



CERTIFICATE OF FIRE APPROVAL

This is to certify that

The product(s) detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations for use on offshore units classed with Lloyd's Register, and for use on offshore units and onshore facilities when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	Morgan Advanced Materials, Thermal Ceramics
Address	Tebay Road Bromborough Wirral Merseyside CH62 3PH United Kingdom (UK)
Type	H-60 BULKHEAD
Equipment Description	Steel Bulkhead Insulated on the Stiffened Face (Fire Exposed Side) with- Type: "FireMaster Marine Plus Blanket (130mm thick, 70kg/m ³ density)" Insulation System
Specified Standard	Testing generally meets the requirements of: IMO Res. MSC.307 (88) - (2010 FTP Code), Annex 1, Part 3 (Integrity Performance Criteria) incorporating the NPD Hydrocarbon Time/Temperature Relationship

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue 28 August 2019 Expiry date 27 August 2024

Certificate No. SAS F190138 Signed 

Sheet No 1 of 3 Name K. Taylor
Surveyor to Lloyd's Register EMEA
A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

Lloyd's Register Group Limited, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register'. Lloyd's Register assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.



Page	2 of 3
Document number	SAS F190138
Issue number	1

DESIGN APPRAISAL DOCUMENT

Date 28 August 2019	Quote this reference on all future communications UKITSO/FIRE/TA/KT/WP36619266
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F190138

This Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

1. Korea Marine Equipment Research Institute (KOMERI), Busan, Korea, Test Report No. KOMERI-0402-12T1410, dated 28 February 2013.
2. Manufacturers Drawing No. FM CAD 13 H 02, dated 21 January 2013.

CONDITIONS OF CERTIFICATION

1. When applied to the stiffened face (fire exposed side) of a steel bulkhead, the "FireMaster Marine Plus Blanket" insulation system (130mm thick, 70kg/m³ density) described below may be considered as an "H-60 Bulkhead" with the hydrocarbon fire risk on either side of the bulkhead
2. Consisting of: three layers of "FireMaster Marine Plus Blanket" insulation (1 x 50mm thick layer and 2 x 40mm thick layers, 70kg/m³ density). The first layer is fitted vertically against the bulkhead between stiffener angles. Second layer is fitted horizontally over bulkhead and stiffener angles. Third layer is also fitted horizontally so that the horizontal joints were staggered with respect to those of the second layer
3. Insulation retained to the steel bulkhead and stiffeners with 3mm diameter welded steel pins and 38mm diameter spring washers: spaced at maximum centres of 300mm horizontally; 350mm vertically; a maximum of 150mm from insulation joints. Reference is made to Drawing No. FM CAD 13 H 02 [Approval Document Ref. 2] which shows the corresponding insulation and pinning arrangements
4. The size of the insulation blanket must be sufficient to allow suitable compression at all joints. The maximum width of insulation blankets is 610mm (600mm when compressed to form butt-joints)
5. When requested for application on corrugated divisions, the insulation layout and securing arrangements, depth of the corrugations and support arrangements are to be separately appraised for fire aspects and structural loadings on a project basis
6. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype
7. The Certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products, whether manufactured by themselves or their licensee manufacturers, if agreed by Lloyd's Register, are fully compliant with the relevant statutory regulations and Lloyd's Register Class Rules as applicable and designed and manufactured to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties

NOTES

1. For such non-combustible insulation materials the arrangements for this insulation system being fitted on the flat side of a bulkhead may also be considered for H-60 applications, subject to suitable fixing arrangements being separately approved by Lloyd's Register at the design stage.



Lloyd's
Register

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Page	3 of 3
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28 August 2019	UKITSO/FIRE/TA/KT/WP36619266

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PLACES OF PRODUCTION

Thermal Ceramics
Lieu-dit Les Plantées
St. Marcellin-en-Forez
F-42680
France

Thermal Ceramics
2102 Old Savannah Road
Augusta
GA 30906
United States of America (USA)

Thermal Ceramics
1-31 Bookdong, Non Gong Eup
Dal Sung-Gun, Dae Gui-Shi
711 855
Korea

Thermal Ceramics
Cerrada de la Paz No. 101
Zona Industrial la Paz
CP. 4218
Mineral de la Reforma Hidalgo
México

M/S Murugappa Morgan
Thermal Ceramics Ltd., Plot No.
26 & 27 SIPCOT Industrial
Complex
Ranipet 632 403 Vellore District
Tamil Nadu
India

Murugappa Morgan Thermal
Ceramics Ltd. Plots No. 681
Village Moti Bhoayan Kalol-sanand
Road, Dist. Gandhinagar, Pin 382
721, Gujarat
India

Morgan Thermal Ceramics
(Shanghai) Co., Ltd.
18 Kang An Road
Kangqiao Industrial Zone
Pudong, Shanghai
201315
China

Morgan Kailong (Jingmen)
Thermal Ceramics Co., Ltd.
No. 20-1, Quankou Road
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PO Box 146109
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United Arab Emirates (UAE)



Keith Taylor
Team Lead, Fire & Safety
Statutory Discipline Team
UK&I Technical Support Office, Marine & Offshore
Lloyd's Register

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).