



TYPE APPROVAL CERTIFICATE

Certificate No:
TAF00000N3
Revision No:
1

This is to certify:

That the Class A Bulkhead

with type designation(s)

A-60 Steel Bulkhead (Fire Insulated Side) - FireMaster Marine Plus Blanket 50 mm x 48 kg/m3

Issued to

Thermal Ceramics UK Ltd
Wirral, Merseyside, United Kingdom

is found to comply with

DNV statutory interpretations DNV-SI-0364 – SOLAS interpretations, Edition July 2021
DNV rules for classification – Ships
DNV offshore standards

Application :

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

Restricted application: Fire hazard from insulated 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.

Issued at **Høvik** on **2022-07-01**

for **DNV**

This Certificate is valid until **2027-06-30**.

DNV local station: **UK & Ireland CMC & VMC**

Approval Engineer: **Helge Bjørnarå**

Helene David-Andersen
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 (Fire Insulated Side) - FireMaster Marine Plus Blanket 50 mm x 48 kg/m³, composed of a structural steel bulkhead insulated on the stiffened side with a single layer of 50 mm thick FireMaster Marine Plus Blanket (manufactured by Thermal Ceramics with density 48 kg/m³) applied across the stiffeners following their contours.

The blankets are held in place using copper coated mild steel pins (Ø 3 mm / typically between 60 to 70 mm long) welded to the bulkhead and 38 mm friction-fit washers. The pins are to be installed with a maximum spacing of 350 mm. At the joints the blankets should be compressed. Joints between blankets can be placed a maximum of 350 mm from an anchor pin across the blanket width and a maximum of 250 mm from an anchor pin where lengths of blanket are joined together.

The installation is to be performed according to the manufacturers Fire Protection Systems Information, reference No. FM MS 01 PW and No. FM 4.102.

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, Ranipet, India.
- Morgan Thermal Ceramics Korea, Daegu, Korea.
- Grupo Industrial Morgan SA de CV, Pachuca de Soto, Mexico.
- Morgan Advanced Materials Industries Ltd, Abudhabi, United Arab Emirates.
- Thermal Ceramics, Inc., Augusta, USA.

Application/Limitation

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

Restricted application: Fire hazard from insulated 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.

Type Approval documentation

Certification in accordance with Class Programme DNV-CP-0338, September 2021.

Test report No. FT12069 dated 30 March 2012 from Far East Fire Testing Centre, Shanghai, China.

Thermal Ceramics Fire Protection Systems Information, reference No. FM MS 01 PW, Rev.9 and No. FM 4.102, Rev.1.

Tests carried out

Tested according to IMO FTP Code Part 3 (IMO Res. A.754(18)) and in compliance with IMO 2010 FTP Code Ch. 8.

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 "Procedures for Approval of Life-Saving Appliances, Fire Safety Systems, Equipment and Products (TP14612)", 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 DNV-CP-0338, Section 4.