



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	H-60 BULKHEAD
Equipment Description	Steel Bulkhead Insulated on one side with - Type: H-60 Class "FyreWrap LT Blanket" AES wool insulation system
Specified Standard	UK Department of Energy Hydrocarbon Time/Temperature Relationship; IMO Resolution A.754 (18) Performance Criteria; and IMO Res. MSC.307 (88) - (2010 FTP Code), Annex 1, Part 3 (Integrity Performance Criteria)

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 22 May 2017 Expiry date 21 May 2022

Certificate No. SAS F170127

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.



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DESIGN APPRAISAL DOCUMENT

Date 22 May 2017	Quote this reference on all future communications SOUTSO/SFS/TA/KT/WP28113343
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F170127

This Design Appraisal Document forms part of the Certificate

APPROVAL DOCUMENTATION

Exova Warringtonfire, Warrington, UK, Fire Test Report No. 364381, dated 21 October 2016

CONDITIONS OF CERTIFICATION

1. When applied to the stiffened side of a steel bulkhead, the "FyreWrap LT" Alkaline Earth Silicate (AES) wool insulation system described below may be considered as an "H-60 Bulkhead" for hydrocarbon fire risks from either side of the bulkhead
2. Consisting of: three layers of "FyreWrap LT" AES wool insulation (each 40mm thick, 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 276mm from insulation joints; a maximum of 188.5mm vertical edge boundaries; a maximum of 164mm from the floor edge boundaries; and a maximum of 76mm from ceiling edge boundaries. All butt joints to be staggered at least 300mm vertically between layers
4. Maximum width of insulation blankets: 600mm
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

NOTES

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

Lloyd's Register EMEA

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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



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)