



Certificate no.:
TAF00001ZJ

TYPE APPROVAL CERTIFICATE

This is to certify:

that the **Class A Door**

with type designation(s)
ES-A60BPD A60 Class Door

issued to

E.STech Marine Co.
Busan, Republic of Korea

is found to comply with

DNV rules for classification – Ships
DNV offshore standards
DNV statutory interpretations DNV-SI-0364 – SOLAS interpretations, Edition July 2021

Application:

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.

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

This certificate is recognized by Transport Canada.

Issued at **Høvik** on **2025-03-05**

This Certificate is valid until **2030-03-04**.

for **DNV**

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

Approval Engineer: **Marta Kropiwnicka**

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

“ES-A60BPD A60 Class Door”

Is a single leaf hinged door composed of two layers of ceramic blankets type Firemaster marine plus blanket (density 70 kg/m³, manufactured by Thermal Ceramics UK) with thickness 25 mm and 12,5 mm thick ceramic hard board in the middle (density 300 kg/m³, manufactured by KCC Corporation). The outer layer on both sides of the door leaf is covered with 1.9 mm thick stiffened steel sheets. The insulation is glued to the steel sheets with adhesive. The door leaf is fixed to the door frame by three hinges.

The door leaf is connected to four-sided frame made by 4 mm thick stainless-steel plate and either welded or bolted (M12 bolts, spaced maximum 300 mm apart) to the bulkhead. When bolted, a seal of type EPDM 5 mm is fitted between frame and bulkhead. Insulation rope gaskets of type Fiberglass Ø23 mm is fixed by means of adhesive along the perimeter of the door leaf.

The door leaf may incorporate window in the upper half of the door, manufactured by JEONGAM Safety Glass, thickness 27 mm (composed of 5mm tempered glass + 6mm fireproof liquid + 5mm tempered glass + 6mm fireproof liquid + 5mm tempered glass).

Total door leaf thickness is 64 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.) are subject to case-by-case approval.

Maximum door leaf size:	1070 mm x 2270 mm (W x H)
Maximum clear door opening:	1000 mm x 2200 mm (W x H)
Maximum clear opening of window:	400 mm x 600 mm (W x H)

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.).

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.

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]).

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.

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

Type Approval documentation

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

Test report No. KOMERI-0402-24T1805(E)-A dated 20 November 2024 from KOMERI, Busan, Korea.

Drawing No. ES-A60BPD-2406 dated 18 October 2024 from 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/s listed in this certificate is/are in accordance with Transport Canada's requirements.



Job ID: **262.1-043175-1**
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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 Class Program DNV-CP-0338, Section 4.

Manufactured by:

Thermal Ceramics UK Ltd. Tebay Road, Bromborough, Wirral, CH62 3PH, United Kingdom.

KCC Corporation Co., Ltd. 344 Sapyeong-daero, Seocho-gu, Seoul, 06608, Republic of Korea.

JEONGAM Safety Glass Co., Ltd. 48 Noksansandan 407-ro, Gangseo-gu, Busan, 46755, Republic of Korea.