



TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB000036A
Revision No:
0

This Certificate is issued by DNV UK Limited based on authorisation of the Maritime & Coast Guard Agency (MCA) as an UK Approved Body to undertake conformity assessments on marine equipment in accordance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016 as amended.

This is to certify:

That the Penetrations through "A" class divisions: pipe, duct, trunk, etc penetrations

with type designation(s)

Roxtec Sealing System with Multidiameter Technology: RS PPS and RS PPS/S series (steel)

Issued to

Roxtec International AB
Karlskrona, Sweden

is found to comply with the requirements in the following Regulations/Standards:

Regulation **MSN 1874 Amendment 6,**

item No. UK/3.26b. SOLAS 74 as amended, Regulation II-2/9, IMO MSC.1/Circ.1276, IMO 2010 FTP Code and IMO MSC.1/1488

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2026-01-18.**

Issued at **London** on **2022-11-30**

DNV local unit:
Sweden CMC



for **DNV UK Ltd.**

Approval Engineer:
Roland Priebe

Approved Body No.: **0097**

Christine Mydlak-Röder
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

The Mark of Conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an approved body. The product liability rests with the manufacturer or his representative in accordance with the Merchant Shipping (Marine Equipment) Regulations 2016.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV UK Ltd. of any changes to the approved equipment. Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply. This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Product description

“Roxtec sealing system with multidiameter technology: RS PPS and RS PPS/S series (steel)”

RS PPS 31-450

consisting of a steel sleeve, bolted or welded to a steel section. The sleeve is fitted at both ends with Roxtec RS seals (standard or EMC versions) including intumescent material in between.

RS PPS/S 31-150

consisting of bolted or welded steel sleeve, or SLX-type sleeve attached through expansion, on to the steel sections. The sleeve is only fitted with one single RS PPS/S seal with integrated intumescent material. Minimum thickness for steel sleeve is 1.5 mm.

Application/Limitation

Approved for use as single and multiple pipe penetration system in class A-0, A-15, A-30 and A-60 steel bulkheads and decks for approved plastic pipes as follows:

Table 1: Approved pipe penetration in A-60 steel bulkhead

Type	Size	Pipe material	Pipe diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Sleeve insulation
RS PPS	31 - 175	Thermoplastic*	16 - 125	156	4 - 7	Symmetric	S1553577 Rev. A No. 1
RS PPS	31 - 200	Thermoplastic*	16 - 170	156	4 - 7	Symmetric	S1553577 Rev. A No. 2
RS PPS	225 - 450	Thermoplastic*	151 - 355	400	4 - 7	Symmetric	S1553577 Rev. A No. 2
RS PPS	125 - 200	Pre-insulated thermoplastic	90 - 170	156	4 - 7	Symmetric	S1553577 Rev. A No. 3
RS PPS	225 - 400	Pre-insulated thermoplastic	151 - 315	400	4 - 7	Symmetric	S1553577 Rev. A No. 3
RS PPS	125	Pre-insulated plastic bundle	75	156	7	Symmetric	S1553577 Rev. A No. 4
RS PPS/S	31 - 150	Thermoplastic*	16 - 110	35 - 65	4 - 7	Symmetric	S1573861 Rev. A No. 1
RS PPS/S	31 - 100	PE/ALU/PE	16 - 63	35 - 65	4 - 7	Symmetric	S1573861 Rev. A No. 2
RS PPS/S	100 - 125	Pre-insulated plastic bundle	67 - 96	65	7	Symmetric	S1573861 Rev. A No. 11

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

Table 2: Approved pipe penetration in A-60 steel deck

Type	Size	Pipe material	Pipe diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Sleeve insulation
RS PPS	31 - 200	Thermoplastic*	16 - 170	156	4 - 7	Top	S1553577 Rev. A No. 5
RS PPS	225 - 450	Thermoplastic*	151 - 355	400	4 - 7	Top	S1553577 Rev. A No. 5
RS PPS	31 - 200	Thermoplastic*	16 - 170	156	4 - 7	Top, symmetric	S1553577 Rev. A No. 6
RS PPS	225 - 450	Thermoplastic*	151 - 355	400	4 - 7	Top, symmetric	S1553577 Rev. A No. 6
RS PPS	125 - 200	Pre-insulated thermoplastic	90 - 170	156	4 - 7	Top, symmetric	S1553577 Rev. A No. 7
RS PPS	225 - 400	Pre-insulated thermoplastic	151 - 315	400	4 - 7	Top, symmetric	S1553577 Rev. A No. 7
RS PPS	125	Pre-insulated plastic bundle	75	156	7	Any	S1553577 Rev. A No. 8
RS PPS	125	Pre-insulated plastic bundle	75 - 96	156	7	Top, symmetric	S1553577 Rev. A No. 9
RS PPS	31 - 150	PE/ALU/PE	16 - 110	156	4 - 7	Top	S1553577 Rev. A No. 10

RS PPS/S	31 - 150	Thermoplastic*	16 - 110	35 - 65	4 - 7	Any	S1573861 Rev. A No. 3+4
RS PPS/S	31 - 68	PE/ALU/PE	16 - 32	35 - 65	4 - 7	Any	S1573861 Rev. A No. 5
RS PPS/S	31 - 125	PE/ALU/PE	16 - 75	35 - 65	4 - 7	Top, symmetric	S1573861 Rev. A No. 6
RS PPS/S	31 - 125	PE/ALU/PE w/ thermal insulation	16 - 75	35 - 65	4 - 7	Top, symmetric	S1573861 Rev. A No. 7
RS PPS/S	68 - 100	Plastic bundle	36 - 60	65	4 - 7	Top, symmetric	S1573861 Rev. A No. 8
RS PPS/S	100 - 125	Pre-insulated plastic bundle	67 - 96	65	7	Top, symmetric	S1573861 Rev. A No. 9
RS PPS/S	125 - 150	Pre-insulated thermoplastic	75 - 110	65	7	Top, symmetric	S1573861 Rev. A No. 10

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

Table 3: Approved pipe penetration in A-0 steel bulkhead

Type	Size	Pipe material	Pipe diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Sleeve insulation
RS PPS	31 - 175	Thermoplastic*	16 - 125	156	4 - 7	Symmetric	S1553578 Rev. A No. 1
RS PPS	68 - 150	Thermoplastic*	32 - 110	156	4 - 7	Symmetric	S1553578 Rev. A No. 2
RS PPS	68 - 150	Thermoplastic*	32 - 110	400	4 - 7	Symmetric	S1553578 Rev. A No. 2
RS PPS	31 - 200	Thermoplastic*	16 - 170	156	4 - 7	Symmetric	S1553578 Rev. A No. 3
RS PPS	225 - 450	Thermoplastic*	151 - 355	400	4 - 7	Symmetric	S1553578 Rev. A No. 3
RS PPS	125 - 200	Pre-insulated thermoplastic	90 - 170	156	4 - 7	Symmetric	S1553578 Rev. A No. 4
RS PPS	225 - 400	Pre-insulated thermoplastic	151 - 315	400	4 - 7	Symmetric	S1553578 Rev. A No. 4
RS PPS	125	Pre-insulated plastic bundle	75	156	7	Symmetric	S1553578 Rev. A No. 5
RS PPS	31 - 68	PE/ALU/PE	16 - 32	156	4 - 7	Symmetric	S1553578 Rev. A No. 6
RS PPS/S	31 - 100	Thermoplastic*	16 - 63	35 - 65	4 - 7	Symmetric	S1573859 Rev. A No. 1
RS PPS/S	31 - 150	Thermoplastic*	16 - 110	35 - 65	4 - 7	Symmetric	S1573859 Rev. A No. 2
RS PPS/S	31 - 100	PE/ALU/PE	16 - 63	35 - 65	4 - 7	Symmetric	S1573859 Rev. A No. 3
RS PPS/S	100 - 125	Pre-insulated plastic bundle	67 - 96	65	7	Symmetric	S1573859 Rev. A No. 12

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

Table 4: Approved pipe penetration in A-0 steel deck

Type	Size	Pipe material	Pipe diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Sleeve insulation
RS PPS	31 - 200	Thermoplastic*	16 - 170	156	4 - 7	Top	S1553578 Rev. A No. 7
RS PPS	225 - 450	Thermoplastic*	151 - 355	400	4 - 7	Top	S1553578 Rev. A No. 7
RS PPS	31 - 200	Thermoplastic*	16 - 170	156	4 - 7	Top, symmetric	S1553578 Rev. A No. 8
RS PPS	225 - 450	Thermoplastic*	151 - 355	400	4 - 7	Top, symmetric	S1553578 Rev. A No. 8
RS PPS	125 - 200	Pre-insulated thermoplastic	90 - 170	156	4 - 7	Top, symmetric	S1553578 Rev. A No. 9

RS PPS	225 - 400	Pre-insulated thermoplastic	151 - 315	400	4 - 7	Top, symmetric	S1553578 Rev. A No. 9
RS PPS	125	Pre-insulated plastic bundle	75 - 96	156	7	Top, symmetric	S1553578 Rev. A No. 10
RS PPS	125	Pre-insulated plastic bundle	75	156	7	Any	S1553578 Rev. A No. 11
RS PPS	31 - 68	PE/ALU/PE	16 - 32	156	4 - 7	Symmetric	S1553578 Rev. A No. 12
RS PPS	31 - 150	PE/ALU/PE	16 - 110	156	4 - 7	Top	S1553578 Rev. A No. 13
RS PPS/S	31 - 150	Thermoplastic*	16 - 110	35 - 65	4 - 7	Any	S1573859 Rev. A No. 4+5
RS PPS/S	31 - 68	PE/ALU/PE	16 - 32	35 - 65	4 - 7	Any	S1573859 Rev. A No. 6
RS PPS/S	31 - 125	PE/ALU/PE	16 - 75	35 - 65	4 - 7	Top, symmetric	S1573859 Rev. A No. 7
RS PPS/S	31 - 125	PE/ALU/PE w/ thermal insulation	16 - 75	35 - 65	4 - 7	Top, symmetric	S1573859 Rev. A No. 8
RS PPS/S	68 - 100	Plastic bundle	36 - 60	65	4 - 7	Top, symmetric	S1573859 Rev. A No. 9
RS PPS/S	100 - 125	Pre-insulated plastic bundle	67 - 96	65	7	Top, symmetric	S1573859 Rev. A No. 10
RS PPS/S	125 - 150	Pre-insulated thermoplastic	75 - 110	65	7	Top, symmetric	S1573859 Rev. A No. 11

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

See insulation drawing specified in the Type Examination Documentation. Deck or bulkhead to be insulated with approved A-60 insulation covering the edge of the steel frame.

The plastic pipe penetrations are not approved for use in watertight bulkheads on passenger ships and special purpose ships (SPS).

The penetration system shall not be used for penetrating boundaries of tanks.

The insulation material used has to be approved according to the UK Marine Equipment Regulation and bear the Mark of Conformity.

Each product is to be supplied with its manual for installation and maintenance.

Type Examination documentation

Test Report No. P701755 dated 12 June 2007 from SP, Borås, Sweden.
 Test Report No. 10608 dated 22 November 2007 from Roxtec, Karlskrona, Sweden.
 Test Report No. P902394 dated 25 May 2009 from SP, Borås, Sweden.
 Test Report No. PGA10025 dated 22 December 2011 from DBI, Hvidovre, Denmark.
 Test Report No. PGA10141 dated 10 July 2012 from DBI, Hvidovre, Denmark.
 Test Report No. 6P10024 dated 7 March 2017 from SP, Borås, Sweden.
 Test Report No. RS-18/B-023/E dated 29 January 2018 from CTO, Gdansk, Poland.
 Test Report No. 8P04040 dated 13 August 2018 from SP, Borås, Sweden.
 Test Report No. RS-18/B-291/E dated 20 August 2018 from CTO, Gdansk, Poland.
 Test Report No. RS-18/B-292/E dated 13 September 2018 from CTO, Gdansk, Poland.
 Test Report No. RS-18/B-293/E dated 13 September 2018 from CTO, Gdansk, Poland.
 Test Report No. RS-18/B-484/E dated 10 December 2018 from CTO, Gdansk, Poland.
 Test Report No. PGA11302A dated 16 January 2019 from DBI, Hvidovre, Denmark.
 Test Report No. RS-19/B-256/E dated 20 September 2019 from CTO, Gdansk, Poland.
 Test Report No. RS-19/B-356/E dated 10 October 2019 from CTO, Gdansk, Poland.
 Test Report No. RS-19/B-424/E dated 27 November 2019 from CTO, Gdansk, Poland.
 Test Report No. 8P07094 dated 16 January 2020 from SP, Borås, Sweden.
 Test Report No. RS-20/B-083/E dated 20 April 2020 from CTO, Gdansk, Poland.
 Test Report No. PGB10030A dated 26 June 2020 from DBI, Hvidovre, Denmark.

Third part inspection report MLM070717 dated 22 November 2007 from DNV Malmö.



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Assessment No. 103201.89 dated 4 August 2004 from SINTEF, Trondheim, Norway.

Drawing No. S1553577 Rev. A dated 19 October 2020 from maker.
Drawing No. S1553578 Rev. A dated 13 March 2020 from maker.
Drawing No. S1573859 Rev. A dated 26 November 2021 from maker.
Drawing No. S1573861 Rev. A dated 24 November 2021 from maker.

Tests carried out

Tested according to IMO FTPC Part 3 and in compliance with IMO 2010 FTP Code Ch. 8, and in accordance with IMO 2010 FTP Code part 3.

Marking of product

The product or packing is to be marked with name and address of manufacturer, type designation, fire-technical rating and the Mark of Conformity (see first page).

APPENDIX

Additional application/information for watertightness/gastightness (Not part of the UK Marine Equipment Regulation requirement)

Product description

“Roxtec sealing system with multidiameter technology: RS PPS and RS PPS/S series (steel)”
consisting of a steel sleeve, bolted or welded to a steel section. Sleeve is fitted at both ends with Roxtec RS seals (standard or EMC versions) and filled with intumescent material.

For RS PPS/S 31-150, the sleeve is only fitted with one RS frame with integrated intumescent material.

Application/Limitation

RS PPS 31-450:

Approved for penetration in steel bulkheads or decks limited to a pressure of 4.00 bar watertightness and 2.67 bar gastightness for thermoplastic and PE/ALU/PE pipes and pressure of 2.00 bar watertightness and 1.00 bar gastightness for pre-insulated thermoplastic pipes.

RS PPS/S 31-150:

Approved for penetration in steel bulkheads or decks limited to a pressure of 4.00 bar watertightness and 2.00 bar gastightness for thermoplastic and PE/ALU/PE pipes and pressure of 2.00 bar watertightness and 1.00 bar gastightness for pre-insulated thermoplastic pipe.

For bolted versions with gasket and self-tapping screws, the pressure is limited to 3.33 bar watertightness and 1.67 bar gastightness.

The penetration system is not to be used for penetrating boundaries of tanks.

The pipe penetrations are not approved for use in watertight bulkheads on passenger ships and special purpose ships (SPS).

Type Approval documentation

Test Report No. SKM-04-4088 dated 16 June 2004 from DNV Stockholm.
Test Report No. MLM 060511 dated 28 February 2006 from DNV Malmö.
Test Report No. MLM 070656 dated 18 April 2007 from DNV Malmö.
Test Report No. N141ZEM0 dated 15 May 2020 from DNV GL Malmö.
Test Report No. N141ZEM1 dated 15 May 2020 from DNV GL Malmö.
Test Report No. N141ZEM2 dated 15 May 2020 from DNV GL Malmö.
Test Report No. N142299W, Rev.01 dated 9 November 2020 from DNV GL Malmö.

Tests carried out

Pressure tests with water and Helium according to DNV Type Approval Programme 8.471.19-1 and class programme DNV-CP-0165 Chapter 4, October 2017.