Certificate No:
TAF00001TY

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class A Door

with type designation(s)
Class A-0 Door Type: MIRIM-A0-1

Issued to
Mirim Technology Co.
Busan, Korea, Republic of

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

Application :

Approved for installation in steel bulkheads of class A-0.

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 **2023-11-30**
This Certificate is valid until **2028-11-29**.
DNV local unit: **Gimhae Station**

Approval Engineer: **Timo Linn**

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

"Class A-0 Door Type: MIRIM-A0-1" is a single-leaf fire door composed of:

- 0.6 mm thick steel plate,
- Insulation (Mineral wool): BUCKSAN CO., LTD. (Nominal density: 140 Kg/m³ and nominal organic content of (1 ~ 5) %, thickness: 35 mm)
- 0.6 mm thick steel plate.

The door leaf is reinforced internally with two horizontal steel stiffeners and a double plating at the top (thickness 1.5 mm).

The insulation material inside the door leaf is fixed by an adhesive Type: OCUA-970SNF, manufactured by DAEHAN POLYMER CO., LTD

Total door leaf thickness is 38 mm.

The four-sided door frame is made from 1.5 mm thick steel plates and is fastened to the bulkhead with screws (M5 bolt), spaced maximum 300 mm apart.

The door leaf is attached to the door frame by 4 hinges.

The door leaf may be fitted with:

- Observation window (type:SG-FS2R2) constructed from 19 mm fireproof glass, consisting of 6 mm toughened glass, 7 mm fireproof solution and 6 mm toughened glass, (manufactured by SAMGONG CO., LTD).
- Fireproof door lock type: HL-5600, manufactured by HO-SUNG IRE TECH, installed at the door leaf, located 1100 mm from the bottom.
- A self-closing hose port with approx. 150 mm square clear opening.

For further details refer to the test reports listed under Type Examination documentation below.

Application/Limitation

The door is approved for installation in steel bulkheads of class A-0. Installation of the door in bulkheads made of other materials (aluminium, FRP, etc.) are subject to case-by-case approval.

Any adhesive used, other than the one used during testing, has to be tested for low flame spread characteristics according to IMO 2010 FTP Code Part 5.

Maximum clear opening size (as tested):	1000 mm x 2100 mm (width x height).
Maximum clear view opening size of window:	400 mm x 500 mm (width x height).

External windows to comply with DNV rules or a recognized national or international standard (Ref. DNV Rules for classification: Ships, Pt. 3, Ch. 12, Sec. 6 [1.1.3]).

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

Note that this is a fire safety certificate which only covers fire technical properties (i.e. not to cover strength evaluations related to watertightness, weathertightness, etc.).

Type Approval documentation

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

Test report no. KOMERI-0402-22T1954(E) dated 12th of May 2023 issued by Korea Marine Equipment Research Institute, Busan, Korea.

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product 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 (TP 14612)", DNV confirms that the products listed in this certificate 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.