

# TYPE APPROVAL CERTIFICATE

Certificate No:  
**TAF000008J**  
Revision No:  
**3**

## This is to certify:

**That the Class A Bulkhead**

with type designation(s)

**A-60 Steel Bulkhead - FireMaster Marine Plus Blanket 45 mm x 64 kg/m<sup>3</sup>**

Issued to

**Thermal Ceramics UK Ltd**  
**Wirral, Merseyside, United Kingdom**

is found to comply with

**DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations**  
**DNV GL rules for classification – Ships**  
**DNV GL offshore standards**

## Application :

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

**Restricted application: Fire hazard from the insulated side only**

**This certificate is recognized by Transport Canada.**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV.**

Issued at **Høvik** on **2021-06-04**

for **DNV**

This Certificate is valid until **2026-06-03**.

DNV local station: **Manchester**

Approval Engineer: **Helge Bjørnarå**

**Sverre Olav Bergli**  
**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.

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

A-60 Steel Bulkhead - FireMaster Marine Plus Blanket 45 mm x 64 kg/m<sup>3</sup>, composed of a structural steel bulkhead insulated with a single layer of 45 to 65 mm thick FireMaster Marine Plus Blanket (manufactured by Thermal Ceramics with density 64 kg/m<sup>3</sup>) applied across the tops of stiffeners following their contours.

The nominal blanket width is 610 mm and to be installed in 600 mm widths to form slight compressed butted joints.

The blankets are held in place using mild steel pins (Ø 3 mm / typically 60 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 on average 300 mm (maximum 350 mm) along the blankets, whereas pins at the joints between blankets shall have a nominal spacing of 150 mm from the blanket edge. Maximum pin distance to lengthways joint is 250 mm.

The installation is to be performed according to the manufacturers Fire Protection Systems Information, reference No. FM MS 01 PW and No. FM 4.69.

The products may be manufactured at the premises of:

- Morgan Kailong (Jingmen) Thermal Ceramics Co., Ltd., Jingmen, China.
- Morgan Thermal Ceramics (Shanghai) Co., Ltd., Shanghai, China.
- Thermal Ceramics de France S.A., Saint-Marcellin-en-Forez, France.
- Murugappa Morgan Thermal Ceramics Ltd., Dist.- Gandhinagar, India.
- Murugappa Morgan Thermal Ceramics Ltd, Ranipet, India.
- Morgan Thermal Ceramics Korea, Daegu, Korea.
- Grupo Industrial Morgan SA de CV, Mineral de La Reforma, Mexico.
- Morgan Advanced Materials Industries Ltd, Abudhabi, United Arab Emirates.
- Thermal Ceramics, Inc., Augusta, USA.

## Application/Limitation

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

Restricted application: Fire hazard from the insulated side only

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 and maintenance.

## Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, September 2018.

Test report No. KOMERI-0402-13T1606 dated 1 November 2013 from KOMERI, Busan, Korea.

Test report No. KOMERI-0402-15T4078 dated 1 July 2016 from KOMERI, Busan, Korea.

Thermal Ceramics Fire Protection Systems Information, reference No. FM MS 01 PW and No. FM 4.69, Rev. 4.

## 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 confirms that the product/s listed in this certificate is/are in accordance with Transport Canada's requirements.

## Periodical assessment

DNV'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.