

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Class A and B Penetration**

with type designation(s)

A60-Class deck and bulkhead penetration piece (FTP Code)

Issued to

DONG EUN PRECISION & ENGINEERING CO., LTD.
Gimhae-si, Republic of Korea

is found to comply with

DNV GL rules for classification – Ships**DNV GL offshore standards****DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations****Application :****Approved for use as a single pipe penetration system in Class A-60 steel bulkheads and decks.****This certificate is recognized by Transport Canada.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**Issued at **Høvik** on **2018-11-08**This Certificate is valid until **2023-11-07**.for **DNV GL**DNV GL local station: **Gimhae Station**Approval Engineer: **Thorvald Furuseth**

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.



Job Id: **262.1-029057-1**
Certificate No: **TAF00000ZV**

Product description

"A60-Class deck and bulkhead penetration piece (FTP Code)"

Pipe penetration system composed of fitting body (SUS316L, PT 3/8") symmetrically welded to steel bulkhead and Bite connector (SUS316L, BMC) at each end.

The length of the fitting body (sleeve) is 200 mm.

Bulkhead and deck are to be insulated with "Daehyup spray s" produced by Daehyup Spray Co., nominal density 140 Kg/m³ and (or equivalent A-60 insulation). Reference is made to drawing no. DE170207 and drawing no. DE170208.

The penetration is partly insulated (sleeve and connector shall be covered by insulation).

For further details, see approved drawings and test report listed under Type Approval documentation below.

Application/Limitation

Approved for use as a pipe penetration system in class A-60 steel bulkheads and decks. Other applications are subject to case-by-case approval.

Approved for use in class A-0, A-15 and A-30 when the penetration system is insulated as A-60 and in addition the division is to be insulated with A-60 insulation at least 200 mm around the penetration.

Approved combinations:

Penetration Model	Min/Max steel pipe diameter [mm]	Minimum insulation thickness [mm]	Minimum insulation around penetration [mm]	Min/Max Sleeve diameter [mm]	Max/Min Sleeve wall thickness [mm]	Location/ Usage
Passing model	Ø 8 - 12	100	100	Ø 20 - 25	5.5 - 6	Deck
Passing model	Ø 8 - 12	120	100	Ø 20 - 25	5.5 - 6	Bulkhead
Cutting model	Ø 8 - 12	100	100	Ø 20 - 25	5.5 - 6	Deck
Cutting model	Ø 8 - 12	120	100	Ø 20 - 25	5.5 - 6	Bulkhead

Penetration systems are generally not to be used for penetrating boundaries of tanks.

Watertightness and gastightness is not covered in this certificate.

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

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Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, September 2018.

Test report nos. KOMERI-17T1188, dated 2017-05-17 and KOMERI-17T1189, dated 2017-05-17, both from KOLAS, Busan, Korea.

Drawing nos. DE170208, DE170211-12, DE170211-13, DE170211-14, DE170211-16, DE170211-17 and DE170211-18, all dated 2018-02-17 from maker.

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product shall be marked with the name of the manufacturer, type designation and fire technical rating.

Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)", DNV GL confirms that the product listed in this certificate is in accordance with Transport Canada's requirements.

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 Class Programme DNVGL-CP-0338, Section 4.