



Certificate No:
TAF00001GD

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class A Door

with type designation(s)
A60-KL-10

Issued to

KwangLim Marine Tech Co., Ltd.
Busan, Republic of Korea

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 use as an integrated part of fire retarding division of class A-60.

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 **2021-10-07**

This Certificate is valid until **2026-10-06**.

for **DNV**

DNV local station: **Gimhae Station**

Approval Engineer: **Karolina Kuśmider**

.....
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.



Form code: TA 251

Revision: 2021-03

www.dnv.com

Page 1 of 3

Product description

"A60-KL-10"

is a single leaf type steel door in a steel frame. On the unexposed side the door leaf is composed of an 8 mm thick steel plate and 3 layers of 3 mm thick graphite plate around 2 layers of an insulating core of 110 kg/m³ density mineral wool from KCC Corporation. Each layer is 25 mm thick. The door is reinforced with a 3 mm thick insulation cover plate. The door leaf is fitted with a Ø16 mm stainless steel latch assembly, a Ø12 mm lifting eye and is attached to the frame with 4 hinges.

The door leaf is fitted with 25 x 4 mm fire door seal and 20 x 40 mm fire retardant packing and is stiffened with six horizontal and one vertical steel L-profiles (carlings) with dimensions 25 x 25 x 5 mm (W x B x T).

The door leaf includes 7 dog assemblies together with 5 clip rods and a Ø300 mm thick scuttle from Jung Gong in the upper half of the door. The scuttle is insulated with ceramic wool (manufactured by KCC) and consists of 27 mm thick fire resistant Contraflam CF A60-N2 glass which is composed of a few layers of tempered glass (5 mm + 4 mm + 4 mm + 5 mm + 10 mm). The scuttle is fitted with 21 mm packings and is fixed with 8 pieces of M16 bolts.

The frame profile is constructed from 9 mm steel. The door frame is welded to the steel bulkhead.

Total thickness of door leaf: 70 mm.

The door can be opened with a handle, Ø22 mm.

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

Application/Limitation

Approved for installation in steel bulkheads of class A-60. Installation of the door in bulkheads made of other materials (aluminium, FRP, etc.) is subject to case-by-case approval.

Maximum door leaf size: 1265 mm x 2265 mm (W x H)
Maximum clear door opening: 1200 mm x 2200 mm (W x H)

External side scuttles 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]).

A fire door of marginally larger dimensions than a fire-tested fire door may be individually assessed and accepted by Flag Administration (or Recognized Organization acting on its behalf) for a specific project with the same classification, provided documented compliance with IMO MSC.1/Circ.1319.

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.).

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

Type Approval documentation

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

Test Report No. KOMERI-0402-20T3339(E) dated 06 November 2020 from Korea Marine Equipment Research Institute, Busan, Korea.

Drawing No. KL-WT-A60-011 dated 06 August 2020 from the manufacturer.

Tests carried out

Tested according to IMO 2010 FTP Code Part 3.

The door has been successfully tested for extended test period of 68 minutes.

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 (TP14612)", DNV confirms that the product listed in this certificate is in accordance with Transport Canada's requirements.



Job Id: **262.1-034451-1**
Certificate No: **TAF00001GD**

Periodical assessment

DNV's surveyor is to be given a 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 the procedure described in the Class Programme DNV-CP-0338, Section 4.