Certificate No:
TAF0000111

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class H Penetration

with type designation(s)
Expandable Sleeves with Sealant Type MCT (Multi Cable Transit)

Issued to
HS Inc.
Busan, Korea, Republic of

is found to comply with
DNV offshore standards

Application :

Approved for use as cable penetration system in class H-60 steel deck.

Issued at **Høvik** on **2022-09-21**
This Certificate is valid until **2027-09-20**.
DNV local station: **Gimhae Station**

Approval Engineer: **Tessa Biever**

for **DNV**

Jowita Permoda
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
"Expandable Sleeves with Sealant Type MCT (Multi Cable Transit)",
composed of a steel coaming symmetrically welded to the deck. The steel coaming is filled with 140 mm long sleeves ("AV-810" and "AV-812") and sealed at both ends with 20 mm thick sealant type "AP-910" (manufactured by HS Inc.).

For further details see test report and drawing listed under Type Approval documentation below.

Application/Limitation
Approved for use as cable penetration system in class H-60 steel deck. Other applications are subject for case-by-case approval.

Approved for use in class H-0 when the cable penetration system is insulated as H-60. In addition, the deck is to be insulated with H-60 insulation at least 200 mm around the penetration.

Approved cable penetration in H-60 class deck:

Type	Size [mm]	Max. cable diameter [mm]	Filling rate [%] 1)	Min. coaming length [mm]	Min. coaming thickness [mm]	Coaming position	Coaming insulation
Rectangular	180 x 120 – 654 x 366	65	15.7 – 34.8	180	8	Symmetrical	Partially insulated on the underside

1) Min. distance between cables and cables and sleeve are 6 mm.

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

Type Approval documentation
Certification in accordance with Class Program DNV-CP-0338, September 2021.

Test report No. KOMERI-0402-16T0992 dated 29 September 2016 from KOMERI, Busan, Korea.

Drawing No. HS-16-10-D Rev.0 (5 sheets) dated 18 August 2016 from manufacturer.

Tests carried out
Tested according to IMO 2010 FTP Code Part 3 and in compliance with the hydrocarbon time-temperature curve specified 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.

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 Program DNV-CP-0338, Section 4.