

**TYPE APPROVAL CERTIFICATE****This is to certify:****That the Class A Bulkhead**

with type designation(s)

**A-60 Steel Bulkhead - FireMaster XLS Blanket 60 mm x 64 kg/m<sup>3</sup>**

Issued to

**Thermal Ceramics UK Ltd  
WIRRAL MERSEYSIDE, United Kingdom**

is found to comply with

**Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended  
DNV GL rules for classification – Ships  
DNV GL offshore standards****Application :****Approved for use as fire retarding division of class A-60.  
General application: Fire hazard from either side****This certificate is recognized by Transport Canada****Product(s) approved by this certificate is/are accepted for installation on all vessels classed  
by DNV GL.**This Certificate is valid until **2021-11-13**.Issued at **Høvik** on **2016-11-14**DNV GL local station: **Manchester**Approval Engineer: **Helge Bjørnarå**for **DNV GL**

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**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: **262.1-024084-1**  
Certificate No: **TAF00000FF**

## Product description

A-60 Steel Bulkhead - FireMaster XLS Blanket 60 mm x 64 kg/m<sup>3</sup>  
composed of a structural steel bulkhead insulated with a single layer of 60 mm thick FireMaster XLS Blanket (density 64 kg/m<sup>3</sup>) applied in between stiffeners and packed inside stiffeners and 25 mm thick FireMaster XLS Blanket (density 64 kg/m<sup>3</sup>) applied around the stiffeners.

The blankets are held in place using mild steel pins (Ø 3 mm / typically 50 mm long) welded to the bulkhead with friction-fit mild steel washers. The pins are to be installed with a nominal spacing of 300 mm across the blankets and maximum 350 mm along the blankets, whereas pins at the joints between blankets shall have a nominal spacing of 300 mm from the blanket edge. Maximum pin distance to lengthways joint is 300 mm.

The installation is to be performed according to the manufacturers Fire Protection Systems Information, reference No. FM-MS 01 PW and No. FM 4.112.

## 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 Annex 1 Parts 2 and 5) when required according to relevant rules.

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

The products may be manufactured at the premises of:

- Thermal Ceramics UK Ltd, Wirral, UK
- Grupo Industrial Morgan S.A De C.V, Pachuca, Mexico
- Thermal Ceramics de France S.A., Saint Marcelin en Forez, France
- Thermal Ceramics, Augusta, United States
- Thermal Ceramics Korea, Daegu, Korea
- Morgan Kailong (Jingmen) Thermal Ceramics Co., Ltd., China
- Morganite Brasil, Rio de Janeiro, Brazil

## Type Approval documentation

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

Test report No. KOMERI-0402-15T4083-1 dated 10 August 2016 from Korea Marine Equipment Research Institute, Busan, Korea.

Dwg No. MAMK-20160416-A60-003 dated 18 April 2016 from manufacturer.

Thermal Ceramics Fire Protection Systems Information, reference No. FM-MS 01 PW and No. FM 4.112 Rev. 0.

## 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.