



## 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>	Roxtec International AB
<b>Address</b>	Box 540 S-371 23 Karlskrona Sweden
<b>Type</b>	<b>CABLE PENETRATION (HYDROCARBON FIRE TEST)</b>
<b>Equipment Description</b>	Fire Resisting Single/Multi Cable Penetration (Rectangular) for H-0 (400°C) Structural Bulkheads - Type: "S-1x1 (80mm x 121mm) to S-8x1 (141mm x 298mm) Frame Sizes"
<b>Specified Standard</b>	IMO Resolution A.754(18) NPD Hydrocarbon Time/Temperature Curve

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 7 March 2016 Expiry date 6 March 2021

Certificate No. SAS F160137 Signed 

Sheet No 1 of 3 Name S. Abraham  
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 8 July 2016	Quote this reference on all future communications SOUTSO/SFS/TA/SA/WP25742200
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### ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160137

This Design Appraisal Document forms part of the Certificate.

#### APPROVAL DOCUMENTATION

SINTEF Energy, Norwegian Fire Research Laboratory, Norway, Fire Test Report No, 22N007.12C, Dated 16, September 1999.

#### CONDITIONS OF CERTIFICATION

1. When used in conjunction with H-0 (400c) Class insulated structural steel bulkheads and with a maximum steel core temperature requirement of 400°C after 120 minutes duration
2. Consists of: Roxtec rectangular steel frames 10mm thick filled with 60mm thick Roxtec RM Modules around the cables and welded to the non-fire exposed side of the bulkhead. The fire exposed side of the bulkhead shall be insulated with an approved system and insulation extended to fully cover the face of the transit frame on the fire exposed side
3. For applications in H-0 Class steel bulkheads (with no specified temperature criteria), penetrations are to be fitted with the same or equivalent insulation arrangements as those used in the fire tests (including any insulation fitted on the penetration itself in the tests) for a minimum distance of 450mm around the penetration, on all fire risk sides in bulkheads and insulation should be extended to cover the full side(s) and the end face(s) of the steel frame, with an overlap of at least 20mm from the steel edges. The above mentioned insulation arrangements should be additional to any thermal or acoustic insulation, but may include any fire rated insulation already fitted on the bulkhead and/or on the penetration itself, such that the total fire rating is equivalent to the arrangements tested
4. Tested frame size: S-1x1 (80mm x 121mm) to S-8x1 (141mm x 298mm)
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



Lloyd's  
Register

## Lloyd's Register EMEA

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#### ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160137

##### PLACE OF PRODUCTION

Roxtec International AB  
Box 540  
S-37123 Karlskrona  
Sweden

  
Fire & Safety, MTESS  
Lloyd's Register EMEA

Saji Abraham  
Senior Specialist  
Statutory Fire and 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).*