



CERTIFICATE OF FIRE APPROVAL

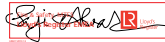
This is to certify that

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	Roxtec International AB
Address	Box 540 S-371 23 Karlskrona Sweden
Type	CABLE PENETRATION (HYDROCARBON FIRE TEST)
Equipment Description	Fire Resisting Circular Multiple Cable Penetration – Type: “Roxtec R frames” for restricted applications in H-60 and H-120 Class steel bulkheads and decks
Specified Standard	IMO Fire Test Procedures Code, Annex 1, Part 3 EN 1363-2 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 F160139	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.

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Page	2 of 3
Document number	SAS F160139
Issue number	1

DESIGN APPRAISAL DOCUMENT

Date	Quote this reference on all future communications
6 May 2016	MTES/SFS/TA/SA/WP25742200

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160139

This Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Danish Institute of Fire and Security Technology, Test Report No. PG11087 dated 12 February 2003.

Danish Institute of Fire and Security Technology, Test Report No. PG11088 dated 18 February 2003.

Det Norske Veritas, Malmo, Watertightness and Gastightness Test Report Nos. MLM 010238 dated 30 August 2001.

CONDITIONS OF CERTIFICATION

1. When used in conjunction with H-60 and H-120 Class bulkheads and decks, when insulated with approved arrangements suitable for the required rating on the fire hazard side (restricted applications)
2. For applications in H-0 and H-0 (400°C) Class steel bulkheads and decks, penetrations are to be fitted with the same or equivalent H-120 Class 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 decks 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
3. The above mentioned H-120 Class insulation arrangements should be additional to any thermal or acoustic insulation, but may include any fire rated insulation (e.g. H-60) already fitted on the bulkhead or deck and/or on the penetration itself, such that the total fire rating is H-120
4. Frame types: R frames
5. Frame sizes: 70-200
6. Consisting of: circular steel sleeves (welded or bolted) with R-type (EMC versions included) halogen free rubber frames and filled with Roxtec halogen free insert modules, mounted to the non-fire exposed side in steel bulkheads and non-fire exposed side (top side) in steel decks
7. 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

1. The penetration types R 70 and R 200 were subjected to gas overpressure with a value of 4.0 bar for a duration of 30 minutes, as detailed in report Nos. MLM 010238.
2. The penetration types R 70 and R 200 were subjected to a hydrostatic pressure test for 60 minutes at 6.0 bar without any leakage, as detailed in report Nos. MLM 010238.



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Page 3 of 3
Document number SAS F160139
Issue number 1

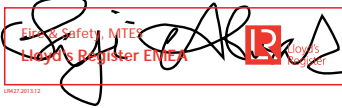
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160139

PLACE OF PRODUCTION

Roxtec International AB
Box 540
S-371 23 Karlskrona
Sweden



Saji Abraham
Senior 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).