

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAF00001D3
Revision No:
1

This is to certify:

that the **Class A and B Penetration**

with type designation(s)

"ADBUW", "ACBUW", "ADCW" and "ACWC"

issued to

Hy-Lok Corporation
Busan, Republic of Korea

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 class steel bulkheads and decks.

This certificate is recognized by Transport Canada.

Products approved by this certificate is accepted for installation on all vessels classed by DNV.

Issued at **Høvik** on **2025-03-06**

This Certificate is valid until **2030-03-05**.

DNV local unit: **Busan, CMC Korea**

Approval Engineer: **Marcin Tobiasz**

for **DNV**



Digitally Signed By:

Jowita Permoda

Location: DNV Høvik, Norway

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

"ADBUW", "ACBUW", "ADCW" and "ACWC", are pipe penetration system consisting of a bulkhead union ("ADBUW" and "ACBUW") or insert weld connectors ("ADCW" and "ACWC") welded to a steel pipe penetrating a structural core.

"ADBUW" comes in two versions (L series and S series). "ACBUW" comes in two versions (connects fractional tubes or metric tubes).

Application/Limitation

Approved for use as a pipe penetration system in class A-0 and A-60 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: A-0 class steel bulkhead

Union type	Union size [mm]	Min. tube/pipe length [mm]	Union body/ Welded tube/ Welded pipe OD [mm]	Union body/ Welded tube/ Welded pipe thickness [mm]	Tube/pipe position	Insulation
ADBUW	6 – 38	120 – 139	18 - 60	7 - 14	Symmetrically welded to bulkhead	None
ACBUW	6 – 38	120 – 146	12 - 60	3.6 – 13.2	Symmetrically welded to bulkhead	None

Table 2: A-60 class steel bulkhead

Union type	Union size [mm]	Min. tube/pipe length [mm]	Union body/ Welded tube/ Welded pipe OD [mm]	Union body/ Welded tube/ Welded pipe thickness [mm]	Tube/pipe position	Insulation
ADBUW	6 - 38	550	18 – 60	7 – 14	Fitted with at least 450 mm on insulated side	Fully insulated plus 450 mm along pipe
ACBUW	6 – 38	550	12 - 60	3.6 – 13.2	Fitted with at least 450 mm on insulated side	Fully insulated plus 450 mm along pipe
ADCW	6 – 15	500	21,3	3.7	Fitted with at least 450 mm on insulated side	Fully insulated plus 450 mm along pipe
ACWC	6 – 15	500	21,3	3.7	Fitted with at least 450 mm on insulated side	Fully insulated plus 450 mm along pipe

Table 3: A-0 class steel deck

Union type	Union size [mm]	Min. tube/pipe length [mm]	Union body/ Welded tube/ Welded pipe OD [mm]	Union body/ Welded tube/ Welded pipe thickness [mm]	Tube/pipe position	Insulation
ADBUW	6 - 38	120 – 139	18 - 60	7 - 14	Symmetrically welded to deck	None
ACBUW	6 – 38	120 – 146	12 - 60	3.6 – 13.2	Symmetrically welded to deck	None

Table 4: A-60 class steel deck

Union type	Union size [mm]	Min. tube/pipe length [mm]	Union body/ Welded tube/ Welded pipe OD [mm]	Union body/ Welded tube/ Welded pipe thickness [mm]	Tube/pipe position	Insulation
ADBUW	6 - 38	550	18 - 60	7 - 14	Fitted with at least 450 mm on insulated side	Fully insulated plus 450 mm along pipe on the underside
ACBUW	6 - 38	550	12 - 60	3.6 - 13.2	Fitted with at least 450 mm on insulated side	Fully insulated plus 450 mm along pipe on the underside
ADCW	6 - 15	500	21,3	3.7	Fitted with at least 450 mm on insulated side	Fully insulated plus 450 mm along pipe on the underside
ACWC	6 - 15	500	21,3	3.7	Fitted with at least 450 mm on insulated side	Fully insulated plus 450 mm along pipe on the underside

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

Type Approval documentation

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

Test report No. KOMERI-0402-17T2147 dated 14 March 2018 from KOMERI, Busan, Korea.
 Test report No. KOMERI-0402-17T2148 dated 14 March 2018 from KOMERI, Busan, Korea.
 Test report No. KOMERI-0402-17T2149 dated 14 March 2018 from KOMERI, Busan, Korea.
 Test report No. KOMERI-0402-17T2150 dated 13 March 2018 from KOMERI, Busan, Korea.

Drawing No. 2018E04D01-5 Rev.0, dated 10 May 2018 from manufacturer.

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 DNV-CP-0338 Section 4.

Manufactured by:

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 Korea