

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Fire Seal**

with type designation(s)  
**HPT Pipe Penetration Seal - H-60 - Single sided**

Issued to  
**Trelleborg Offshore Norway AS**  
**KROKSTADELVA, Norway**

is found to comply with  
**DNV GL offshore standards**

**Application :**

**Approved for use as steel pipe penetration system in class H-60 bulkheads and decks.**

Issued at **Høvik** on **2017-05-31**

This Certificate is valid until **2022-05-30**.

DNV GL local station: **Oslo Maritime and CAP**

for **DNV GL**

Approval Engineer: **Kathrine Ilje Nerland**

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**Mårten Schei-Nilsson**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.  
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.



## Product description

HPT Pipe Penetration Seal – H-60 – Single sided

Consisting of a steel sleeve symmetrically welded to the bulkhead/deck and a flexible collars "HPT Seal" covering the gap between the steel pipe and the steel sleeve on one side of the bulkhead/deck.  
The length of the sleeve is 300 mm.

The collar "HPT Seal" consists of reinforced rubber and is fixed to the pipe and the sleeve by use of steel bands as follows:

- $\frac{1}{2}''$  (21 mm)  $\leq$  OD pipe  $\leq$  12'' (324 mm): one steel band
- 12'' (324 mm)  $<$  OD pipe  $\leq$  36'' (914mm): two steel bands

Pipes and sleeves have to be insulated on both sides of the bulkhead/deck with 80 mm Firemaster Marine Plus 70 kg/m<sup>3</sup> (or equivalent H-60 insulation) as shown on following drawings:

| Pipe Diameter ( $\varnothing$ )            | Bulkhead           | Deck               |
|--------------------------------------------|--------------------|--------------------|
| $\frac{1}{2}'' \leq \varnothing \leq 36''$ | KRO-001601 Rev. 05 | KRO-001600 Rev. 03 |

## Application/Limitation

Approved for use as steel pipe penetration system in class H-60 bulkheads and decks for steel pipes of minimum OD  $\frac{1}{2}''$  (21 mm) and maximum OD 36'' (914 mm).

Restricted application: Fire against the penetration seal (single sided installation).

This approval refers only to the fire resistance properties of the system.

Each product is to be supplied with its manual for application/installation and maintenance.

## Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, October 2015.

Test report No. 150072-04T3 dated 17 February 2017 from SP Fire Research AS, Trondheim, Norway.  
Test report No. 150072-04T4 dated 20 February 2017 from SP Fire Research AS, Trondheim, Norway.

Trelleborg Offshore drawing Nos. KRO-001601 Rev. 5 and KRO-001600 Rev. 03.

## Tests carried out

Tested according to IMO 2010 FTP Code Part 3 and the hydrocarbon time/temperature curve as described in ISO 834-3.

## Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating, as applicable.

## Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in DNVGL-CP-0338 Section 4.