DNV·GL

Certificate No:
MEDB00003DX

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 GL AS under the authority of the Government of Norway.

This is to certify:

That the Windows and side scuttles

with type designation(s)
Window type SG-FS2R1-A60

Issued to
Samgong Co., Ltd.
Busan 11, Korea

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306,**
item No. MED/3.25. SOLAS 74 as amended, Regulation II-2/9, IMO MSC/Circ.1120 and IMO 2010 FTP Code

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

This Certificate is valid until **2023-01-23**.

Issued at **Høvik** on **2018-01-24**

DNV GL local station:
Gimhae Station

Approval Engineer:
Piotr Orzechowski

Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
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 GL 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

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Product description

"Window type SG-FS2R1-A60"
Is a rectangular window constructed of a 12 mm thick pressure glass (on exposed side) from Jeong-AM Safety Glass Co. Ltd. and 29 mm thick fire resistance glass type FS2R-A60 from Samgong co., Ltd. The fire resistance glass composed of three layers of 5 mm thick toughened glass with 7 mm thick hydrogel intumescent interlayer in between. The 12 mm air gap is constructed between the safety glass and the fire resistance glass.
The fire resistance glass is insulated with Cerakwool 1300 with nominal density of 130 kg/m^3 (manufactured by KCC Corporation) and Kerafix 2000 with nominal density of 150 kg/m^3 (manufactured by Rolf Kuhn GmbH). The pressure glass is sealed with synthetic rubber AFCR-65 (manufactured by Hanchang).

The window frame composed of steel main frame, with dimensions of 65 x 9 mm (H x T) welded to the base frame, with dimensions of 50 x 6 mm (H x T) and bolted to the 5.5 mm thick glass frame with M10 bolts with maximum pitch 150 mm. The glass keeper, with dimensions of 29 x 5 mm (H x T) is screwed to the glass frame with M6 screws.

The main frame is fully welded to the bulkhead.

Total window thickness is 53 mm.

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: 1800 x 1300 mm (W x H).

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

Restricted application: fire against 12 mm 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-0402-17T3209 dated 22 November 2017 from "KOMERI" Korea Marine Equipment Research Institute.

Drawings no. SGFS2TW-R1A60-03A Rev. 0 dated 11 August 2017 and SGFS2TW-R1A60-01 Rev. 0 dated 11 August 2017 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).