

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED). This Certificate is issued by DNV GL SE based on the notification of the Federal Maritime and Hydrographic Agency of Germany.

This is to certify:

That the Windows and side scuttles

with type designation(s)
Pyramare FR3

Issued to

Brombach + Gess GmbH & Co. KG
Balingen, Baden-Württemberg, Germany

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2018/773**,
item No. MED/3.25. SOLAS 74 as amended, Regulation II-2/9, IMO MSC/Circ.1120 and IMO 2010 FTP Code

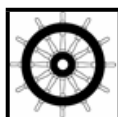
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-03-19**.

Issued at **Hamburg** on **2019-03-20**

DNV GL local station:
Augsburg

Approval Engineer:
Timo Linn



Notified Body
No.: **0098**

for **DNV GL SE**

Gerhard Aulbert
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 SE 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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



Product description

"Pyramare FR3"

Is a rectangular multilayer A-60 fire window system integrated and adapted with a frame construction in the structural core (steel bulkhead), consisting of multilayer window panes, insulation material and seal material. The steel profiles are welded to the bulkhead. Window frame has to be insulated.

The glazing unit consists of an A0-glass package type "Hero-fire s A0-DGU" manufactured by Hero-fire GmbH, which is bonded and sealed to the steel bulkhead from the exposed side.

Each window pane is constructed as follows (from the inside to the outside):

- Single-pane safety glass ESG (6mm),
- Fire protection gel (6 mm),
- Single-pane safety glass ESG (6 mm),
- Air gap (12 mm),
- Single-pane safety glass ESG (≥ 10 mm).

The minimum window pane thickness is 40 mm.

Further details (assembly, bolting, insulation, sealing materials, spaced etc.) of the construction are given in the appendices 1.1 to 1.6 and the description of the assembly of the test report.

Insulation

A system of the company "Thermal Ceramics UK Ltd." is used to insulate the steel bulkhead and the window construction.

"FireMaster Marine Plus Blanket" (density: 70 kg/m³) in a thickness of 50 mm with a topping of aluminum. The insulation is mounted to the steel-shell by pins of $\varnothing 3$ mm, 65 mm length and spring washers of $\varnothing 35$ mm. The distance between the pins was ≤ 240 mm.

According to the provisions of the 2010 FTP Code Part 3 Appendix 1, Section 3.5.

The following sealing material and adhesives are used in the construction:

- "Sikaseal WS 605" provided by Sika Deutschland GmbH,
- "Sikaflex 296" provided by Sika Deutschland GmbH,
- "Kerafix 2000" provided by Rolf Kuhn GmbH and
- "Flammi 12" provided by Rolf Kuhn GmbH.

For further details, see also Type Examination documentation below.

Application/Limitation

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

Restricted application: fire against fireproof glass (from the inside).

Maximum size of each exposed fire technical glazing unit: 1440 x 2340 mm (W x H)

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.

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

Type Examination documentation

Test report no. DMT-D0-53-102 dated 17 December 2018 from DMT GmbH & Co. KG, Dortmund, Germany.



Job Id: **344.1-009084-1**
Certificate No: **MEDB000052G**

Tests carried out

Tested according to IMO Res. MSC.307(88) – 2010 FTP Code Annex 1, 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).