



CUSTOM-MADE FENDER SYSTEMS FOR

## Search & Rescue (SAR)

*When every second counts—  
rely on the best in performance  
and protection.*



## Engineered for the toughest missions at sea

When every second counts, reliability is everything. Modern Search & Rescue (SAR) vessels are engineered to perform in the harshest maritime environments, delivering exceptional speed, stability, maneuverability and crew safety during critical rescue operations. Built for endurance and rapid response, SAR vessels combine advanced hull technology, high-performance propulsion systems and mission-specific equipment to ensure maximum operational capability in all weather conditions.

From offshore rescue missions and coastal patrol operations to emergency medical evacuations and disaster response, SAR vessels are developed to meet the demanding requirements of coast guards, naval forces, rescue organizations and professional operators worldwide



## Advanced Fender Systems to perform Without Compromise

At Fender Innovations, we design and manufacture some of the world's most advanced marine fender systems for high-performance and professional maritime applications. In critical applications such as Search and Rescue (SAR), performance, safety, and reliability are non-negotiable. Our fender systems are specifically engineered to meet these demanding requirements, delivering superior toughness, durability and adaptability when it matters most. They are exceptionally lightweight, strong, flexible and durable, providing maximum protection without compromising vessel performance.

Every solution is custom-engineered to match the vessel, its operational profile and specific mission requirements. By combining advanced materials, precision engineering and tailor-made production techniques, Fender Innovations delivers fender systems that enhance the vessels efficiency, handling, safety and long-term durability in the world's most demanding marine environments.

Our fender solutions are ideally suited for: All-weather lifeboats, Pilot vessels , Fast rescue craft , Heavy-duty RIBs, Research and survey vessels, Superyacht tenders, Unmanned marine systems, Windfarm support vessels, Special operations craft, unmanned marine systems and more.





### Build for Extreme conditions

Our custom-made fender systems are engineered with a strong focus on:

- Ultra-lightweight construction for maximum vessel performance
- Superior impact absorption in extreme operating conditions
- Exceptional flexibility and durability under heavy-duty use
- Enhanced maneuverability and operational control
- Maximum protection for vessels, crew and passengers
- Reduced maintenance requirements and long-term operational reliability
- Seamless integration with high-speed and lightweight vessel designs
- Tailor-made engineering for mission-specific applications
- Outstanding resistance to harsh marine environments and repeated impacts
- Optimized performance without compromising speed, balance, or efficiency



*Weight reduction- Freedom of Form, Adaptable, Seamless, Repairable, Minimal down time*

## KEY FEATURES

### **Super Strong Where Necessary, Ultra- Light Where Possible**

Our advanced fender systems provide an ultra-lightweight alternative to traditional rubber fenders, offering weight reductions of up to 12 times while maintaining exceptional strength, flexibility and durability. The weight of our fenders are comparable to heavy-duty inflatable tubes. The substantial reduction in vessel weight, contributes directly to:

- Improved acceleration and higher top speed
- Increased fuel efficiency and extended operational range
- Better vessel balance and maneuverability
- Improved toughness and overall flotation capacity
- Operational safety and performance
- Reduced structural loads wear
- Improved crew handling and operational control
- Superior impact absorption and protection

Engineered to withstand repeated impacts, heavy-duty operations and extreme weather conditions, our fender systems are trusted by professional operators worldwide where reliability, durability, safety and performance are mission-critical.





### Tailor-Made with Complete Freedom of Design & Seamless Integration

Every Fender Innovations system is individually engineered to match the vessel's hull shape, operational requirements, and design vision with absolute precision. Seamlessly formed around corners and complex curves, our fender systems enhance both aesthetics and functionality while delivering superior protection, impact absorption, and wear resistance.

We manufacture fenders in virtually any shape and in one continuous piece up to 20 meters in length – with longer lengths available upon request.

Whether based on 2D CAD drawing, 3D CAD models, physical templates, or on-site measurements, we support both new-build projects and refit applications. By carefully optimizing material properties, we achieve the perfect balance between flexibility, contact surface, durability, and hull conformity.



## Engineered Material Combinations

Through advanced material engineering and carefully optimized core structures, our fender systems deliver superior impact absorption, an optimized contact surface and long-term durability without compromising vessel aesthetics or performance. The high-quality, non-absorbent core materials prevent water ingress and eliminate unnecessary weight gain over time, ensuring consistent performance in demanding marine environments. Our standard systems operate reliably in temperatures from -30°C to +55°C. Custom temperature specifications are available on request.



## Repairable

Our high quality, non-absorbent core material structure prevents water absorption, allowing fast and effective emergency repairs to be carried out in the event of damage. This minimizes downtime, prevents further damage, and ensures the fender system continues to perform at its highest level. Following emergency repairs, the fender system can subsequently be professionally restored to its original condition.

## Sustainability & Responsibility

At Fender Innovations, sustainability is not an afterthought — it is an integral part of the way we design, engineer, and manufacture our fender systems. We are committed to developing high-performance solutions with a minimal environmental footprint, combining innovation, durability, and responsible production practices.

Through the use of recyclable materials, energy-efficient manufacturing methods, and advanced engineering principles, we actively contribute to a more sustainable maritime industry without ever compromising on quality, strength, or performance.

We reduce our environmental impact by:

- **Using recyclable, long-life materials**  
Extending product lifespan while reducing raw material consumption and unnecessary waste.
- **Implementing energy-efficient production processes**  
Minimizing energy usage throughout every stage of manufacturing.
- **Reducing material waste through precision engineering**  
Applying advanced production techniques and lean manufacturing principles for maximum efficiency.
- **Designing with purpose and functionality**  
Optimizing protection, weight, and performance with minimal excess material.

Our ambition is clear: to support a cleaner, smarter, and more efficient future for the maritime industry — one advanced fender system at a time.



## SPECIFICATIONS

### Shape

Our fender systems can be manufactured in virtually any shape and length, fully tailored to the vessel's hull design and operational requirements. Using advanced 3D engineering techniques, we create seamless fender systems that precisely follow complex curves, corners, radii, and angles. Virtually any shape is possible, to fit the hull and to achieve optimal in-service performance.

The flexible cross-section allows maximum design freedom, while minimum radiuses for load-bearing surfaces are carefully determined based on the intended application and performance requirements. Our team is pleased to advise on the optimal fender profile for every vessel.

We work with IGES, Rhino, and most commonly used 2D and 3D design files. When digital files are unavailable, we can also manufacture fender systems based on physical templates and on-site measurements.



### Mounting

The preferred installation method is direct bonding to the hull or vessel structure, offering a clean finish, efficient installation, and a highly reliable connection. Alternative mounting solutions may also be engineered to meet specific technical or operational requirements.

### Custom Features

Our fender systems can incorporate a wide range of integrated custom features, including rope eyes, handles, reinforced inserts, stainless steel accents, logos, and light openings.

These integrated solutions not only enhance functionality and aesthetics but also enable the creation of extremely strong connection points with load capacities up to 5 tons.

### Materials

Our fender systems are constructed using a high-performance combination of closed-cell foam cores, advanced reinforcement, and our durable FI topcoat system.

## Core Material

- High-quality foam cores provide excellent impact absorption and damping characteristics
- Closed-cell, cross-linked foam ensures zero water absorption
- Different foam densities can be combined to achieve the desired performance characteristics
- High compressibility for optimal energy absorption
- A wide range of foam densities available from stock for fully customized solutions

## Reinforcement

We carefully select the most suitable technical fabric or reinforcement mesh for each application, including advanced materials such as Aramid and Dyneema®, ensuring maximum durability and performance.

## Topcoat System

- Premium FI 55 or FI59 Polyurea topcoat system
- Adjustable coating thickness depending on the application and operational demands
- Exceptional durability and wear resistance
- Available in smooth or non-skid finishes
- Standard colours include black, battleship grey, and orange
- Custom colours and finishes available upon request

## Temperature Range

Our fender systems are designed to perform reliably in demanding marine environments and are suitable for ambient temperatures ranging from -30°C to +55°C. Extended or specialized temperature ranges can be engineered upon request to meet specific operational requirements.

## Additional Features

- Custom-integrated company logos for a fully personalized appearance
- Seamless integration with composite, aluminium, nylon, and stainless steel constructions
- Supply of custom brackets and mounting points in marine-grade stainless steel (316) or aluminium
- Integration of stainless steel accent lines, light openings, handles, rope eyes, and other bespoke design features
- Tailor-made solutions engineered to complement both the vessel's design and operational profile



MEET THE FENDER INNOVATIONS GROUP

# A strong partnership



## *Fender Innovations B.V.*

specializes in lightweight, flexible, tailor-made fender systems and custom solutions for fast rescue boats, lifeboat tenders, superyacht tenders, and heavy-duty RIBs.



## *Poly Marine Fender Systems B.V.*

develops and produces highly durable, impact-resistant polyurethane fender systems for demanding marine applications such as pilot vessels, ferry's and tug boats, and specialized solutions such as wear plates, friction segments, bollard protection, mooring protection, and rope protection systems.



**Together, we combine innovation, durability, and craftsmanship to deliver high-performance maritime protection solutions without compromise.**





CONTACT & QUOTES

## Find out more

Fender Innovations and PolyMarine Fender Systems can offer a complete solution based on your needs and requirements. Contact us for information.

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