



Marine & Offshore

Certificate number: 13965/D1 BV

File number: ACI4000/032/006

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 Single-Cable and Multi-Cables sealing system with multidiameter technology, R series frames
A-class Single-Pipe and Multi-Pipes sealing system with multidiameter technology, R series frames

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships Part C Chapter 4
SOLAS 74, as amended, Regulations II-2/9
IMO Res. MSC.307(88) (2010 FTP Code)
IMO MSC.1/Circ. 1488
IMO MSC.1/Circ. 1276

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: 30 Mar 2025

For Bureau Veritas Marine & Offshore,
At BV COPENHAGEN, on 22 Feb 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 7 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

1.1 - A-Class Single-Cable and Multi-Cable sealing system with multidiameter technology, R series frames (including EMC and Ex versions)

Consisting of Roxtec R-series frames (standard, EMC or Ex), filled with Roxtec RM modules (standard, Ex or EMC, PE, ES, BG, BGB), mounted in sleeves that are welded or bolted (depending on the type of sleeve) or attached through expansion (R X kit) onto steel divisions.

Additional insulation on penetrations and/or cables:

- 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 §2.1 & §2.2) and also according to Manufacturer's insulation guidelines.

1.1.1 - Standard and extended length (400 mm) SL R sleeves (for welded mounting)

Division	Bulkhead	Deck	
Penetration sizes	R50 to R200	R50 to R200	
Length of sleeve (mm)	55	55	400
Depth of the penetration (mm)	71~75	71~75	
Overall outer diameter of the penetration (mm)	60 to 215	60 to 215	
Packing space (mm)	30 x 30 ~ 120 x 120	30 x 30 ~ 120 x 120	
Max. cable diameter (mm)	90	90	
Filling ratio	0 ~44%	0 ~ 44.2%	
Classification	A-0 to A-60	A-0 to A-60	

1.1.2 - SLF R sleeves (for bolted mounting)

Division	Deck
Penetration sizes	R50 to R200
Length of sleeve (mm)	55
Depth of the penetration (mm)	71~75
Overall outer diameter of the penetration (mm)	60 to 115
Packing space (mm)	30 x 30 ~ 120 x 120
Max. cable diameter (mm)	47
Filling ratio	0 ~ 19.3%
Classification	A-0 to A-60

1.1.3 - SL A sleeves (for bolted mounting)

Division	Bulkhead	Deck
Penetration sizes	R50 to R100	
Length of sleeve (mm)	55	
Depth of the penetration (mm)	71~75	
Overall outer diameter of the penetration (mm)	60 to 115	
Packing space (mm)	30 x 30 ~ 60 x 60	
Max. cable diameter (mm)	47	50
Filling ratio	0 ~ 48.2%	0 ~ 54.4%
Classification	A-0 to A-60	

1.1.4 - SL X sleeves (R X kit)

Division	Bulkhead	Deck
Penetration sizes	R70 to R200	R75 to R200
Length of sleeve (mm)	55	
Depth of the penetration (mm)	71~75	
Overall outer diameter of the penetration (mm)	85 to 215	
Packing space (mm)	40 x 40 ~ 120 x 120	
Max. cable diameter (mm)	67	83
Filling ratio	0 ~ 28.3%	0 ~ 37.6%
Classification	A-0 to A-60	

1.2 - A-Class Single-Pipe and Multi-Pipe sealing system with multidiameter technology, R series frames

Consisting of Roxtec R-series frames (standard, EMC or Ex), filled with Roxtec RM modules (standard, Ex or EMC, PE, ES, BG, BGB), mounted in sleeves that are welded or bolted (depending on the type of sleeve/pipe) or for steel pipes only, attached through expansion (RX kit) onto steel divisions.

Additional insulation on penetrations and/or cables:

- 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 §2.1 & §2.2) and also according to Manufacturer's insulation guidelines.

1.2.1 - Standard and extended length (400 mm) SL R sleeves (for welded mounting)

Pipe	Steel		Cu/CuNi	
Division	Bulkhead/Deck	Deck	Bulkhead	Deck
Penetration sizes	R50 to R200		R50 to R200	
Length of sleeve (mm)	55	400	55	
Depth of the penetration (mm)	71~75		71~75	
Overall outer diameter of the penetration (mm)	60 to 215		60 to 215	
Packing space (mm)	30 x 30 ~ 120 x 120		30 x 30 ~ 120 x 120	
Pipe outer diameter (mm)	6-95	6-54	6-54	
Classification	A-0 to A-60		A-0 to A-60	

1.2.2 - SLF R sleeves (for bolted mounting)

Pipe	Steel or Cu/CuNi
Division	Deck
Penetration sizes	R50 to R200
Length of sleeve (mm)	55
Depth of the penetration (mm)	71~75
Overall outer diameter of the penetration (mm)	60 to 215
Packing space (mm)	30 x 30 ~ 120 x 120
Pipe outer diameter (mm)	6-54
Classification	A-0 to A-60

1.2.3 - SL X sleeves (RX kit)

Pipe	Steel
Division	Bulkhead/Deck
Penetration sizes	R70 to R200
Length of sleeve (mm)	55
Depth of the penetration (mm)	71
Overall outer diameter of the penetration (mm)	85 to 215
Packing space (mm)	40 x 40 ~ 120 x 120
Pipe outer diameter (mm)	6-54 (bulkhead) 6-95 (deck)
Classification	A-0 to A-60

2. DOCUMENTS AND DRAWINGS:**2.1 - A-Class Single-Cable and Multi-Cable Sealing System**

As per the Manufacturer's installation/insulation drawings:

2.1.1 - Standard SL R/SLF R and extended SL R sleeves:

- "R-frames with cables - A-60 steel deck/blkhd": N° S1585348 Rev.A dated 07/11/2022
- "R-frames with cables - A-15 & A-30 steel deck/blkhd": N° S1552370 Rev.A dated 13/02/2020
- "R-frames with cables - A-0 steel deck/blkhd": N° S1585555 Rev.A dated 07/11/2022
- "R-frames with cables and extended sleeves - A-60 steel deck": N° S1586603 Rev.A dated 02/12/2022
- "R-frames with cables and extended sleeves - A-0 steel deck": N° S1586604 Rev.A dated 02/12/2022

2.1.2 - SL A sleeves:

- "SL A sleeve with R-frames and cables - A-60 steel blkhd/deck": N° S1582396 Rev.A dated 22/08/2022
- "SL A sleeve with R-frames and cables - A-15 & A-30 steel blkhd/deck": N° S1523902 Rev.A dated 15/06/2017
- "SL A sleeve with R-frames and cables - A-0 steel blkhd/deck": N° S1582399 Rev.A dated 22/08/2022

2.1.3 - SL X sleeves (R X kit):

- "RX, R-frames with SLX sleeves and cables - A-60 steel deck/blkhd": N° S1552146 Rev.A dated 13/02/2020
- "RX, R-frames with SLX sleeves and cables - A-15 & A-30 steel deck/blkhd": N° S1552154 Rev.A dated 13/02/2020
- "RX, R-frames with SLX sleeves and cables - A-0 steel deck/blkhd": N° S1552147 Rev.A dated 13/02/2020

2.2 - A-Class Single-Pipe and Multi-Pipe Sealing System

As per the Manufacturer's installation/insulation drawings:

2.2.1 - Standard SL R/SLF R and extended SL R sleeves:

- "R-frames with steel pipes - A-60 steel deck/blkhd": N° S1582060 Rev.A dated 22/08/2022
- "R-frames with steel pipes - A-0 steel blkhd": N° S1582064 Rev.A dated 06/02/2023
- "R-frames with steel pipes - A-0 steel deck": N° S1582061 Rev.A dated 09/08/2022
- "R-frames with steel pipes and extended sleeves - A-0 steel deck": N° S1582067 Rev.A dated 09/08/2022
- "R-frames with steel pipes and extended sleeves - A-60 steel deck": N° S1582065 Rev.A dated 09/08/2022
- "R-frames with copper pipes - A-0 steel deck/blkhd": N° S1582063 Rev.A dated 09/08/2022
- "R-frames with copper pipes - A-60 steel deck/blkhd": N° S1582062 Rev.A dated 09/08/2022

2.2.2 - SL X sleeve (R X kit):

- "RX, R-frames with steel pipes and SLX sleeves - A-60 steel deck/blkhd": N° S1582059 Rev.A dated 28/10/2022
- "RX, R-frames with steel pipes and SLX sleeves - A-0 steel deck/blkhd": N° S1582066 Rev.A dated 28/10/2022

3. TEST REPORTS:**3.1 - A-Class Single-Cable and Multi-Cable Sealing System****3.1.1 - Standard and extended length (400 mm)* SL R sleeves**

Laboratory	Test report	Date	Division	Fire rating	Test standard
CTO, Poland	N° RS-18/B-485/E	10/12/2018	Bulkhead	A-60	IMO 2010 FTP Code, Annex 1, Part 3
CTO, Poland	N° RS-22/B-336/E	28/10/2022	Bulkhead	A-60	
CTO, Poland	N° RS-22/B-338/E	28/10/2022	Bulkhead	A-60	
RISE, Sweden	N° 8P07094 rev 1	16/01/2020	Bulkhead	A-0	
DBI, Denmark	N° PGA10724A	05/02/2016	Bulkhead	A-0	
CTO, Poland	N° RS-22/B-153/E	04/05/2022	Deck	A-60	
DBI, Denmark	N° PGB10172A	17/06/2022	Deck	A-60	
DBI, Denmark	N° PGB10174A*	13/07/2022	Deck	A-60	
DBI, Denmark	N° PGA10723A	04/02/2016	Deck	A-0	

3.1.2 - SLF R sleeves

Laboratory	Test report	Date	Division	Fire rating	Test standard
DBI, Denmark	N° PGB10177A	04/11/2022	Deck	A-60	IMO 2010 FTP Code, Annex 1, Part 3

3.1.3 - SL A sleeves

Laboratory	Test report	Date	Division	Fire rating	Test standard
CTO, Poland	N° RS-21/B-518/E	15/12/2021	Bulkhead	A-60	IMO 2010 FTP Code, Annex 1, Part 3
CTO, Poland	N° RS-22/B-152/E	04/05/2022	Bulkhead	A-60	
DBI, Denmark	N° PGA10800A	26/05/2016	Deck	A-60	
DBI, Denmark	N° PGA10871A	17/11/2016	Deck	A-60	

3.1.4 - SL X sleeves (RX kit)

Laboratory	Test report	Date	Division	Fire rating	Test standard
CTO, Poland	N° RS-18/B-485/E	10/12/2018	Bulkhead	A-60	IMO 2010 FTP Code, Annex 1, Part 3
CTO, Poland	N° RS-19/B-255/E	20/08/2019	Bulkhead	A-60	
SP, Sweden	N° 7P02167	07/08/2017	Deck	A-60	

3.2 - A-Class Single-Pipe and Multi-Pipe Sealing System**3.2.1 – Standard and extended length (400 mm)* SL R sleeves – Steel pipes**

Laboratory	Test report	Date	Division	Fire rating	Test standard
CTO, Poland	N° RS-18/B-485/E	10/12/2018	Bulkhead	A-60	IMO 2010 FTP Code, Annex 1, Part 3
CTO, Poland	N° RS-22/B-336/E	28/10/2022	Bulkhead	A-60	
CTO, Poland	N° RS-22/B-338/E	28/10/2022	Bulkhead	A-60	
RISE, Sweden	N° 8P07094 rev 1	16/01/2020	Bulkhead	A-0	
DBI, Denmark	N° PGA10724A	05/02/2016	Bulkhead	A-0	
CTO, Poland	N° RS-22/B-153/E	04/05/2022	Deck	A-60	
DBI, Denmark	N° PGB10172A	17/06/2022	Deck	A-60	
DBI, Denmark	N° PGB10174A*	13/07/2022	Deck	A-60	
DBI, Denmark	N° PGA10723A	04/02/2016	Deck	A-0	

3.2.2 - Standard SL R sleeves – Copper pipes

Laboratory	Test report	Date	Division	Fire rating	Test standard
DBI, Denmark	N° PGA10724A	05/02/2016	Bulkhead	A-0	IMO 2010 FTP Code, Annex 1, Part 3
DBI, Denmark	N° PGB10046A	16/11/2020	Bulkhead	A-60	
DBI, Denmark	N° PGB10176A	04/11/2022	Bulkhead	A-60	
DBI, Denmark	N° PGA10723A	04/02/2016	Deck	A-0	
SP, Sweden	N° 6P07563	20/12/2016	Deck	A-60	
DBI, Denmark	N° PBG10118A	15/11/2021	Deck	A-60	

3.2.3 - SLF R sleeves - Copper pipes

Laboratory	Test report	Date	Division	Fire rating	Test standard
DBI, Denmark	N° PBG10118A	15/11/2021	Deck	A-60	IMO 2010 FTP Code, Annex 1, Part 3

3.2.4 - SL X sleeves (R X kit) – Steel pipes

Laboratory	Test report	Date	Division	Fire rating	Test standard
SP, Sweden	N° 8P04039	06/08/2018	Bulkhead	A-60	IMO 2010 FTP Code, Annex 1, Part 3
SP, Sweden	N° 8P04040	13/08/2018	Deck	A-60	
CTO, Poland	N° RS-19/B-225/E	01/08/2019	Deck	A-60	

3.3 - A-Class Blank Sealing System

Laboratory	Test report	Date	Division	Fire rating	Test standard
CTO, Poland	N° RS-22/B-338/E	15/09/2022	Bulkhead	A-60	IMO 2010 FTP Code, Annex 1, Part 3
CTO, Poland	N° RS-22/B-153/E	08/04/2022	Deck	A-60	
SP, Sweden	N° 6P10022	31/01/2017	Deck	A-60	

4. APPLICATION / LIMITATION:

4.1 – Cable penetrations : approved for use as a blank, single or multi cable transits in A-0, A-15, A-30 and A-60 class steel divisions, with limitations contained in §1.

4.2 – For cable penetrations, filling ratio not to exceed the tested one (see §1).

4.3 – Pipe penetrations : approved for use as a blank, single or multiple pipe penetration systems in A-0, A-15, A-30 and A-60 steel divisions, with limitations contained in §1.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The **A-class single-cable/pipe and multi-cables/pipes sealing systems** 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 - This Certificate supersedes the Type Approval Certificate N° 13965/D0 BV issued on 30/03/2020 by the Society.

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

- report N° MLM 020408 dated 30/06/2002, from DNV, Sweden.
- report N° MLM 30473-1 dated 27/01/2003, from DNV, Norway.
- report N° DNV40007647-1 dated 13/12/2011, from DNV, Norway.
- report N° N141EX8Z Rev.2 dated 10/08/2017, from DNVGL, Sweden.
- report N° N1429Y4V dated 21/03/2022, from DNVGL, Sweden.

	Watertightness test (before fire exposure)	Gastightness test (before fire exposure)
Welded SL and SLF sleeves (sizes 50-200 / cables only)	6 bar during 60 min	4 bar during 30 min
Welded SL (sizes 50-200 / cables&pipes)	6 bar during 60 min	3 bar during 30 min
Bolted SLF sleeves (sizes 50-200 / cables only)	5 bar during 60 min	2.5 bar during 30 min
Bolted SLA sleeves (sizes 50-100 / cables only)	4 bar during 60 min	1.5 bar during 30 min

***** END OF CERTIFICATE *****