **ARCH FENDERS**

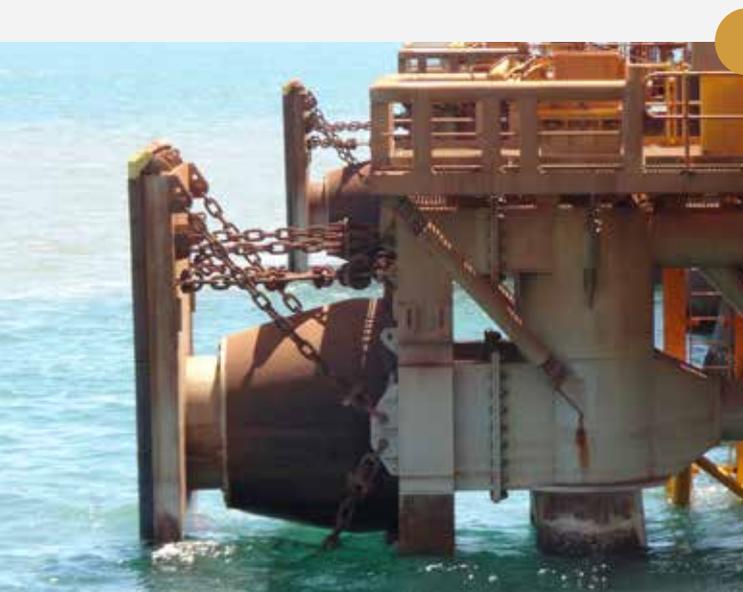
Trelleborg's arch fenders are a simple, rugged solution that provides reliable and trouble free service for a wide variety of berths, even under the most severe conditions. A robust solution for applications including RoRo berths, general cargo, workboat harbor and barge and tug berths.

## **LEG FENDERS**

Leg fenders provide an extremely compact solution, ideal for when fenders need to be mounted in limited space. These versatile fenders have a modular design and are available as Unit Elements, UE V-Fenders, MV Elements, MV V-Fenders and MI Element solutions.

## **PARALLEL MOTION FENDERS (PMF)**

Trelleborg's PMF technology can reduce reaction forces by up to 60% when compared with traditional designs. The panel on the fender always remains vertical, but can cope with large berthing angles. Easily and quickly installed this low maintenance solution is ideal for naval facilities, RoRo and fast ferry berths, LNG and tanker terminals and high tidal zones.



Trelleborg's entire rubber fender range also includes its innovative, patented Slide In, Slide Out fender system, designed to reduce maintenance requirements, by significantly reducing the time and effort taken to complete a fender wear change-out.

# Pneumatic fenders

## CHAIN-TIRE NET PNEUMATIC FENDER (CTN)

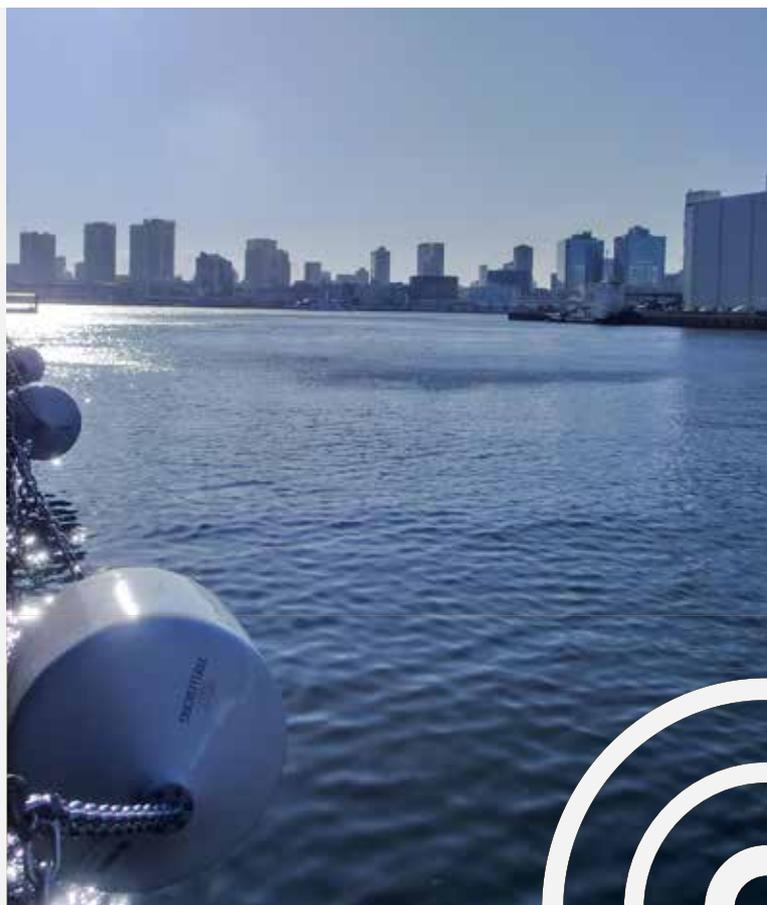
Chain-tire net (CTN) pneumatic fenders feature a lattice of used tires, connected by a network of horizontal and vertical chains which add further protection to the fender body. The chains are galvanized for greater corrosion resistance and covered by rubber sleeves to prevent abrasive damage to the outer rubber. They're ideal for oil and gas tankers, fast ferries and aluminium vessels.

Trelleborg has recently 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 design, improved performance of the hemispherical ends and enhanced continuity of end fittings for optimum deflection capability.

## LOW PRESSURE PNEUMATIC FENDERS (LP)

LP pneumatic fenders have evolved from a client need to avoid high pressure upon the hull structure of vessels, while effectively absorbing the kinetic energy of the moving vessel during berthing. They're a perfect solution for ship-to-ship operations, weak and thin hulled vessels and emergency operations.



# Foam fenders

## SEA GUARD

An unsinkable design, and virtually indestructible, Sea Guard fenders work equally well in harbors or between vessels. Their low hull pressure protects soft skinned ships and combines a durable, non-marking finish with low maintenance. They're the ideal solution for cruise ships, container vessels, bulk cargo, RoRo and ferries, oil and gas tankers, navy berths and ship-to-ship transfers.

## SEA CUSHION

Sea Cushion fenders are designed for hard work. Their superior grade foam core, extra tough skin and chain-tire net makes them the most rugged floating fender on the market, so they're ideal for even the most demanding applications. For LNG and oil terminals, ship-to-ship operations, offshore boat landings, military applications and shipyards, whatever happens, the Sea Cushion will not burst, deflate or sink.



# End-to-end capabilities

**Trelleborg has over 40 years' experience in providing advanced marine fenders, oil and gas transfer, ship performance solutions, navigation and piloting, docking and mooring and surface buoyancy, from long before a project starts, to far beyond installation.**

**SUPPORT AND CONSULTANCY:** Trelleborg works with consultants and contractors, to support the development of robust specifications that will ensure optimum outcomes for clients.

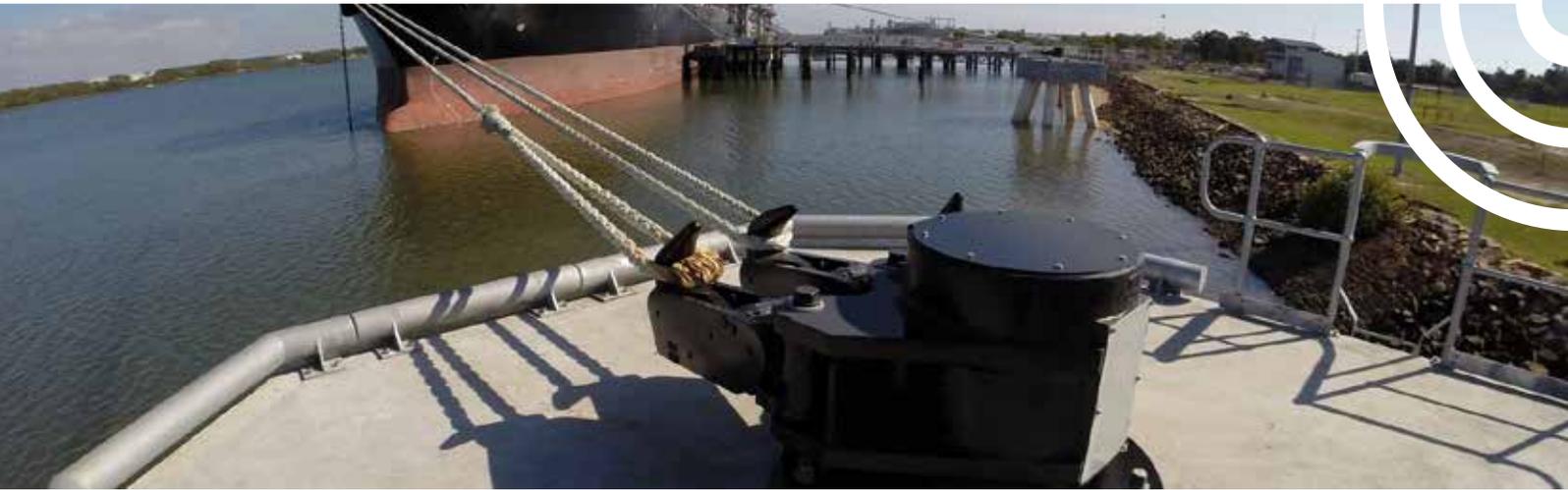
**CUSTOMIZED DESIGN:** Trelleborg helps clients define the ideal solution for the structure, the best materials for the environment and the best design for long service life and low maintenance. Trelleborg can help you decide the right solution for your specification, with experts on hand to help you take a smarter approach to your project needs in order to meet and exceed them

**LOCAL MANUFACTURING:** Trelleborg is able to design, manufacture and test customized solutions for North American projects, with all activities carried out within the region.

**STATE OF THE ART TESTING:** From full size compression testing of large rubber fenders, to small scale model testing and cyclic and durability testing, Trelleborg provides the best performance in the industry. Trelleborg's full-scale, high-speed test rig is the biggest fender test rig in operation in the industry, capable of testing up to the largest commercially available sizes. Trelleborg also carries out full materials testing both before and after production.

**A COMMITMENT TO SERVICE:** Trelleborg is committed to providing the very best service to clients, whenever they need it. That includes full aftersales service, operational and maintenance training, and a commitment to be on site whenever clients need us.





## The wider portfolio

**Beyond fender systems, Trelleborg designs, manufactures and installs oil and gas transfer safety systems, ship performance technology and docking and mooring solutions for marine environments all over the world. With comprehensive service and support across the whole product portfolio, Trelleborg's polymer engineering expertise also extends to a range of surface buoyancy products.**

**OIL AND GAS TRANSFER:** A pioneer in Ship-Shore Links (SSL) and Emergency Shut-Down (ESD) technology for the LNG industry, Trelleborg's SeaTechnik™ SSL has been an industry standard for almost 20 years. More recently, Trelleborg's Universal Safety Link (USL) was developed for the emerging LNG small-scale transfer, bunkering and fuelling application spaces. The Emergency Shutdown Link (ESL) targets non-LNG applications such as LPG and ethane, and other oil and gas chemical transfer operations.

**SHIP PERFORMANCE:** Fuel is the single largest operational cost of running a vessel. Trelleborg has been developing electronic systems including Ship Performance Optimization Systems for over 30 years, providing operators and owners with huge savings.

**DOCKING AND MOORING:** Calling on over 30 years' experience in developing cutting-edge docking and mooring systems, Trelleborg understands the demands of the modern terminal and can provide customized, integrated docking and mooring packages to meet the needs of any onshore or offshore specification.

**NAVIGATION AND PILOTING:** Trelleborg is a world leader in the design and manufacture of advanced piloting and navigation solutions for offshore energy and pilotage operations. Its solutions support any offshore and pilotage operation to the highest reliability and safety levels.

**SURFACE BUOYANCY:** Trelleborg's proven competencies in polymer engineering and the production of surface buoyancy products enable a reliable, state-of-the-art service for the commercial sector, with a comprehensive range of resilient foam buoys and Aids to Navigation (AtoNs).

**SERVICE AND SUPPORT:** Service does not stop at installation, so Trelleborg offers full aftersales support, including comprehensive training and maintenance programs that can be tailored to meet the exact needs of your application and equipment.



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.

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