



Marine & Offshore

Certificate number: 73351/A0 BV

File number: ACI 4000/032/014

Product code: 5300H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

ROXTEC International AB
KARLSKRONA - SWEDEN

for the type of product

PIPE, CABLE, DUCT PENETRATIONS IN FIRE DIVISIONS

A-Class Penetration Systems with Multidiameter Technology, in 60 min load-bearing composite divisions:

S-, R-, RS- and RS PPS/S-series

(For details of approved configurations, see §1)

****For bulkheads only, Restricted application (see §4.1)****

Requirements:

BUREAU VERITAS Rules for the Classification of High Speed Craft, Chapter 7

SOLAS 74, as amended, Regulations X/3

IMO Res. MSC.307(88) (2010 FTP Code)

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 19 Oct 2028

For Bureau Veritas Marine & Offshore,

At BV COPENHAGEN, on 19 Oct 2023,

Hans-erik ERICSSON

This certificate was created electronically and is valid without signature



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 4 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

A-60 Class Cable or Pipe Penetration System with Multidiameter Technology, in 60 minutes Load-Bearing Composite Divisions

S-series consisting of aluminium, steel or GRP frames (SFHM, SRC), filled with Roxtec halogen free RM modules and assembled with Roxtec wedge kit. Frame installation method based on frame material, aluminium and steel frames are bolted whereas GRP frames are laminated/glued onto the division.

R-series consisting of aluminium, steel or GRP sleeves, fitted with R frame and filled with Roxtec halogen free RM modules. Sleeve installation method based on frame material, aluminium and steel frames are bolted whereas GRP frames are laminated/glued onto the division.

RS-series consisting of aluminium, steel or GRP sleeves, fitted with RS or RS OMD seals. Sleeve installation method based on frame material, aluminium and steel frames are bolted whereas GRP frames are laminated/glued onto the division.

RS PPS/S-series consisting of aluminium, steel or GRP sleeves, fitted with RS PPS/S seals with integrated intumescent material. Sleeve installation method based on frame material, aluminium and steel frames are bolted whereas GRP frames are laminated/glued onto the division.

Additional insulation on penetrations and/or cables/pipes:

- should be approved as having the same level of performance as the penetrated division and expected classification of penetration,
- is to be fitted as shown in the referred Manufacturer's drawings (see §2) and also according to Manufacturer's insulation guidelines.

1.1 – Penetration systems for 60 minutes Load-Bearing Composite Bulkheads

Seal type	Size	Sleeve type	Service	Service diameter [mm]	Filling ratio	Frame/ Seal position	Insulation drawing
R-series	50 - 200	SLF R Alu/Steel	Cables	Up to 82	Max. 100 %	Any	S1582729 rev. A dated 26/08/22 – ID 1
R-series	50 - 200	SL GRP	Cables	Up to 82	Max. 100 %	Any	S1582736 rev. A dated 26/08/22 – ID 1
S-series	1x1 - 8x1	SFHM Alu/Steel	Cables	Up to 82	Max. 100 %	Any	S1582726 rev. A dated 29/08/23 - ID 1
S-series	4x1 – 6x1	SRC GRP	Cables	Up to 90	Max. 100 %	Any	S1582727 rev. A dated 26/08/22 – ID 1
S-series	4x1 – 6x1	SRC GRP	Steel pipes / Titanium pipes	6 - 30	-	Any	S1582728 rev. A dated 26/08/22 - ID 1
RS-series	23 - 150	SLF RS Alu/Steel	Steel pipes / Titanium pipes	6 - 114	-	Any	S1582739 rev. A dated 26/08/22 - ID 1-2
RS-series	23 – 150	SLF RS Alu/Steel	Copper pipes / Cu/Ni pipes	6 - 108	-	Any	S1582739 rev. A dated 26/08/22 - ID 3-4
RS-series	50 - 450	SLF RS Alu/S teel	GRE pipes	30 - 360	-	Any	S1582738 rev. A dated 26/08/22 - ID 1-2
RS-series	25 - 125	SL GRP	Cables	Up to 90	N/A	Any	S1582737 rev. A dated 26/08/22 - ID 1
RS-series	25 - 150	SL GRP	Steel pipes / Titanium pipes	6 - 114	-	Any	S1582740 rev. A dated 26/08/22 - ID 1-2
RS-series	25 - 150	SL GRP	Copper pipes / Cu/Ni pipes	6 - 108	-	Any	S1582740 rev. A dated 26/08/22 - ID 3-4

Seal type	Size	Sleeve type	Service	Service diameter [mm]	Filling ratio	Frame/Seal position	Insulation drawing
RS PPS/S-series	31	SLF RS Alu/Steel	Thermoplastic pipes*	16	-	Any	S1582741 rev. A dated 26/08/22 - ID 1
RS PPS/S-series	31 - 125	SLF RS Alu/Steel	PE/Alu/PE pipes	16 - 75	-	Any	S1582741 rev. A dated 26/08/22 - ID 2
RS PPS/S-series	50 - 150	SL GRP	Thermoplastic pipes*	16 - 110	-	Any	S1582742 rev. A dated 26/08/22 - ID 1
RS PPS/S-series	50 - 125	SL GRP	PE/Alu/PE pipes	16 - 75	-	Any	S1582742 rev. A dated 26/08/22 - ID 2

*PP, PVC, PB, ABS, PE, PVDF

1.2 – Penetration systems for 60 minutes Load-Bearing Composite Decks

Seal type	Size	Sleeve type	Service	Service diameter [mm]	Filling ratio	Frame/Seal position	Insulation drawing
R-series	50 - 200	SLF R Alu/Steel	Cables	Up to 82	Max. 100 %	Any	S1582729 rev. A dated 26/08/22 - ID 2
R-series	50 - 200	SL GRP	Cables	Up to 82	Max. 100 %	Any	S1582736 rev. A dated 26/08/22 - ID 2
S-series	1x1 - 8x1	SFHM Alu/Steel	Cables	Up to 82	Max. 100 %	Any	S1582726 rev. A dated 29/08/23 - ID 2
S-series	4x1 – 6x1	SRC GRP	Cables	Up to 82	Max. 100 %	Any	S1582727 rev. A dated 26/08/22 - ID 2
RS-series	23 - 150	SLF RS Alu/Steel	Steel pipes / Titanium pipes	6 - 114	-	Any	S1582739 rev. A dated 26/08/22 - ID 5, 6
RS-series	23 – 150	SLF RS Alu/Steel	Copper pipes / Cu/Ni pipes	6 - 108	-	Any	S1582739 rev. A dated 26/08/22 - ID 7-8
RS-series	50 - 450	SLF RS Alu/Steel	GRE pipes	30 - 360	-	Any	S1582738 rev. A dated 26/08/22 - ID 3-4
RS-series	25 - 125	SL GRP	Cables	Up to 90	N/A	Any	S1582737 rev. A dated 26/08/22 - ID 2
RS-series	25 - 150	SL GRP	Steel pipes / Titanium pipes	6 - 114	-	Any	S1582740 rev. A dated 26/08/22 - ID 5-6
RS-series	25 - 150	SL GRP	Copper pipes / Cu/Ni pipes	6 - 108	-	Any	S1582740 rev. A dated 26/08/22 - ID 7-8
RS PPS/S-series	31 - 150	SLF RS Alu/Steel	Thermoplastic pipes*	16 - 110	-	Any	S1582741 rev. A dated 26/08/22 - ID 3
RS PPS/S-series	31 - 125	SLF RS Alu/Steel	PE/Alu/PE pipes	16 - 75	-	Any	S1582741 rev. A dated 26/08/22 - ID 4
RS PPS/S-series	50 - 150	SL GRP	Thermoplastic pipes*	16 - 110	-	Any	S1582742 rev. A dated 26/08/22 - ID 3
RS PPS/S-series	50 - 125	SL GRP	PE/Alu/PE pipes	16 - 75	-	Any	S1582742 rev. A dated 26/08/22 - ID 4

*PP, PVC, PB, ABS, PE, PVDF

2. DOCUMENTS AND DRAWINGS:

As per the Manufacturer's insulation drawings quoted in tables in §1.

3. TEST REPORTS:

All as per IMO 2010 FTP Code, Annex1, part 3, from CTO laboratory, Poland.

3.1 - Bulkhead:

Test report	Date
N° RS-20/B-253/E	09/07/2020
N° RS-20/B-426/E	23/11/2020
N° RS-20/B-417/E	19/01/2021

3.2 - Deck:

Test report	Date
N° RS-20/B-254/E	04/08/2020
N° RS-20/B-341/E	22/10/2020

4. APPLICATION / LIMITATION:

4.1 - **Restricted application (for bulkheads only):** installation on board should be such as the insulated side of the 60 minutes load-bearing composite bulkhead is exposed to the fire hazard.

4.2 - Approved for use in 60 minutes load-bearing composite bulkhead or deck with fire insulation as described in §1.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The "A-60 Class Cable or Pipe Penetration System with Multidiameter Technology, in 60 minutes Load-Bearing Composite Divisions" are to be supplied by **ROXTEC International AB** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **ROXTEC International AB** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

6. MARKING OF PRODUCT:

The product or packing is to be marked with Manufacturer name, type, designation and fire-technical rating.

7. OTHERS:

7.1 - It is **ROXTEC International AB's** responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - Testing of the penetrations for gastightness and watertightness as per following inspection reports, witnessed by Third Party surveyor (DNV):

Product	Report	Dated	Performance
R frames (sizes 50 & 200)	N141XE2C	19/02/2020	Watertightness: 3 bars for 60 min Gas tightness: 1.5 bars for 30 min
RS seals (sizes 25 & 200)	N141XE2C	19/02/2020	Watertightness: 3 bars for 60 min Gas tightness: 1.5 bars for 30 min
RS PPS/S seals (sizes 50 & 150)	N142177N	01/09/2020	Watertightness: 3 bars for 60 min Gas tightness: 1.5 bars for 30 min
SRC R20 GRP frame (sizes 4x1 & 6-1)	N142846G	02/11/2021	Watertightness: 3 bars for 60 min Gas tightness: 1.5 bars for 30 min

*** END OF CERTIFICATE ***