

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00000NX
Revision No:
4

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

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 (AL)

Issued to

Roxtec International AB
Karlskrona, Sweden

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

Regulation **(EU) 2020/1170,**

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

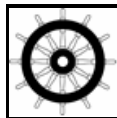
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2024-08-04.**

Issued at **Høvik** on **2020-12-04**

DNV GL local station:
Sweden CMC

Approval Engineer:
Helge Bjørnarå



Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body

A U.S. Coast Guard approval number will be assigned to the equipment when the production module has been completed and will appear on the production module certificate (module D, E or F), as allowed by the "Agreement between the United States of America and the EEA EFTA states on the mutual recognition of Certificates of Conformity for Marine Equipment" signed 17 October 2005, and amended by Decision No 1/2019 dated February 22nd, 2019.

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-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.

This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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 (AL)”

RS PPS 31-450:

consisting of an aluminium sleeve, bolted or welded to an aluminium 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 an aluminium sleeve, bolted or welded (including SLX-type sleeve) to an aluminium section. The sleeve is fitted in with Roxtec RS PPS/S seal (standard or EMC versions) with integrated intumescent material.

Application/Limitation

Approved for use as single plastic pipe penetration system in class A-0, A-15, A-30 and A-60 aluminium bulkhead and deck for approved thermoplastic pipes as follows:

Table 1: Approved pipe penetration in aluminium bulkhead

Type	Size	Pipe material	Pipe diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Sleeve insulation
RS PPS	31 - 200	Thermoplastic*	16 - 160	156	4 - 7	Symmetric	S1541191 Rev. A
RS PPS	225 - 450	Thermoplastic*	160 - 355	400	4 - 7	Symmetric	S1541191 Rev. A
RS PPS	31 - 150	PE/ALU/PE	16 - 110	156	4 - 7	Symmetric	S1541191 Rev. A
RS PPS/S	31 - 150	Thermoplastic*	16 - 110	35 - 65	4 - 7	See drawing	S1017153

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

Table 2: Approved pipe penetration in aluminium deck

Type	Size	Pipe material	Pipe diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Seal insulation
RS PPS	31 - 200	Thermoplastic*	16 - 160	156	4 - 7	Top and Symmetric	S1541191 Rev. A
RS PPS	225 - 450	Thermoplastic*	160 - 355	400	4 - 7	Top and Symmetric	S1541191 Rev. A
RS PPS	31 - 150	PE/ALU/PE	16 - 110	156	4 - 7	Top	S1541191 Rev. A
RS PPS/S	31 - 150	Thermoplastic*	16 - 110	35 - 65	4 - 7	See drawing	S1017153

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

Deck or bulkhead to be insulated with approved insulation according to classification covering the edge of the aluminium frame. See insulation drawing specified in the Type Approval Documentation. For fire class A-0, A-15 and A-30, the sleeve and pipes are to be insulated as for class A-60.

The 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 Marine Equipment Directive and bear the Mark of Conformity.

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

Job Id: **344.1-000153-97**
Certificate No: **MEDB00000NX**
Revision No: **4**

Type Examination documentation

Test Report No. 103070.33A dated 15 November 2004 from SINTEF, Trondheim, Norway.
Test Report No. P403634 dated 30 December 2004 from SP, Borås, Sweden.
Test Report No. PG11898 dated 17 April 2009 from DBI, Hvidovre, Denmark.
Test Report No. PG11955 dated 17 April 2009 from DBI, Hvidovre, Denmark.
Test Report No. PGA10801A dated 29 August 2016 from DBI, Hvidovre, Denmark.
Test Report No. PGA11370A dated 20 February 2019 from DBI, Hvidovre, Denmark.
Test Report No. PGA11371A dated 20 February 2019 from DBI, Hvidovre, Denmark.
Test Report No. RS-19/B-020/E dated 27 May 2019 from CTO, Gdansk, Poland.
Test Report No. RS-19/B-224/E dated 1 August 2019 from CTO, Gdansk, Poland.

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

Drawing No. S1017153 dated 30 April 2009 from maker.
Drawing No. S1541191 Rev. A dated 26 November 2019 from maker.

Tests carried out

Tested according to IMO FTPC Part 3 and in compliance with IMO 2010 FTP Code Ch. 8 or 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, MED Mark of Conformity and USCG approval number if applicable (Page 1).

Job Id: **344.1-000153-97**
Certificate No: **MEDB00000NX**
Revision No: **4**

APPENDIX

Additional application/information for Watertightness/gastightness (Not part of the Marine Equipment Directive requirement)

Product description

"Roxtec sealing system with multidiameter technology: RS PPS and RS PPS/S (AL)"

RS PPS 31-450:

consisting of an aluminium sleeve, bolted or welded to an aluminium 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 an aluminium sleeve, bolted or welded (including SLX-type sleeve) to an aluminium section. The sleeve is fitted in with Roxtec RS PPS/S seal (standard or EMC versions) with integrated intumescent material.

Application/Limitation

RS PPS 31-450:

Approved for penetration in aluminium bulkheads or decks limited to a pressure of 4.00 bar watertightness and 2.67 bar gastightness.

RS PPS/S 31-150:

Approved for penetration in aluminium bulkheads or decks limited to a pressure of 4.00 bar watertightness and 2.00 bar gastightness.

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. MLM 020106 dated 19 December 2001 from DNV Malmö.

Test report No. MLM 020133 dated 26 February 2002 from DNV Malmö.

Test report No. MLM 020401 dated 25 March 2002 from DNV Malmö.

Test report No. MLM 020408 dated 3 June 2002 from DNV Malmö.

Test report No. SKM-04-4088 dated 16 June 2004 from DNV Stockholm.

Test report No. MLM 070656 dated 18 April 2007 from DNV Malmö.

Test report No. N142299W 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 DNVGL-CP-0165 Chapter 4, October 2017.