



Certificate no.:
TAF00001Z5

TYPE APPROVAL CERTIFICATE

This is to certify:

that the Class A and B Penetration

with type designation(s)

HK-C pipe penetration system

issued to

Shanghai Huoke New Material Co., Ltd.
Shanghai, China

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 pipe penetration system in A-60 class 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 **2025-01-09**

This Certificate is valid until **2030-01-08**.

for **DNV**

DNV local unit: **Shanghai**

Approval Engineer: **Marcin Tobiasz**

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 USD 300 000.

Product description

“HK-C pipe penetration system”

penetration system composed of carbon steel flange with thickness of 4 mm spot welded to the division on one side, filled with intumescent firestop material (main components: thermoplastic elastomer, rubber coupling agent, Halogen-free expansion agent, swelling carbonizer). HK-3000 type marine firestop sealing adhesive shall be used to ensure water and air tightness.

Application/Limitation

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

Approved for use in class 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.

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

Type	Pipe material	Pipe diameter (OD) [mm]	Penetration size (OD) [mm]	Penetration length [mm]	Flange thickness [mm]	Penetration position	Penetration insulation
HK-C/A60/C	PE100	20 – 225	36 – 257	80 – 100	4	Unexposed	Fully insulated
	PE-RT	20 – 160	36 – 191	80	4	Unexposed	Fully insulated
	PVC-U	20 – 160	36 – 191	80	4	Unexposed	Fully insulated
	PP-R	20 – 160	36 – 191	80	4	Unexposed	Fully insulated
	PP-FR	48	66	80	4	Unexposed	Fully insulated

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

Type	Pipe material	Pipe diameter (OD) [mm]	Penetration size (OD) [mm]	Penetration length [mm]	Flange thickness [mm]	Penetration position	Penetration insulation
HK-C/A60/J	PE100	20 – 225	36 – 257	80 – 100	4	Underside	Fully insulated
	PE-RT	20 – 160	36 – 191	80	4	Underside	Fully insulated
	PVC-U	20 – 160	36 – 191	80	4	Underside	Fully insulated
	PP-R	20 – 160	36 – 191	80	4	Underside	Fully insulated
	PP-FR	48	66	80	4	Underside	Fully insulated

Approved for water tightness up to a design pressure of 1.67 bar.

Approved for air tightness up to a design pressure of 0.67 bar.

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

Type Approval documentation

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

Test report No. FT24207 dated 17 June 2024 from FEFTC, Shanghai, China.

Test report No. FT24294 dated 6 August 2024 from FEFTC, Shanghai, China.

Test report No. WT/AT-2024-0701 dated 10 September 2024 from manufacturer.

Drawing No. HK-JQTD-C-2301, Version A/0, dated 26 December 2023 from manufacturer.

Drawing No. HK-JDT20240812, version A/1, dated 10 January 2025, from manufacturer.

Tests carried out

Tested in accordance with IMO 2010 FTPC part 3.

Pressure tests with water and air according to Class Programme DNV-CP-0165.

Marking of product

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



Job ID: **262.1-041521-1**
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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 DNV-CP-0338 Section 4.

Manufactured by:

Shanghai Huoke New Material Co., Ltd., Shanghai, China.