

CERTIFICATE OF FIRE APPROVAL

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	Unifrax Limited
Address	Mill Lane Rainford St. Helens Merseyside, WA11 8LP United Kingdom (UK)
Type	A-60 BULKHEAD
Equipment Description	Fire Resisting 'A' Class Aluminium Bulkhead Insulated on both sides with Type: "FyreWrap LT Blanket"
Specified Standard	IMO Res. MSC.307(88) - (2010 FTP Code), Annex 1, Part 3

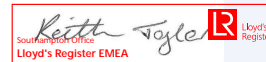
The attached Design Appraisal Document forms part of this certificate.

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 23 May 2017 Expiry date 22 May 2022

Certificate No. SAS F170132

Signed



Keith Taylor
Southampton Office
Lloyd's Register EMEA

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 F170132
Issue number	1

DESIGN APPRAISAL DOCUMENT

Date 23 May 2017	Quote this reference on all future communications SOUTSO/SFS/TA/KT/WP28381670
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F170132

This Design Appraisal Document forms part of the Certificate

APPROVAL DOCUMENTATION

Far East Fire Testing Centre (FEFTC), 511 Chuhua Zhi Lu, Shanghai Chemical Industry Park, Fengxian Sub-Zone, Shanghai, China; Fire Test Report No. FT16456, dated 21 December 2016

CONDITIONS OF CERTIFICATION

1. A-60 aluminium bulkhead consisting of 4mm thick aluminium bulkhead plate insulated with one layer of (55mm thick, density 70 kg/m³) 'FyreWrap LT Blanket' Alkaline Earth Silicate (AES) wool insulation fitted on to the aluminium bulkhead plate and stiffeners, and one layer of (55mm thick, density 70 kg/m³) 'FyreWrap LT Blanket' Alkaline Earth Silicate (AES) wool insulation fitted on to the aluminium bulkhead plate on the flat side. Insulation retained to the aluminum bulkhead plate and stiffeners with 3mm diameter steel pins and 38mm diameter steel washers: spaced at maximum centres of 300mm horizontally, 200mm vertically on the bulkhead layer of insulation; a maximum of 100mm from insulation joints and edge boundaries
2. This arrangement is a "double-sided application" and is suitable for a fire from either side of the bulkhead
3. Maximum width of insulation blankets: 600mm
4. The following variants of 'FyreWrap LT Blanket', with same insulation composition but varying surface facings, and which have been tested and approved separately as non-combustible, may be used: 'LTF', 'LTF2', 'LTFR', 'LTFR2', 'LTG', 'LTG2'
5. Composition and application of insulation material to be maintained in production and use in accordance with originally tested composition formula and method of application, and manufacturer's instructions
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.

PLACES OF PRODUCTION

Unifrax Limited
Mill Lane, Rainford, St Helens
Merseyside, WA11 8LP
United Kingdom (UK)

Unifrax France
17 Rue Antoine Durafour
BP2, 42420 Lorette
France



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Page	3 of 3
Document number	SAS F170132
Issue number	1

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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F170132



Keith Taylor
Senior Specialist
Aberdeen 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).



EC TYPE EXAMINATION (MODULE B) CERTIFICATE


This is to certify that:

LLOYD'S REGISTER VERIFICATION LIMITED (LRV), designated as a "notified body" under the terms of the Merchant Shipping (Marine Equipment) Regulations 2016 (S.I. 2016 No. 1025) did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the essential Fire protection equipment requirements of Marine Equipment Directive (MED) 2014/90/EU and Commission Implementing Regulation (EU) 2017/306 indicating design, construction and performance requirements and testing standards for marine equipment, subject to any conditions in the Design Appraisal Document attached hereto.

Manufacturer (Applicant) Address	Unifrax Limited Mill Lane Rainford St. Helens Merseyside, WA11 8LP United Kingdom (UK)
Reference	Regulation 2017/306
Regulation Item (No & Item designation)	MED/3.11a 'A' AND 'B' CLASS DIVISION, FIRE INTEGRITY - 'A' CLASS DIVISIONS
USCG Category Number	165.108 - 'A' AND 'B' CLASS DIVISION FIRE INTEGRITY (BULKHEAD PANELS)
Product Type	A-60 BULKHEAD
Product Description	Fire Resisting 'A' Class Aluminium Bulkhead Insulated on both sides with Type: "FyreWrap LT Blanket"
Specified Standard	IMO Res. MSC.307(88) - (2010 FTP Code), Annex 1, Part 3 IMO MSC.1/Circ.1435

The attached Design Appraisal Document (schedule) forms part of this certificate.

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

Date of issue	23 May 2017	Expiry date	22 May 2022
Certificate No.	MED 1750103	Signed	 Lloyd's Register Verification Ltd
Sheet No	1 of 3	Name	K. Taylor For and on behalf of Lloyd's Register Verification LRV EC Distinguishing No. 0038

Note:

This certificate is issued under the authority of the MCA.

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 the notified body named on this certificate of any modification or changes to the equipment in order to obtain a valid Certificate.

USCG-EU MRA - This product has been assigned a U.S. Coast Guard Module B number: USCG Module B number: 165.108/EC0038 to note type approval to Module B only as it pertains to obtaining U. S. Coast Guard approval as allowed by the "Corrigendum to Council Decision 2004/425/EC of 21 April 2004 on the conclusion of an Agreement between the European Community and the United States of America on the mutual recognition of certificates of conformity for marine equipment."

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Page 2 of 3
Document number MED 1750103
Issue number 1

DESIGN APPRAISAL DOCUMENT

Date 23 May 2017	Quote this reference on all future communications SOUTSO/SFS/TA/KT/WP28381670
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ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750103

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions and European Union legislation for the EC Type Examination of Marine Equipment for use on Merchant Ships Registered in the European Economic Area

This Design Appraisal Document (schedule) forms part of the Certificate

APPROVAL DOCUMENTATION

Far East Fire Testing Centre (FEFTC), 511 Chuhua Zhi Lu, Shanghai Chemical Industry Park, Fengxian Sub-Zone, Shanghai, China; Fire Test Report No. FT16456, dated 21 December 2016

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4. The following variants of 'FyreWrap LT Blanket', with same insulation composition but varying surface facings, and which have been tested and approved separately as non-combustible, may be used: 'LTF', 'LTF2', 'LTFR', 'LTFR2', 'LTG', 'LTG2'
5. This product has been assigned a **U.S. Coast Guard Module B number USCG Approval Category 165.108/EC0038** to note type approval to Module B only as it pertains to obtaining U. S. Coast Guard approval as allowed by the "Corrigendum to Council Decision 2004/425/EC of 21 April 2004 on the conclusion of an Agreement between the European Community and the United States of America on the mutual recognition of certificates of conformity for marine equipment"

In those instances where the Notified Body conducting the conformity assessment in accordance with either Module D, E or F of the Marine Equipment Directive is not Lloyd's Register Verification Ltd., such Notified Body would use the above U.S. Coast Guard Module B number to provide the manufacturer with the U.S. Coast Guard approval number by noting it on the Certificate of Conformity, thereby authorizing the manufacturer to mark the product accordingly

Note: For products placed on board U.S. flagged ships there is no declaration of conformity required to meet U.S. Coast Guard requirements

6. Production items of the subject equipment are to be manufactured in accordance with either an approved Production Quality Assurance system (Module D), a Product-Quality assurance system (Module E) or a Product Verification Process (Module F). **The wheelmark cannot be affixed to the product until a conformity assessment module is in place**
7. Each item, batch or lot of the equipment is to be issued with a "Declaration of Conformity" and have the "Mark of Conformity" affixed after a conformity assessment module is in place



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Page 3 of 3
Document number MED 1750103
Issue number 1

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ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750103

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