



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 Single or Multi Cable (Rectangular) Penetration- Types: "S-, S BTB, SO-, SF-, SFO, SK-, and SR" for restricted applications in H Class steel bulkheads and decks
Specified Standard	(UK) Department of Energy hydrocarbon time/temperature relationship. IMO Resolution A.754 (18) 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	21 March 2016	Expiry date	20 March 2021
Certificate No.	SAS F160133	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 F160133
Issue number	1

DESIGN APPRAISAL DOCUMENT

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

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160133

This Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

SINTEF Energy, Norwegian Fire Research Laboratory, Norway, Fire Test Reports No: 250000.20/90.313, dated 9 November 1990 and No: SB 846007.06/970706 dated 19 September 1997. SP Technical Research Centre, Boras, Sweden; Fire Test Report no: P703775 dated 07 December 2007.

CONDITIONS OF CERTIFICATION

1. When used in conjunction with H-60 and H-120 Class steel 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. 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

The above requirements do not apply to "S6 BTB (Back To Back) penetrations" (maximum frame size: 120mm wide x 220mm high x 200mm deep) and they are accepted for applications in H-0 Class steel bulkheads, when fitted to the non-fire exposed side
3. The "S 8+8x3" penetrations are accepted for applications in H-60 Class steel bulkheads, when fitted with an approved H-60 Class insulation system on the bulkhead and over the steel coaming on all fire risk sides of bulkheads and insulation should be extended to fully cover the side(s) and face(s) of the outer steel perimeter coaming as well as the internal steel members, with an overlap of at least 50mm from the steel edges
4. The "S 1x1" penetrations are accepted for applications in H-120 class steel bulkheads, when fitted with an approved H-120 Class insulation system on the bulkhead and over the steel coaming on all fire risk sides of bulkheads and insulation should be extended to fully cover the side(s) and face(s) of the steel coaming, with an overlap of at least 50mm from the steel edges
5. The "S6" (120mm wide x 220mm high x 60mm deep) penetrations are accepted for applications in H-120 Class steel bulkheads, when fitted to the non-fire exposed side and H-120 Class insulation on the fire exposed side of the bulkhead extended to cover the face of the steel coaming with an overlap of 50mm from the steel edges
6. The types "S 2x1" to "S 8x1" and "S 6x2" penetrations are accepted for applications in H-60 and H-120 Class steel decks, when fitted to the non-fire exposed side (top side) and insulation fitted to the underside of deck extended to cover the face of the steel coaming with an overlap of at least 50mm from the steel edges ("S 8x1" and "S 6x2" penetrations to be fully insulated on the underside for H-120 Class steel deck applications)



Page 3 of 3
Document number SAS F160133
Issue number 1

DESIGN APPRAISAL DOCUMENT

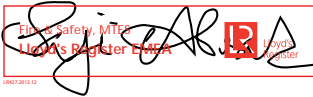
Date 5 May 2016	Quote this reference on all future communications MTES/SFS/TA/SA/WP25742200
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7. Consists of: Roptec "S" steel frames 10mm thick, filled with 60mm deep RM modules around the cables and welded to the steel bulkhead or deck
8. "S6 BTB (Back To Back) penetrations" consists of: two "S6" penetration seals enclosed in a rectangular steel coaming (maximum size: 120mm wide x 220mm high x 200mm deep) and separated by an 80mm air gap
9. Used with EMC Rox Kit or Rox Kit (assembly parts), or EMC Rox Wedge Kit or Rox Wedge Kit (alternative assembly parts), EMC Roxylon modules or Roxylon modules (multi diameter modules or solid modules)
10. 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

PLACE OF PRODUCTION

Roptec International AB
Box 540
S-37123 Karlskrona
Sweden



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).