

## 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 installations classed with Lloyd's Register, and for use on offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

<b>Manufacturer</b>	Unifrax Limited
<b>Address</b>	Mill Lane Rainford St. Helens Merseyside, WA11 8LP United Kingdom (UK)
<b>Type</b>	<b>STRUCTURAL STEEL BULKHEAD FIRE PROTECTION SYSTEM (HYDROCARBON FIRE TEST)</b>
<b>Equipment Description</b>	Structural Steel Bulkhead Having a Restricted Steel Core Temperature Rise of 400°C at 120 minutes, with a "FyreWrap LT" AES wool insulation system, Restricted to Insulation being Applied on the Fire Exposed Side Only
<b>Specified Standard</b>	Testing meets the requirements of: IMO Resolution A.754(18) 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 26 November 2018 Expiry date 25 November 2023

Certificate No. SAS F180179 Signed 

Sheet No 1 of 3 Name B. Geary  
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 F180179
Issue number	1

## DESIGN APPRAISAL DOCUMENT

Date 27 June 2018	Quote this reference on all future communications SOUTSO/SFS/TA/BG/WP32824817
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### ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F180179

This Design Appraisal Document forms part of the Certificate.

#### APPROVAL DOCUMENTATION

Exova Warringtonfire, Warrington, United Kingdom, Hydrocarbon Fire Test Report No. WF 325728, dated 9 May 2013.

#### CONDITIONS OF CERTIFICATION

1. When applied to the fire exposed side of a structural steel bulkhead, the "FyreWrap LT" AES wool insulation system may be considered as an "H-0(400) Bulkhead" that may restrict the steel core mean temperature rise to 400°C at 120 minutes
2. Applications restricted to only the insulated side of the bulkhead being exposed to a fire risk in all cases
3. Consisting of: a single layer of "FyreWrap LT" AES wool insulation (40mm thick, 70kg/m<sup>3</sup> density) applied vertically on the plate between stiffeners and a separate layer over stiffeners, overlapped onto the plate insulation, all retained with 3mm diameter welded steel pins and spring washers, spaced at 250mm horizontally, 700mm on plate and 350mm on stiffening vertically and at 50mm from all insulation joints and boundaries
4. "FyreWrap LT" AES wool insulation may be considered with alternative facing materials that have been tested for Low Flame Spread Characteristics
5. Application in each case to be approved by Lloyd's Register at the design stage
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



Lloyd's  
Register

## Lloyd's Register EMEA

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Page 3 of 3
Document number SAS F180179
Issue number 1

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#### ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F180179

##### PLACE OF PRODUCTION

Unifrax Limited  
Mill Lane,  
Rainford,  
St. Helens  
Merseyside, WA11 8LP  
United Kingdom

Unifrax France  
17 Rue Antoine  
Durafour  
F-42420 Lorette  
France

Unifrax I LLC,  
54401 Smilax Road,  
New Carlisle,  
Indiana 46552,  
USA.



Ben Geary  
Technical Manager  
Statutory Fire & Safety  
Southampton Technical Support Office, Marine & Offshore  
Lloyd's Register EMEA

##### 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).*