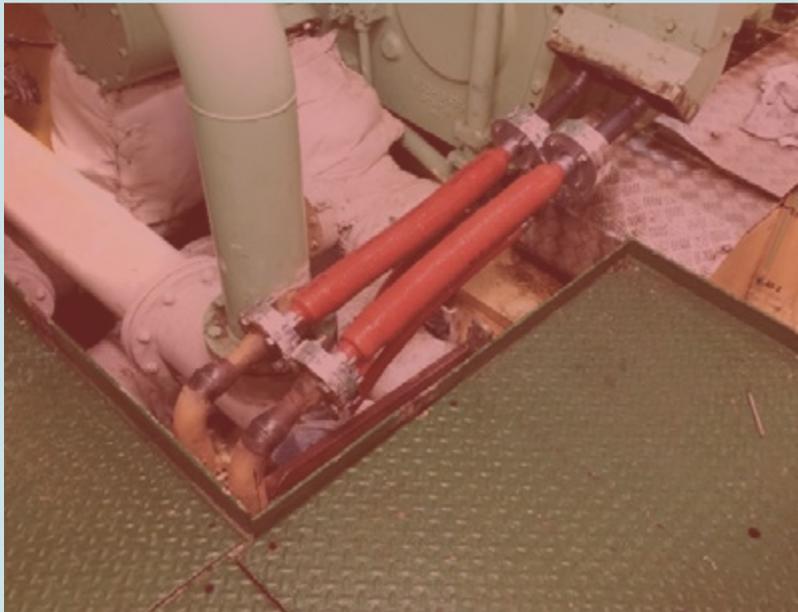
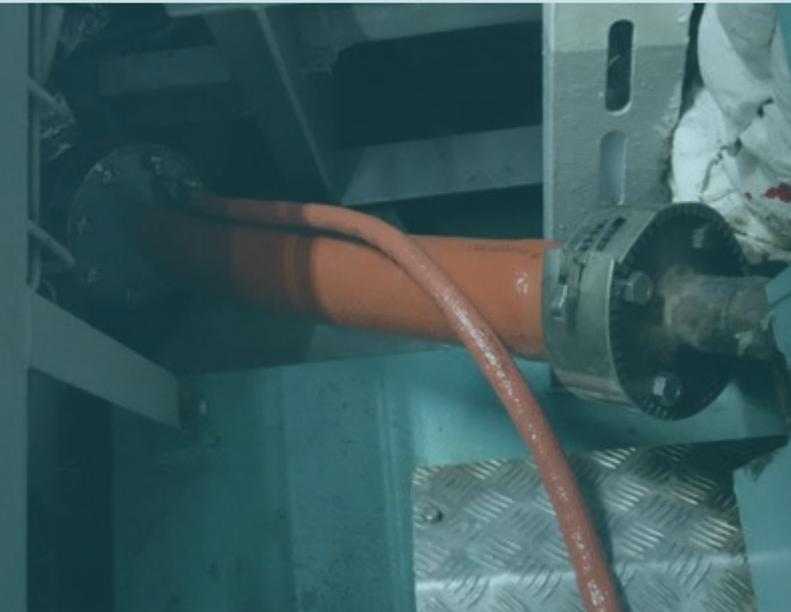
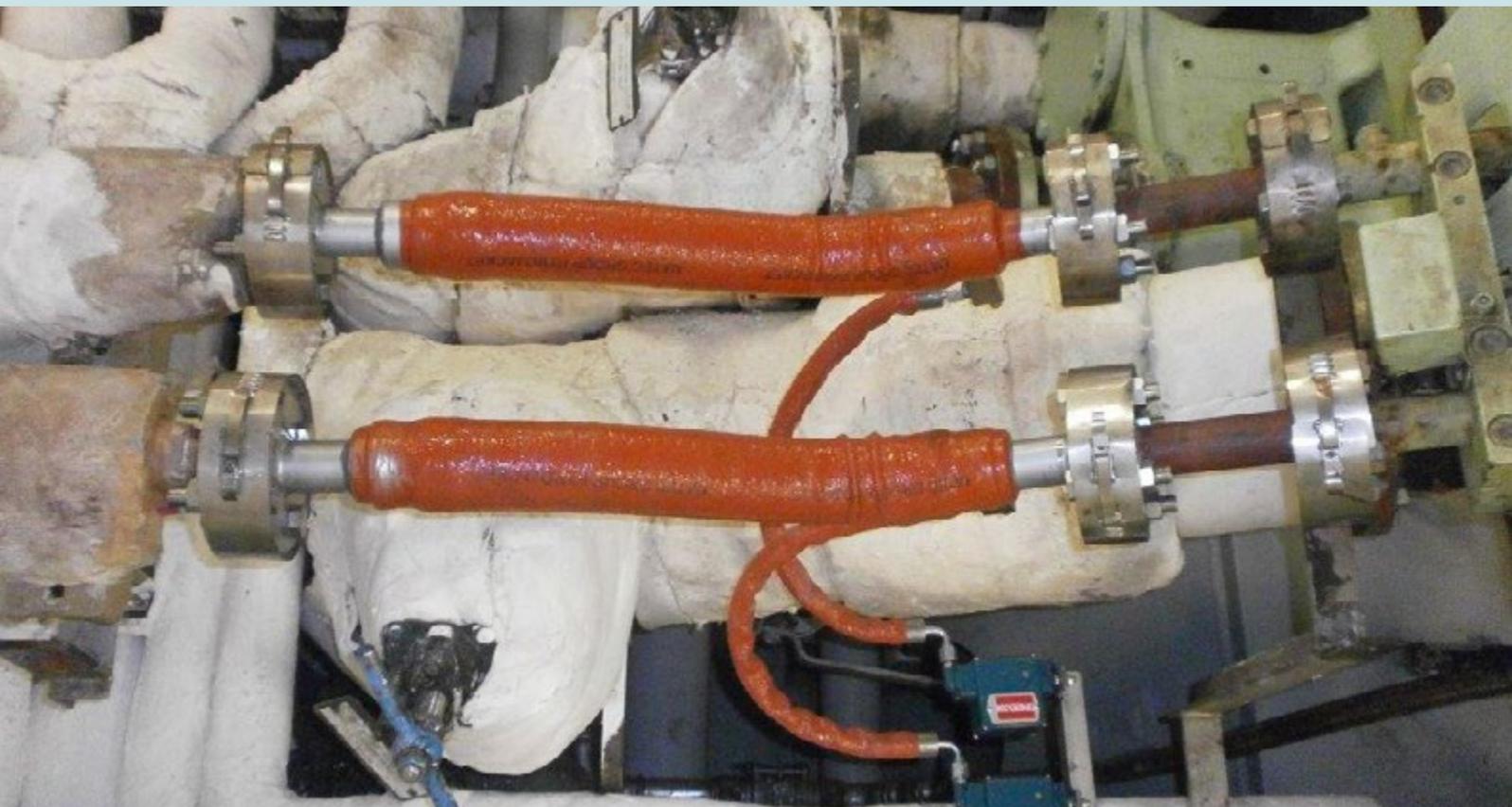




FIRE SAFE FUEL HOSES

INTRODUCING INNOVATION





Maritime fire prevention is vital. A fire on board a vessel can lead to disaster, threatening personal safety or causing the loss of lives. A fire on board can also destroy valuable cargo or cause severe damage to the integral structure of a vessel, resulting in costly replacements or repairs.

Conceived to reduce the risks of fuel oil spray incidents and unexpected fires on board large vessels at sea, our Fire Safe Fuel Hoses are designed to transport hot fuel safely in the engine room and notify crew immediately if there is an issue.

Since the launch of our product in 2013, the company has gone from strength to strength. All of our custom-made products are now manufactured and distributed from Europe.



Meeting IMO Safety Standards

The IMO Safety of Life at Sea (SOLAS) Convention provides the key regulatory framework for fire safety on board ships, and the following safety measures became mandatory SOLAS requirements for all ships from July 2003:

- ✓ Insulation of all high temperature surfaces at risk of flammable fuel oil impingement
- ✓ Jacketed (double) pipes in all high-pressure fuel oil delivery lines
- ✓ Spray shields for any flammable oil lines located above or near potential ignition sources

The multiple class-approved Fire Safe Fuel Hose combines these three safety measures so if the internal layer of the Fire Safe Fuel Hose becomes compromised for any reason, the outer layer of insulation will reduce the risk of fuel leakage until the hose can be replaced.

Gaining Certifications

We have gained certification from several International Association of Classification Societies (IACS) members, including RINA Type Approval and Lloyd's Register General Design Appraisal.

We are also working closely with other class societies to obtain their design approval while we continue to invest in the development of our products.

Embracing an Innovative Design

We enhanced the design of the Fire Safe Fuel Hose with an innovative idea for integrated leakage detection.

Each hose features a built-in leak detection system to detect unexpected loss or gain in pressure, which connects to your vessel's automated warning system. This notifies you of any potentially dangerous leaks as soon as they occur.

Optionally, a visual indication of the condition of the hose can be provided by a manometer or by visual warning lights, giving you ample time to respond to the issue before it escalates.

Custom Made For You

Made from high flexibility stainless steel and covered with an insulating sleeve, each hose is custom-made and we will work with you to ensure it meets your specifications.

We have three standard sizes:

- DN32/DN50
- DN50/DN80
- DN65/DN100

Length 500-700 mm (upon request)

The Voyage So Far

Fire Safe Fuel Hoses Pte Ltd is a Singapore-based company. Owned and managed by the product inventors and patent holders, we are supported by major marine engine manufacturers and work with leading maritime corporations around the globe.



MARCH 2013

The concept for double walled hoses is floated to MariFlex Engineering, an internationally renowned company offering liquid offloading solutions.

We immediately initiate the design process.

SEPTEMBER 2013

Our first hoses are installed on Holland America Line's MS Rotterdam under temporary approval from Lloyd's Register.

The official approval process begins shortly afterwards, as we work closely with Lloyd's Register to complete their stringent design approval.

JANUARY 2014

Holland America Line request that three additional vessels be fitted with Fire Safe Fuel Hoses under temporary approval.

MARCH 2015

After extended prototype testing to ensure the final design of the Fire Safe Fuel Hose is safe at sea, we obtain **Marine Design Appraisal** from Lloyd's Register.

We subsequently equip the entire fleet of Holland America Line cruise ships with our Fire Safe Fuel Hoses.

We don't have to wait long before other cruise lines, including Princess Cruise Lines, Seabourn Cruise and P&O Australia, also request we provide Fire Safe Fuel Hoses for their vessels.

MARCH 2016

We amicably part ways with MariFlex to form Fire Safe Fuel Hoses Pte Ltd, hoping to explore new opportunities for growth in the maritime industry.

In addition, we successfully file a patent application for the innovative design of the Fire Safe Fuel Hose.

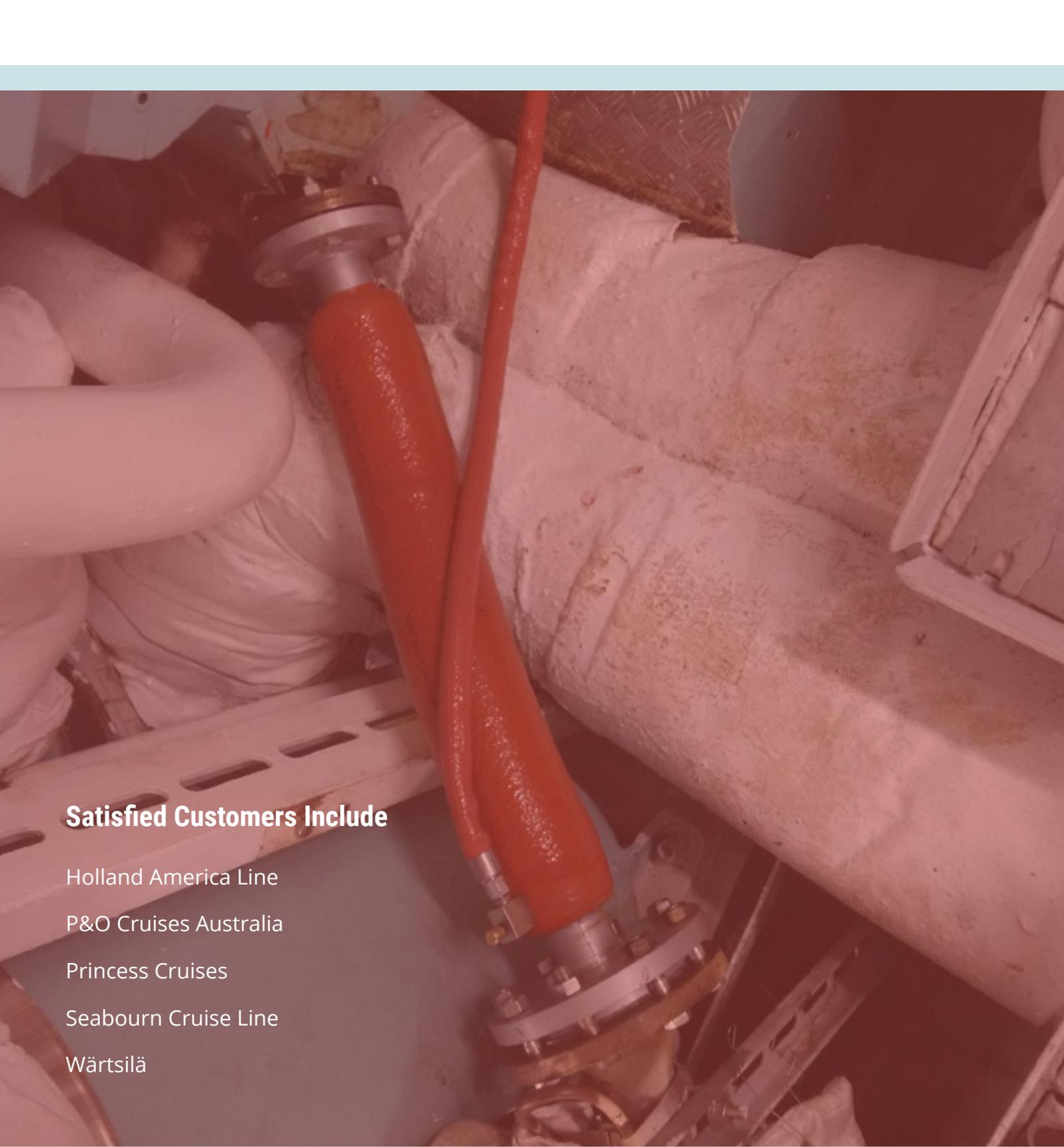
APRIL 2016

Our products are deemed to comply with ISO 10380 requirements and we obtain a **RINA Type Approval certificate**.

THE FUTURE

It is important to look ahead. That's why we are hoping to gain more certifications, developing brand-new innovative solutions that can continually improve the design of the Fire Safe Fuel Hose.

We are also aiming to prepare our product for renewable energy sources, including Liquefied Natural Gas, for an environmentally friendly product range in the future.



Satisfied Customers Include

Holland America Line

P&O Cruises Australia

Princess Cruises

Seabourn Cruise Line

Wärtsilä

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Visit www.fsfhoses.com to read more about our product

