DNV·GL

Certificate No:
MEDB00002NY

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of the Kingdom of Norway.

This is to certify:

That the Fire resisting divisions for high speed craft

with type designation(s)
30 minute Load Bearing Composite Deck - GRE/PVC Sandwich Panel Type

Issued to
Thermal Ceramics UK Ltd
Bromborough MERSEYSIDE, United Kingdom

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2017/306,**
item No. MED/3.34. SOLAS 74, Regulation X/3, 2000 HSC Code 7, IMO MSC.1/Circ.1457 and IMO 2010 FTP Code

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2022-06-30**.

Issued at **Høvik** on **2017-07-01**

DNV GL local station:
Manchester

Approval Engineer:
Helge Bjørnarå

Notified Body
No.: **0575**

for **DNV GL AS**

Vidar Dolonen
Head of Notified Body

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

NORWEGIAN ACCREDITATION PROD 019

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Product description

30 minute load bearing composite deck,
consisting of a stiffened GRE/PVC structural core panel insulated on exposed side (underside deck) with 60 mm (60 + 25 mm on stiffeners) FireMaster Marine Plus blanket of density 64 kg/m³.

The structural core panel is a sandwich construction consisting of 30 mm semi-rigid PVC-foam (Divinycell H80) with 1.0 mm GRP laminate on both sides. Structural core panel total thickness approx. 32 mm. The panel is stiffened on underside with two stiffeners approx. 64 mm x 205 mm (width x height). The laminates thickness on the stiffeners is approx. 2.0 mm (web/sides) and 5.0 mm thickness (flange/bottom). Max spacing between stiffeners is 2.5 m.

The underside of the deck panel is insulated with one layer 60 mm FireMaster Marine Plus blanket 64 kg/m³. The blankets are mounted with the horizontal joints transverse to the panel stiffeners. The blanket width of 610 mm is to be compressed to a width of 580 mm to ensure compression at joints.

The stiffeners are insulated with two layers of FireMaster Marine Plus blanket 64 kg/m³; 60 mm inner layer + 25 mm outer layer. The blankets are mounted with the longitudinal joints transverse to the stiffeners and the two layers are mounted with staggered joints. The blanket width of 610 mm is to be compressed to a width of 580 mm to ensure compression at joints.

The blankets are fixed to the structural core by self-drilling stainless steel anchors (Ø 3mm, 75 mm long on panel and 95 mm long on stiffeners) and 38 mm friction fit steel washers. The pins on panel are to be installed with a nominal spacing of 240 mm across the layers, 275 mm along the layers, whereas pins at the joints between blankets shall have a nominal spacing of 50 mm from the blanket edge.

On the stiffeners, the pins are to be installed on the sides (web) with a nominal spacing of 240 mm along the stiffeners, whereas pins at the joints between blankets shall have a nominal spacing of 50 mm from the blanket edge.

The installation is to be performed according to the manufacturers Fire Protection Systems Information, reference No. FM 4.76 and Method Statement FM-MS 05 PW.

Application/Limitation

Approved as a loadbearing fire-resisting bulkhead 30.

Restricted application: Fire hazard from the insulated side (underside)

The insulation material FireMaster Marine Plus Blanket has to be approved according to the Marine Equipment Directive and bear the Mark of Conformity.

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

<u>Application of other FRP materials</u>
The systems are in general only approved for composite cores with same materials and dimensions as tested. On a case by case basis other equivalent composites may be applied when confirmed acceptable and documented by the maker and found to be acceptable by the flag administration. The following issues are to be addressed:

1. The deck shall have stiffness and mechanical properties (cold conditions) equivalent to or better than that being tested.
2. The materials (core, fibre, resin, etc.) shall have mechanical properties at the relevant temperature range (typically 20°C to 250°C) equivalent to the material used in the test. The heat distortion temperature for each material, thickness of laminate and density of the core may be applied as criteria.

Type Examination documentation

Test report No. PX02743 dated 21 March 2011 from SP, Borås, Sweden.

Assessment report No. 3P02713 dated 4 April 2013 from SP, Borås, Sweden.

Thermal Ceramics Method Statement No. FM MS 05 PW, Rev. 3, and Fire Protection Systems Information No. FM 4.76, Rev. 1.

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 installation is to be marked with name and address of manufacturer, type designation, fire technical rating and Mark of Conformity (see page 1).