

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Class A Bulkhead**with type designation(s)
A-60 Class Bulkhead (either side)-1Issued to
Unifrax(Suzhou) Co., Ltd.
Suzhou, Chinais found to comply with
DNV GL offshore standards
DNV GL rules for classification – Ships
DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations**Application :****Approved for use as a vertical fire retarding division of class A-60.****General application: Fire hazard from either side.****This certificate is recognized by Transport Canada.****Product approved by this certificate is accepted for installation on all vessels classed by DNV GL.**This Certificate is valid until **2021-11-21**.Issued at **Høvik** on **2016-11-22**DNV GL local station: **Shanghai CMC**Approval Engineer: **Tomasz Werchowicz**for **DNV GL**

Petter Langnes
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.

Job Id: **262.1-024348-1**
Certificate No: **TAF00000H1**

Product description

"A-60 Class Bulkhead (either side)-1"

is composed of a structural steel bulkhead insulated with 55 mm thick "FyreWrap® Marine Blanket" mineral wool with nominal density of 64 kg/m³ manufactured by Unifrax (Suzhou) Co., Ltd. between/in stiffeners and 25 mm thick the same insulation around the stiffeners.

The insulation is fixed to the bulkhead by means of steel pins ø 3 mm welded to the bulkhead and steel washers ø 38 mm.

Pins are to be installed with rectangular pattern and nominal spacing of 315 x 218 mm between pins located between stiffeners. Maximum spacing between pins located around the stiffener is 315 x 164 mm and the maximum distance between joint (blankets edges) and the pins is 50 mm.

This product can be manufactured at:

- Unifrax(Suzhou) Co., Ltd. – address: No. 51 Shiyang Road, New District, Suzhou City 215151, Jiangsu Province, China
- Unifrax UK – address: Mill Lane, Rainford, St.Helens, Merseyside, WA118LP, United Kingdom
- Unifrax France – address: 17 Rue Antoine Durafour, BP2, 42420 Lorette, France
- Unifrax India – address: 99 k Stone Ahmedabad Surendrangar Hwy Lakhtar, Dist. Surendrangar, 382 775 Gujarat, India
- Unifrax Brasil Ltda – address: Avenida Independencia, 7033 Bairro Sao Matheus Vinhedo, SP13280-000, Brazil
- Unifrax Inc LLC (New Carlisle) – address: 54401 Smilax Road, New Carlisle, Indiana 46552, United States of America

For further details see approved drawings listed under Type Approval documentation below.

Application/Limitation

Approved for use as a vertical fire retarding division of class A-60.

General application: Fire hazard from either side.

Any surface materials used have to be approved for smoke and toxicity and low flame-spread characteristics (IMO 2010 FTP Code parts 2 and 5) when required according to relevant rules.

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

Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, October 2015.

Fire test report No. FT 16183 dated 26th May 2016, from Far East Fire Testing Centre, China
Drawing from the manufacturer No. FP-14003 - Edition A

Tests carried out

Tested according to IMO 2010 FTP Code part 3.

Marking of product

The product or packing 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 "Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)", DNV GL confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.



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Periodical assessment

DNV GL'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 Programme DNVGL-CP-0338, Section 4.