TYPE APPROVAL CERTIFICATE

Certificate No:
TAF000006K
Revision No:
1

This is to certify:

That the Fire-Resisting Division for High Speed Craft

with type designation(s)
30 minute HSC Aluminium Bulkhead 2 mm - FireMaster Marine Plus Blanket

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

is found to comply with
IMO International Code of Safety for High-Speed Craft (HSC CODE)
DNV GL rules for classification – High speed and light craft

Application :

Approved as a non-loadbearing fire-resisting bulkhead 30.

Restricted application: Fire hazard from the insulated side only

This certificate is recognized by Transport Canada.

Issued at **Høvik** on **2021-06-04**

This Certificate is valid until **2026-05-15**.
DNV local station: **Manchester**

Approval Engineer: **Helge Bjørnarå**

for **DNV**

Digitally Signed By: Øyvind Hoff
Location: DNV Høvik, Norway
on behalf of

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.

Product description

"30 minute HSC Aluminium Bulkhead 2 mm - FireMaster Marine Plus Blanket",
composed of a 2 mm thick aluminium bulkhead horizontally stiffened on the exposed side by 25 mm wide x 38 mm deep x 3 mm thick angle stiffeners, spaced at 130 mm. The bulkhead is additionally reinforced by vertical aluminium I-section beams, 80 mm wide x 8 mm thick flanges and 215 mm high x 8 mm thick web, located (welded) across to the stiffeners and spaced at 1200 mm.

The bulkhead is insulated on the exposed side with a layer of 35 mm thick FireMaster Marine Plus Blanket (manufactured by Thermal Ceramics with density 70 kg/m^3) applied across the stiffeners, keeping a 38 mm air gap between the bulkhead and the blanket. The I-section beams are insulated around with a layer of 35 mm thick FireMaster Marine Plus Blanket (manufactured by Thermal Ceramics with density 70 kg/m^3) with air gap on both sides of the web (box insulation).

The nominal blanket width is 610 mm and is to be compressed to a width of 580 mm to ensure compression at joints.

The blankets are held in place using bi-metallic pins (Ø 3 mm / typically 50 & 90 mm long) welded to the angle stiffeners and 38 mm friction washers. The pins are to be installed with a maximal spacing of 350 mm, whereas pins at the joints between blankets shall have a nominal spacing of 100 mm from the blanket edge.

The installation is to be performed according to the manufacturers Fire Protection Systems Information, reference No. FM MS 02 PW and No. FM 4.66.

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 as a non-loadbearing fire-resisting bulkhead 30.

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. 227558 dated 16 May 2006 from BRE Testing, Garston, UK.

Thermal Ceramics Fire Protection Systems Information, reference No. FM MS 02 PW, Rev.1 and No. FM 4.66, Rev. 2.

Tests carried out

Tested according to IMO FTP Code Part 11 (IMO Res. MSC.45(65) and 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 "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.