



Marine &amp; Offshore

**Certificate number:** 12509/D0 BV  
**File number:** ACI 4000/032/005 and 008  
**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**  
 RS series seals cable and pipe penetrations in A-Class Divisions

**Requirements:**

SOLAS 74, as amended, Regulations II-2/9.7.1.2  
 Bureau Veritas Rules for the Classification of Steel Ships Part C Chapter 4  
 IMO Res MSC.307(88) (2010 FTP Code)  
 IMO Res. MSC.61(67)-(FTP Code) with IMO Res MSC.307(88) (2010 FTP Code) article 8

*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: 26 Feb 2023**

**For Bureau Veritas Marine & Offshore,**  
 At BV GOTHENBURG, on 29 Jun 2018,  
 Magne MOLLER



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 5 page(s)

## THE SCHEDULE OF APPROVAL

### 1. PRODUCT DESCRIPTION:

#### **RS series seals cable and pipe penetrations in A-Class Divisions**

"Roxtec cable and pipe sealing system with multidiameter technology, RS, RS OMD, RS OC, RS PPS and RS PPS/S series" are composed of steel sleeves with RS, RS OMD, RS OC, RS PPS or RS PPS/S type (Ex and EMC, PE, ES, BG, BGB versions include) halogen free rubber sealing, welded, bolted (incl. SL A) or attached through expansion (RS X) onto the steel deck or steel bulkhead.

**RS and RS OMD sealing systems with welded or bolted sleeves (SL, SLF and SLFO/RI) are approved for the following services:**

Service	Outer diameter (mm)	Seal size range	A-60 class (details of insulation)	A-0 class (details of insulation)
Cable	Deck: up to 82 Blkhd: up to 102	Deck: 23-125 Blkhd: 23-150	S1526991 rev A (deck & blkhd)	S1527437 rev A (deck & blkhd)
Steel pipe	Deck: up to 558 Blkhd: up to 558	Deck: 23-644 Blkhd: 23-644	S1527114 rev A (deck & blkhd)	S1527448 rev A (deck & blkhd)
CuNi 90:10 pipe	Deck: up to 270 Blkhd: up to 270	Deck: 25-350 Blkhd: 25-350	S1527380 rev A (deck) S1527374 rev A (blkhd)	S1527373 rev A (deck) S1527383 rev A (blkhd)
Copper Pipe	Deck: up to 225 Blkhd: up to 108	Deck: 23-300 Blkhd: 23-150	S1527108 rev A (deck & blkhd)	S1527070 rev A (deck & blkhd)
FGC pipe (GRE/GRP)	Deck: up to 360 Blkhd: up to 89	Deck: 68-450 Blkhd: 68-125	S1527082 rev A (deck & blkhd)	S1527446 rev A (deck & blkhd)
GRE FR pipe	Deck: up to 375 Blkhd: up to 375	Deck: 100-450 Blkhd: 100-450	S1527370 rev A (blkhd)	S1527371 rev A (deck & blkhd)
Bundle pipes	Deck: up to 50 Blkhd: up to 50	Deck: 31-100 Blkhd: 31-100	S1527051 rev A (deck & blkhd)	S1527436 rev A (deck & blkhd)

**RS OC (Off Centre) with welded or bolted sleeves (SL, SLF and SLFO/RI) is approved for the following services:**

Service	Outer diameter (mm)	Seal size range	A-60 class (details of insulation)	A-0 class (details of insulation)
Steel pipe	Deck: up to 273 Blkhd: up to 10	Deck: 75-400 Blkhd: 75	S1527542 rev A (deck & blkhd)	S1527549 rev A (deck & blkhd)

**RS SLA sleeve is approved for the following services:**

Service	Outer diameter (mm)	Seal size range	A-60 class (details of insulation)	A-0 class (details of insulation)
Cable	Deck: up to 32 Blkhd: up to 32	Deck: 25-75 Blkhd: 25-75	S1527399 rev A (deck & blkhd)	S1527400 rev A (deck & blkhd)
Steel pipe	Deck: up to 34 Blkhd: -	Deck: 25-75 Blkhd: -	S1527405 rev A (deck)	S1527406 rev A (deck)
Copper/ CuNi pipe	Deck: up to 34 Blkhd: -	Deck: 25-75 Blkhd: -	S1527424 rev A (deck)	S1527425 rev A (deck)

**RS X (RS with SLX sleeve) is approved for the following services:**

Service	Outer diameter (mm)	Seal size range	A-60 class (details of insulation)	A-0 class (details of insulation)
Cable	Deck: up to 168 Blkhd: up to 168	Deck: 25-200 Blkhd: 25-200	S1527454 rev A (deck & blkhd)	S1527457 rev A (deck & blkhd)
Steel pipe	Deck: up to 168 Blkhd: up to 168	Deck: 25-200 Blkhd: 25-200	S1527435 rev A (deck & blkhd)	S1527452 rev A (deck & blkhd)

**RS PPS/S sealing system with welded or bolted sleeves (SL, SLF and SLFO/RI) is approved for the following service:**

Service	Outer diameter (mm)	Seal size range	A-60 class (details of insulation)	A-0 class (details of insulation)
Thermoplastic pipes	Deck: up to 110 Blkhd: up to 110	Deck: 31-150 Blkhd: 31-150	S1527045 rev A (deck & blkhd)	S1527462 rev A (deck & blkhd)
PE/ALU/PE pipes	Deck: up to 63 Blkhd: up to 63	Deck: 31-100 Blkhd: 31-100	S1527619 rev A (deck & blkhd)	S1527623 rev A (deck & blkhd)

**RS PPS sealing system with welded or bolted sleeves (SLPPS, SLFPPS) is approved for the following service:**

Service	Outer diameter (mm)	Seal size range	A-60 class (details of insulation)	A-0 class (details of insulation)
Thermoplastic pipes	Deck: up to 315 Blkhd: up to 315	Deck: 31-400 Blkhd: 31-400	S1527468 rev A (deck & blkhd)	S1527469 rev A (deck & blkhd)
PE/ALU/PE pipes	Deck: up to 110 Blkhd: up to 110	Deck: 31-150 Blkhd: 31-150	S1527534 rev A (deck & blkhd)	S1527539 rev A (deck & blkhd)

**2. DOCUMENTS AND DRAWINGS:**

Insulation Drawings No. S1526991 rev A, S1527437 rev A, S1527114 rev A, S1527448 rev A, S1527380 rev A, S1527374 rev A, S1527373 rev A, S1527383 rev A, S1527108 rev A, S1527070 rev A, S1527082 rev A, S1527446 rev A, S1527370 rev A, S1527371 rev A, S1527051 rev A, S1527436 rev A, S1527542 rev A, S1527549 rev A, S1527399 rev A, S1527400 rev A, S1527405 rev A, S1527406 rev A, S1527424 rev A, S1527425 rev A, S1527454 rev A, S1527457 rev A, S1527435 rev A, S1527452 rev A, S1527045 rev A, S1527462 rev A, S1527619 rev A, S1527623 rev A, S1527468 rev A, S1527469 rev A, S1527534 rev A, S1527539 rev A.

Assembly drawings No. S1007491 RevB, S1005507 Rev D, S1007536 Rev B and S1005510 Rev E

**3. TEST REPORTS:****3.1 - Fire test reports****Bulkhead:**

Laboratory	Report	Dated	Fire Rating	As per
SINTEF, Norway	103070.25A	February 27, 2003	A-0	IMO Resolution A.754(18)
SINTEF, Norway	103070.29A	October 16, 2003	A-60	IMO Resolution A.754(18)
SP, Sweden	P502921	November 10, 2005	A-60	IMO Resolution A.754(18)
SP, Sweden	P600993	March 24, 2006	A-60	IMO Resolution A.754(18)
SP, Sweden	P602999	October 25, 2006	A-60	IMO Resolution A.754(18)
SP, Sweden	P605253	January 22, 2007	A-60	IMO Resolution A.754(18)
RIME, Japan	09-345E	February 24, 2009	A-60	IMO Resolution A.754(18)
SP, Sweden	P902394	May 4, 2009	A-60	IMO Resolution A.754(18)
SP, Sweden	PX05454	September 30, 2010	A-60	IMO Resolution A.754(18)
SP, Sweden	4P06068	November 26, 2014	A-60	IMO Res MSC.307(88) (2010 FTP Code)
DBI, Denmark	PGA10650	March 20, 2015	A-60	IMO Res MSC.307(88) (2010 FTP Code)
SP, Sweden	4P08662	May 8, 2015	A-60	IMO Res MSC.307(88) (2010 FTP Code)
DBI, Denmark	PGA10652	June 15, 2015	A-0	IMO Res MSC.307(88) (2010 FTP Code)
SP, Sweden	6P04351	June 15, 2016	A-60	IMO Res MSC.307(88) (2010 FTP Code)
DBI, Denmark	PGA10870A	November 1, 2016	A-60	IMO Res MSC.307(88) (2010 FTP Code)
SP, Sweden	6P10024	January 31, 2017	A-60	IMO Res MSC.307(88) (2010 FTP Code)
SP, Sweden	7P02024	May 16, 2017	A-60	IMO Res MSC.307(88) (2010 FTP Code)
CTO	RS-17/B-396/E	October 31, 2017	A-60	IMO Res MSC.307(88) (2010 FTP Code)

**Deck:**

Laboratory	Report	Dated	Fire Rating	As per
SINTEF, Norway	103070.25B	February 27, 2003	A-0	IMO Resolution A.754(18)
SINTEF, Norway	103070.27B	June 12, 2003	A-60	IMO Resolution A.754(18)
SINTEF, Norway	103070.29B	October 16, 2003	A-60	IMO Resolution A.754(18)
SP, Sweden	P502922	November 10, 2005	A-60	IMO Resolution A.754(18)
SP, Sweden	P603000	October 25, 2006	A-60	IMO Resolution A.754(18)
SP, Sweden	P701755	May 28, 2007	A-60	IMO Resolution A.754(18)
RIME, Japan	09-346E	February 27, 2009	A-60	IMO Resolution A.754(18)
DBI, Denmark	PGA10025	October 24, 2011	A-60	IMO Resolution A.754(18)
DBI, Denmark	PGA10141	June 29, 2012	A-60	IMO Res MSC.307(88) (2010 FTP Code)
SP, Sweden	4P07023	January 22, 2015	A-60	IMO Res MSC.307(88) (2010 FTP Code)
DBI, Denmark	PGA10649	March 8, 2015	A-60	IMO Res MSC.307(88) (2010 FTP Code)
DBI, Denmark	PGA10651	June 15, 2015	A-0	IMO Res MSC.307(88) (2010 FTP Code)
SP, Sweden	5P03457	October 15, 2015	A-60	IMO Res MSC.307(88) (2010 FTP Code)
DBI, Denmark	PGA10723A	December 15, 2015	A-0	IMO Res MSC.307(88) (2010 FTP Code)
DBI, Denmark	PGA10800A	April 18, 2016	A-60	IMO Res MSC.307(88) (2010 FTP Code)
SP, Sweden	6P02249	May 17, 2016	A-60	IMO Res MSC.307(88) (2010 FTP Code)
DBI, Denmark	PGA10871A	October 31, 2016	A-60	IMO Res MSC.307(88) (2010 FTP Code)
SP, Sweden	7P02167	June 19, 2017	A-60	IMO Res MSC.307(88) (2010 FTP Code)

**4. APPLICATION / LIMITATION:**

4.1 - Approval valid for use in A-0, A-15, A-30 and A-60 class divisions.

4.2 - The fitting aboard to be the same as used for the test.

4.3 - The insulation material shall be type approved. The fire tests were conducted with various types of insulation materials; alternative ones (duly type approved) may be used provided their insulation performance are equivalent/appropriate.

**5. PRODUCTION SURVEY REQUIREMENTS:**

5.1 - The "**RS series seals**" 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.

5.4. For information concerning the production phase modules, **ROXTEC International AB** has declared the following manufacturing site(s):

**ROXTEC International AB**  
**BOX 540**  
**371 23 KARLSKRONA**  
**SWEDEN**

**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°12509/C1 BV issued on 22/09/2016 by Bureau Veritas.

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

Product	Class	Report	Dated
SL A	DNV-GL	N141EX8Z	August 10, 2017
SLFO/RI	DNV	MLM090673	October 8, 2009
RS PPS	DNV	MLM060511, MLM070656	February 28, 2006 April 18, 2007
SLX	DNV	MLM030473-1	January 27, 2003
Bolted sleeve	DNV	MLM020401	March 25, 2002

Outcomes of those inspection reports are the following:

Product	Test pressure water tightness	Test pressure gas tightness
RS series seals	6 bar	3 bar
Welded SL, SLF, SLPPS, SLFPPS sleeve	6 bar	3 bar
SLX sleeve	6 bar	3 bar
Bolted SLF, SLFPPS sleeve	5 bar	2.5 bar
SL A sleeve	4 bar	1.5 bar
SLFO/RI sleeve	2 bar	1 bar

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