DNV·GL

Certificate No:
TAF00000MY

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Fire Seal

with type designation(s)
HPT Pipe Penetration Seal - H-0 - Double 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-0 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**

Approval Engineer: **Kathrine Ilje Nerland**

for **DNV GL**

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.

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Product description
"HPT Pipe Penetration seal – H-0 – Double sided",
Consisting of a steel sleeve symmetrically welded to the bulkhead/deck and two flexible collars "HPT Seal" covering the gap between the steel pipe and the steel sleeve fitted on both sides of the bulkhead/deck. The length of the steel sleeve is 300 mm in bulkhead and 200 mm in deck.

The collar "HPT Seal" consists of reinforced rubber and is fixed to the pipe and the sleeve by use of steel bands as follows:
- ½'' (21 mm) $\leq$ OD pipe $\leq$ 12'' (324 mm): one steel band
- 12'' (324 mm) < OD pipe $\leq$ 36'' (914 mm): two steel bands

Application/Limitation
Approved for use as steel pipe penetration system in class H-0 bulkheads and decks for steel pipes of minimum OD ½'' (21 mm) and maximum OD 36'' (914 mm).

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. 150072-04T1 dated 13 February 2017 from SP Fire Research AS, Trondheim, Norway.
Test Report No. 150072-04T2 dated 13 February 2017 from SP Fire Research AS, Trondheim, Norway.
Test Report No. 103070.68-TR1 dated 12 March 2014 from SINTEF NBL, Trondheim, Norway.
Test Report No. 103070.68-TR2 dated 12 March 2014 from SINTEF NBL, Trondheim, Norway.

Tests carried out
Tested according to IMO 2010 FTP Code Part 3 (IMO Res. A.754(18)) 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.