

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00008FA

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV AS under the authority of the Government of Norway.

This is to certify:

That the 'A' and 'B' class fire proof windows and side scuttles

with type designation(s)

A60 Class Fireproof Windows Model: SG-FS2R1A-A60

Issued to

Samgong Co., Ltd.
Busan, Korea, Republic of

is found to comply with the requirements in the following Regulations/Standards:

Regulation (EU) 2023/1667,

item No. MED/3.25. SOLAS 74 as amended, Regulation II-2/9, IMO MSC/Circ.1120 and IMO 2010 FTP Code, IGC Code 3

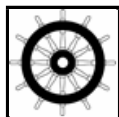
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2029-03-06**.

Issued at **Høvik** on **2024-03-07**

DNV local unit:
Gimhae Station

Approval Engineer:
Timo Linn



Notified Body
No.: **0575**

for **DNV AS**

Mydlak-Röder, Christine
Head of Notified Body



The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

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

"Window type SG-FS2R1A-A60"

Is a rectangular multilayer A-60 fire window constructed of window frame, multilayer window pane, press plate, insulation material and seal material:

The multilayer A-60 fire window has a total thickness of 60mm. The window is constructed from exposed side of 19mm thick pressure glass manufactured by JEONG-AM SAFETY GLASS CO and fire-resistant glass type FS2R-A60 total thickness of 29mm composed of three layers of 5mm thick toughened glass with two 7mm thick hydrogel intumescent interlayer in between manufactured by SAMGONG CO., LTD. A 12mm air gap is constructed between the pressure glass and the fire resistance glass.

Window dimensions:

- Main frame: Nominal thickness: 9mm
- Base frame: Nominal thickness: 6mm
- Glass stopper: Nominal thickness: 6mm
- Glass frame: Nominal thickness: 4.5mm
- Glass keeper: Nominal thickness: 5mm
- Glass keeper stopper: Nominal thickness: 8mm

The window frame composed of steel main frame, is welded to the base frame and bolted to the glass frame with M10 bolts with maximum pitch 150mm. The glass keeper is screwed to the glass frame with M6 screws.

Insulation:

- Firemaster marine plus blanket: THERMAL CERAMICS UK LTD(Nominal density: 128kg/m³, nominal organic content of less than 1% and nominal thickness: 25mm)
- Kerafix 2000: ROLF KUHN GMBH (Nominal density: 170kg/m³, nominal organic content of less than 1% and nominal thickness: 5 mm)

Setting block: KWANG JIN CORP. (Model: L-14Z, LUMIBOARD)

Gasket: HANCHANG SPECIAL PRECISION RUBBER (Model: AFGR-65)

Sealing: KIILTO OY (Model: Kiilto masa)

Adhesive tape: DAEKYUNG CHEMICAL INC. (Model: DKGF001D Glass)

For further details, see Type Examination documentation below.

Application/Limitation

The window is approved for use in a steel bulkheads of class A-60. Other applications are subject to case-by-case approval.

Maximum size of exposed fire technical glazing unit: 2100 x 1500mm (W x H)

Fire against uninsulated steel bulkhead side for use on tankers (fire from outside).

Restricted application: Fire against 19mm thick pressure glass.

The window has only been evaluated with respect to fire technical properties (e.g. strength requirements have not been considered). Arrangement and location of any window is subject to approval from relevant authority in each case.

Hose Stream test was carried out with satisfactory results according to IMO 2010 FTP Code part 3 Appendix A.I.5.

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

Type Examination documentation

Test report no. KOMERI-0402-23T3129(E)-B dated 23 February 2024 (initial issue 09 September 2024) from "KOMERI" Korea Marine Equipment Research Institute.

Drawings no. SG-FS2R1A-BH Rev. 2 dated 04 October 2024 and SG-FS2R1A-A60 Rev.2 dated 23. February 2024 from manufacturer.

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product is to be marked with name and address of manufacturer, type designation, fire technical rating, the MED Mark of Conformity (see first page).