# CERTIFICATE OF FIRE APPROVAL

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

| | |
|---|---|
| **Manufacturer** | Roxtec International AB |
| **Address** | Rombvägen 2<br>Box 540<br>S-371 23 Karlskrona<br>Sweden |
| **Type** | **CABLE PENETRATION (STANDARD FIRE TEST)** |
| **Description** | Fire Resisting Single/Multiple Rectangular Cable Penetration – Type: "**S-Series**" for applications in aluminium bulkheads and decks |
| **Specified Standard** | IMO Res. MSC.61 (67) - (FTP Code) Annex 1 Part 3<br>IMO MSC/Circ.1120<br>IMO Res. MSC.307(88) – (2010 FTP Code), Section 8 |

**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 | 8 March 2016 | Expiry date | 7 March 2021 |
| Certificate No. | SAS F160311 | Signed | |
| Sheet No | 1 of 3 | Name | S. Abraham<br>Surveyor to Lloyd's Register EMEA<br>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 EMEA**
*71 Fenchurch Street, London, EC3M 4BS*
*Telephone 020 7423 2416 Fax 020 7423 2053*
*Email med@lr.org*


Document number
SAS F160311
Issue number
1

## DESIGN APPRAISAL DOCUMENT

| Date | Quote this reference on all future communications |
|---|---|
| 21 October 2016 | SOUTSO/SFS/TA /FF/SA/WP25540505 |

**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160311**

This Design Appraisal Document forms part of the Certificate.

**APPROVAL DOCUMENTATION**

Norwegian Fire Research Laboratory (SINTEF), Trondheim, Norway, Test Report Nos. 103070.13B dated 23 April 2002 and 103070.14B dated 4 July 2002, Danish Institute of Fire and Security Technology, Hvidovre, Denmark, Test Report No. PGA10024 dated 21 December 2011, Research Institute of Marine Engineering (RIME), Tokyo, Japan; Test Report No. 09-344(E) dated 11 December 2009 and SP Technical Research Institute of Sweden, Borås, Sweden, Test Report No. P603001, dated 23 January 2007.

**CONDITIONS OF CERTIFICATION**

1. When used in conjunction with A-60 aluminium bulkheads with approved insulation arrangements
2. Aluminium bulkheads in all cases must be insulated with an approved system to prevent the core temperature exceeding 200 °C and all penetrations fitted to such bulkheads must also be insulated with either the same system or another approved A-60 system
3. For all applications in aluminium bulkheads, an additional A-60 insulation collar should be fitted for a minimum distance of 200mm around the penetrations on both sides of the bulkhead and insulation should be extended to cover the full side(s) and the face(s) of the penetrations, with an overlap of at least 50mm from the steel edges, in order to prevent the heat transmission along the penetrations to the aluminium structural core. For penetrations with combination frames, the insulation should also be extended to fully cover the internal steel/aluminium members of the penetration frame on both sides, with an overlap of at least 50mm from the steel edges
4. Frame types S, SF, SK, SR, SRC, r20 & r40 and BTB with sizes: 1x1 up to 8x1 and multiples thereof to a maximum frame size equivalent to that of type: "S 8+8x3" penetration
5. Penetration seals consist of: Roxtec aluminium frames filled with 60mm thick RM modules and welded to the steel division
6. EMC seal versions are acceptable
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

**NOTE**

The penetration seals were subject to a gastight pressure at 4 bar for 30 minutes with no leakage and a hydrostatic pressure of 6 bar for a period of 30 minutes as detailed in report No. MLM020106

**Lloyd's Register EMEA**
*71 Fenchurch Street, London, EC3M 4BS*
*Telephone 020 7423 2416 Fax 020 7423 2053*
*Email med@lr.org*


Document number
SAS F160311
Issue number
1

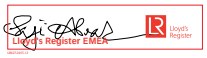
## DESIGN APPRAISAL DOCUMENT

| Date | Quote this reference on all future communications |
|---|---|
| 21 October 2016 | SOUTSO/SFS/TA /FF/SA/WP25540505 |

**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160311**

**PLACE OF PRODUCTION**

Roxtec International AB
Rombvägen 2
Box 540
371 23 Karlskrona
Sweden




Saji Abraham
Senior Specialist
Statutory Fire & Safety
Southampton Technical Support Office, Marine & Offshore
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).*