Certificate No:
TAF00001R2

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class A and B Penetration

with type designation(s)
A-60 bulkhead and deck penetration piece (150)

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

is found to comply with
DNV statutory interpretations DNV-SI-0364 – SOLAS interpretations, Edition July 2021
DNV rules for classification – Ships
DNV offshore standards

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.

Issued at **Høvik** on **2022-05-16**
This Certificate is valid until **2027-05-15**.
DNV local station: **Gimhae Station**

Approval Engineer: **Marcin Tobiasz**

for **DNV**

Helene David-Andersen
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.

Product description

"A-60 bulkhead and deck penetration piece (150)"
is a single pipe penetration system consisting of a penetration piece (PT 1/4" – 1/2", SUS316L) and a bite connector (BMC, SUS316L) at each end. The penetration piece is welded unsymmetrically to the steel division and comes in the sizes Ø6 – Ø15 mm.

For further details, see drawings listed under Type Approval documentation.

Application/Limitation

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

Class A-0, A-15 and A-30 shall be insulated as class A-60 and in addition the division shall be insulated at least 200 mm around the penetration.

Table 1: Approved single pipe penetration in A-60 steel bulkhead.

Type	Size (OD) [mm]	Pipe material	Pipe diameter (OD) [mm]	Penetration length [mm]	Penetration thickness [mm]	Penetration position	Penetration insulation*
Passing model	28	Stainless steel	15	150	6	Insulated side **	Fully insulated
Cutting model	18	Stainless steel	6	150	5.5	Insulated side **	Fully insulated

* The insulation must be covered up to the fitting body.
** minimum 90 mm of the penetration pipe on insulated side.

Table 2: Approved single pipe penetration in A-60 steel deck.

Type	Size (OD) [mm]	Pipe material	Pipe diameter (OD) [mm]	Penetration length [mm]	Penetration thickness [mm]	Penetration position	Penetration insulation*
Passing model	18 – 28	Stainless steel	6 – 15	150	5.5 – 6	Any **	Fully insulated, min. 100 mm along penetration on underside.
Cutting model	18 – 28	Stainless steel	6 – 15	150	5.5 – 6	Any **	Fully insulated, min. 100 mm along penetration on underside.

* The insulation must be covered up to the fitting body.
** Maximum 90 mm of penetration pipe on the underside.

Each product shall be supplied with its manual for installation and maintenance.

Type Approval documentation

Certification in accordance with Class Programmes DNV-CP-0338, September 2021.

Test report No. KOMERI-0402-21T5177(E) dated 21 January 2022 from KOMERI, Busan, Korea.
Test report No. KOMERI-0402-21T5178(E) dated 25 January 2022 from KOMERI, Busan, Korea.

Drawing No. DE211001-03 dated 1 October 2021 from maker.
Drawing No. DE211001-04 dated 1 October 2021 from maker.
Drawing No. DE211001-21, Cutting model Ø6, dated 1 October 2021 from maker.
Drawing No. DE211001-22, Cutting model Ø8, dated 1 October 2021 from maker.
Drawing No. DE211001-23, Cutting model Ø10, dated 1 October 2021 from maker.
Drawing No. DE211001-24, Cutting model Ø12, dated 1 October 2021 from maker.
Drawing No. DE211001-25, Cutting model Ø15, dated 1 October 2021 from maker.
Drawing No. DE211001-26, Passing model Ø6, dated 1 October 2021 from maker.
Drawing No. DE211001-27, Passing model Ø8, dated 1 October 2021 from maker.
Drawing No. DE211001-28, Passing model Ø10, dated 1 October 2021 from maker.
Drawing No. DE211001-29, Passing model Ø12, dated 1 October 2021 from maker.
Drawing No. DE211001-30, Passing model Ø15, dated 1 October 2021 from maker.

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

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

Transport Canada Approval
Based on the procedures laid down in the Transport Canada Publication entitled “Procedures for Approval of Life-Saving Appliances, Fire Safety Systems, Equipment and Products (TP14612)", DNV confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

Periodical assessment
DNV’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 DNV-CP-0338, Section 4.