

# 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.

<b>Manufacturer</b>	<b>Roxtec International AB</b>
<b>Address</b>	Rombvägen 2, Box 540, S-371 23 Karlskrona, Sweden
<b>Type</b>	Pipe Penetration (Standard Fire Test combined with Water Tightness Test)
<b>Description</b>	Fire Resisting Plastic Pipe Penetration Seals – Type: "RS PPS/S" (Back-to-Back Arrangement) series fitted to ensure the watertight integrity of a bulkhead where heat-sensitive materials are used.
<b>Trade Name</b>	RS PPS/S F+WT
<b>Specified Standard</b>	SOLAS Chapter II-1 Regulation 13 – Openings in watertight bulkheads below the bulkhead deck in passenger ships including amendment IMO MSC 98/23/Add.1, Annex 12, Regulation 13.2.3.

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 Canada Limited of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document and its supplementary Type Approval Terms and Conditions form 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.

Lloyd's Register North America, Inc.  
1330 Enclave Parkway, Suite 200, Houston, TX 77077, USA.

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**Bruce McDonald**

Fire and Safety Lead Specialist to  
Lloyd's Register Americas Inc.  
A member of the Lloyd's Register group

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### **ATTACHMENT TO CERTIFICATE OF FIRE APPROVAL No. LR2051699SF-02**

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

#### **APPROVAL DOCUMENTATION**

01. Roxtec RS PPS/S F+WT Roxtec product sheet
02. Roxtec RS PPS/S standard Roxtec product sheet
03. RS PPS/S product information drawing S1011273
04. Insulation drawing S1558595 Rev. A

#### **TEST REPORTS**

05. N141NBR5 Dated 2018-11-05 Including Roxtec test report DOC-002562 dated 2018-10-31
06. N141RA6Z Dated 2019-01-24 Including Roxtec test report DOC-002621 dated 2019-01-23
07. N141S7E5 Dated 2019-03-10 Including Roxtec test report DOC-002676 dated 2019-03-05
08. N141SGZW Dated 2019-03-10 Including Roxtec test report DOC-002700 dated 2019-03-06
09. N141SMF7 Dated 2019-03-15 Including Roxtec test report DOC-002718 dated 2019-03-13
10. N141SMF8 Dated 2019-03-15 Including Roxtec test report DOC-002719 dated 2019-03-13
11. N141SRGA Dated 2019-03-15 Including Roxtec test report DOC-002736 dated 2019-03-15
12. N141UBRY Dated 2019-08-07 Including Roxtec test report DOC-002962 dated 2019-08-07
13. N141W15W Dated 2019-09-30 Including Roxtec test report DOC-003037 dated 2019-09-09
14. N141Y94A Dated 2020-02-20 Including Roxtec test report DOC-003037 dated 2020-02-18
15. N141Y94C Dated 2020-02-24 Including Roxtec test report DOC-003037 dated 2020-02-18

#### **CONDITIONS OF CERTIFICATION**

1. 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.
2. The certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products, whether manufactured by themselves or their licensee manufacturers, if agreed by Lloyd's Register, are fully compliant with the relevant statutory regulations and Lloyd's Register Class rules as applicable and designed, manufactured and installed to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties.
3. When used in conjunction with watertight steel bulkheads with approved insulation arrangements in accordance with drawing S1558595 Rev. A. For applications in watertight bulkheads on passenger and SPS vessels in accordance with SOLAS Ch. II-1 Reg. 13.2.3 (2014 edition) including amendment IMO MSC 98/23/Add.1, Annex 12, Regulation 13.2.3 and IMO MSC/Circ. 736 Paragraph 2.1. If the flag Administration has specific requirements, this will prevail.
4. Roxtec RS PPS/S F+WT heat sensitive pipe penetration system consists of two round rubber seals fitted around the pipe on both sides of an extended steel sleeve generating a "back-to-back arrangement". The two seals incorporates intumescent strips at the centre, which expands extensively when exposed to high temperature. The sleeve or frame shall have a centred position in the bulkhead, and be welded to it.

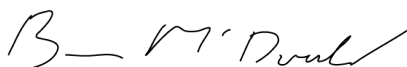
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5. The penetration seal system is subjected to hydrostatic pressure test at 2 bar for 60 minutes without any leakage, after having undergone a standard A-class fire test. Tightness test pressure is applied to the same side of the division which is exposed to the fire test. The results achieved are as described in the table below:

Pipe Material	tested nominal diameter	Pipe System Size Range	Length of sleeve
ABS	16mm-110mm	RS PPS/S 43-150 (BTB)	600mm
PB	16mm-110mm	RS PPS/S 43-150 (BTB)	600mm
PE/HDPE	16mm-110mm	RS PPS/S 43-150 (BTB)	600mm
PP/PPR/PPML/PPFR	16mm-110mm	RS PPS/S 43-150 (BTB)	600mm
PVC (inc uPVC & cPVC)	16mm-110mm	RS PPS/S 43-150 (BTB)	600mm
PVDF	16mm-110mm	RS PPS/S 43-150 (BTB)	600mm
PE/AL/PE	16mm-63mm	RS PPS/S 43-100 (BTB)	600mm

**PLACES OF PRODUCTION**

Roxtec International AB  
 Rombvägen 2, Box 540,  
 S-371 23 Karlskrona, Sweden



Bruce McDonald  
 Fire and Safety Lead Specialist  
 Lloyds Register Americas

**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).*