



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.

Manufacturer	Unifrax Limited
Address	Mill Lane Rainford St. Helens Merseyside, WA11 8LP United Kingdom (UK)
Type	STRUCTURAL STEEL BULKHEAD PROTECTION SYSTEM (HYDROCARBON FIRE TEST)
Description	Fire Resisting Bulkhead - Type: "Structural Steel Bulkhead insulated on the fire exposed side with 'FyreWrap® Blanket'" (50mm thick, 128kg/m ³ density)
Specified Standard	IMO Resolution A.517(13), and Norwegian Petroleum Directorate 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 October 2015 Expiry date 25 October 2020

Certificate No. SAS F150299

Signed



Sheet No 1 of 3

Name

M. Farrier
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.

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DESIGN APPRAISAL DOCUMENT

Date 26 October 2015	Quote this reference on all future communications MTES/SFS/TA/MF/WP22378533
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F150299

This Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

SINTEF NBL, Trondheim, Norway, Fire Test Report No. 250000.10/88.016, dated 17th June 1988 and The Loss Prevention Council (LPC), Borehamwood, United Kingdom, Fire Test Report No. TE 82944 dated 26th May 1993.

CONDITIONS OF CERTIFICATION

1. Insulation previously known as 'FIBERFRAX DURABLANKET S' or 'INSULFRAX BLANKET'
2. Consisting of: steel bulkhead insulated on the fire exposed side with one layer of FyreWrap® Blanket (50mm thick, 128kg/m³ density) insulation, retained by welded steel pins 3mm diameter and 38mm diameter steel washers, spaced at 240mm centres and at 50mm from all edges of the insulation blanket
3. Insulated face of the division to be exposed to the fire hazard in all cases
4. The insulation system being applied to fire exposed side of bulkhead is necessary to limit the mean temperature rise of the steel core to 400°C after 120 minutes of hydrocarbon fire exposure
5. 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 UK
Mill Lane
Rainford
St Helens
Merseyside WA11 8LP
UK

Unifrax France
17 Rue Antoine Durafour
BP2
42420 Lorette
France

Unifrax India
99 k Stone, Ahmedabad
Surendrangar Hwy
Lakhtar, Dist. Surendrangar
Gujaret 382 775
India

Unifrax Brazil Ltda.
Avendida Independencia, 70
Bairro Sao Matheus
Vinhedo, SP 13280-000
Brazil



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PLACES OF PRODUCTION (CONTINUED)

Unifrax (Suzhou) Co. Ltd
59 Shiyuang Road
Xushuguan New Zone
215151 Suzhou
China

Unifrax Inc LLC
54401 Smilax Road
New Carlisle
Indiana 46552
United States of America (USA)



Martin Farrier
Lead Specialist
Statutory Fire & Safety
Marine Technology and Engineering Services
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).