



## Passive Fire Protection

**Passive fire protection differs from active fire protection in that it is designed to contain fire and provide protection for people and equipment.**

Passive fire protection can consist of fire resistant doors or compartments and often is used to provide escape routes for personnel in the event of a fire. Passive fire protection systems are used to minimise fire escalation and buy time so that the fire can be brought under control.

Our knowledge of rubber technology and the properties of rubber has allowed us to manufacture a wide range of passive fire protection solutions.



## Fire Nut

### Fire Nut

**Trelleborg has developed a jet fire protection for bolted connections and flange assemblies to extend service life in the event of a fire. The product resists both jet fire and pool fire and is tailor made to accommodate almost any bolt size.**

The rigid and tough design means that Fire Nut has extremely good resistance to mechanical damage when installed. Installation is a quick and easy process.

Fire nut can be mounted on new bolts or in-situ on bolts that are already installed. The Fire Nut assembly is also waterproof and is resistant to sea water, UV-light, Ozone and most solvents. In addition to its fire protection properties Fire Nut is also considered to have a positive effect in terms of corrosion protection.

Fire Nut is also maintenance free.

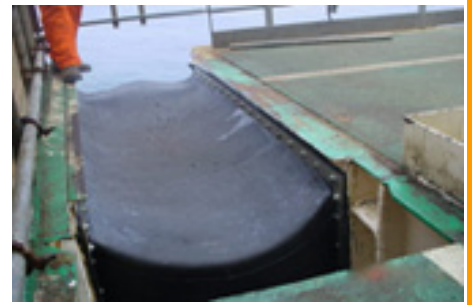


## Escape Tunnel Seals

**The Trelleborg Escape Tunnel and Door Seals offer a flexible connection between rigid metal sections. The purpose of the product is to protect and seal door frames and connecting firesafe escape areas. The product absorbs misalignments, angular deviations and dynamic loads.**

The product is designed in such a way as to satisfy specific customer requirements. Any size or shape can be accommodated to fit customers' installations. Any deformities and irregularities in customers' installations can be absorbed by the flexible nature of the product. Escape Tunnel and Door seals can be easily bolted to a wide variety of structures and are particularly invaluable during modification work.

The seal is watertight, tolerance absorbing and prevents stress and strain transfer within structures. It should remain maintenance free. The seals are also jet fire and hydrocarbon fire resistant (as tested by DNV) can resist blasts up to 2.1bar and are impact resistant. The seals are also resistant to Ozone, UV-light and seawater, they are well suited to use in harsh and cold environments.



## Drain Gully

**Trelleborg's Drain Gully connects deck modules in a flexible way. it takes up movement in all directions and is able to absorb building tolerances between the deck sections. It enables the design of a closed deck which eliminates the need for fireproofing of process deck structures.**

Drain Gully allows spillage from process modules to drain in a cost effective and efficient manner. It is delivered complete with drainage boxes which eliminates the requirement for multiple drainage boxes and an integrated overflow. Installation is straightforward and the product remains maintenance free throughout its operation.

Drain Gully is jet fire and hydrocarbon fire resistant and can resist blasts up to 2.1bar. it is durable and rugged, resistant to hydrocarbon splash, seawater, process liquids and both Ozone and UV light.



## Vikodeck

### Vikodeck Installation

**Vikodeck is a passive fire protection system that is designed to offer deck surfaces protection against both jet fire and hydrocarbon fires in offshore oil and gas environments.**

The system can be tailor made to suit customer requirements. It can be manufactured to any size and shape and as it is a flexible system, it can be adapted and manipulated to suit any surface. Its properties can be adjusted such that it can be specified for various chemical and mechanical conditions.

Vikodeck is a cost effective system which is quick and easy to install - no hot work is required. Its slim design is robust and maintenance free whilst reducing weight.

It is blast and seawater resistant and also resistant to Ozone and UV-light. and offers protection against both jet fire and hydrocarbon fires.



## HPT Pipe Penetration Seals

### HPT Deck Class

**HPT is a fire and blast rated flexible seal. We can offer a range of products for several applications. HPT is made of a rough and durable material designed for offshore environments, connecting modules and maintaining fireproof partitioning.**

The HPT system is offered as a pipe penetration seal. This seal closes the pipe penetration and allows movements of the pipe during operation. The seal can be delivered in a variety of shapes, sizes and fire classes. It is easy to install on bulkheads and decks, single and double sided on exposed and unexposed side. HPT can also be delivered as vessel seal, conductor seal, linear seal, hang off protection, equipment protection and lifeboat tunnel seal.

The product offers many advantages. It is quick and easy to install, cost effective and requires negligible maintenance. It can be tailor made to fit to any size and shape and is resistant to Ozone and UV light. HPT offers protection against jet fire for up to 2 hours and also provides protection against hydrocarbon fire, it is blast resistant up to 1.25 bar and can operate in temperatures from -40°C to 90°C.



## Elastoshield JF-CP

**Trelleborg has developed an electric cable protection to extend service life of cable in a fire. It is able to resist both jet fire and pool fire and is tailor made to suit required function time in a fire.**

Elastoshield JF-CP has been developed for protection of electric cable for firewater pumps and is designed for ultimate performance in critical areas offshore where a jet fire can occur.

It has a robust and rugged design which gives additional protection against mechanical damage.

The product range is up to 300mm<sup>2</sup> and is supplied in lengths up to 60 metres. Longer lengths can be produced on request.

The product can withstand jet fire with 500volts, temperature up to 1300°C as well as environmental factors - seawater, UV, Ozone and most solvents. Its design makes it virtually maintenance free.



## Elastoshield JF-HP

**Trelleborg has developed a flexible hose line for extended service life in a fire.**

**The hose is designed for ultimate performance in critical areas offshore where jet fire can occur and is resistant to both jet fire and pool fire.**

The robust design gives additional protection against mechanical damage and will protect the environment from damage and reduce oil spill in case of hose burst.

It is tailor made to suit varying applications and is available in sizes from 3/8" to 2". Most common threads and styles of coupling can be catered for. The hose is supplied in lengths up to 15 metres although longer lengths can be produced on request.

The hose has a working pressure up to 420bar. It is resistant to jet fire (tested under the supervision of Det Norske Veritas), oil filled, with hydraulic pressure and temperatures up to 1300° C. It is also resistant to sea water, UV, Ozone and most solvents. Elastoshield JF-HP is also maintenance free.





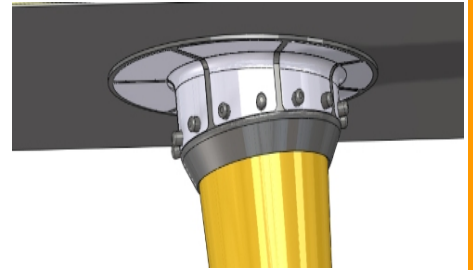
## Flange Protection

**Trelleborg has developed a protection concept for flange assemblies that will extend service life in the event of a fire. The Flange Protection system is able to withstand both jet fire and pool fire and can be tailor made to suit the requirements of any customer.**

The solution has a tough and durable design which is able to resist mechanical damage and is quick and easy to install.

The product can be mounted onto both new and existing flange assemblies as required.

The product benefits from a locking device which makes visual inspection much easier. The assembly is resistant to sea water, UV-light and most solvents. It is also considered to have a positive effect in terms of corrosion protection. The assembly is also maintenance free.



## Flexible Seal

**The Trelleborg flexible seal offers a flexible connection between rigid metal sections. It connects modules and maintains a fireproof partition.**

The flexible seal is capable of handling large displacements, can absorb misalignments, angular deviations and eliminates concentrations of stress. The seal also eliminates the propagation of vibrations and dynamic loads.

The seal can also eliminate deviations caused by the fabrication process. The seal can be made to fit any shape and size to suit customer requirements. It can be easily bolted to all kind of structures and is particularly well suited to use during modifications to metal work.

The seal provides a weather barrier, a fire barrier (being both jet fire and hydrocarbon fire resistant) prevents stress and strain within the metal structure and is blast resistant to 2.1bar.

The seals also resist sea water, snow and ice are resistant to hydrocarbon splash, Ozone and UV-light have an operating range from -40°C to 100°C and are maintenance free.