

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB00005J9
Revision No:
1

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 , S-series (AL)

Issued to
Roxtec International AB
Karlskrona, Sweden

is found to comply with the requirements in the following Regulations/Standards:
Regulation **MSN 1874 Amendment 9,**
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 **2029-11-19.**

Issued at **London** on **2024-12-02**

DNV local unit:
Denmark CMC



for **DNV UK Ltd.**

Approval Engineer:
Karolina Kusmider

Approved Body No.: **0097**

Mydlak-Röder, Christine
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.
During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.
"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. In case limitations of use apply, these should be indicated in the Annex.

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: S-series (aluminum division)” consisting of Roxtec S-series aluminum frames (S, S Ex, SF, SR/T, SR/S, SRC r20, SRC r40, SRC r60) in height 1-8 and width 60-120, and combinations thereof, welded to the aluminum sections. The aluminum frame is filled with Roxtec halogen free RM modules*. Assembled with Roxtec Wedge (standard, Ex, ES, or ES Ex) and corresponding stay plates.

* RM modules come in the following versions: RM, RM Ex, RM FOC, RM ES, RM ES B, RM PE, RM PE B, RM BG, RM BG B, RM ES Ex, RM ES B Ex, RM PE Ex, RM ES B Ex, RM BG Ex, RM BG B Ex

For more details, see drawings listed under Type Examination documentation below.

Application/Limitation

Approved for use as a single or multiple pipe penetration system in class A-60 aluminum divisions. Other applications are subject to case-by case approval.

For A-0, A-15 and A-30 applications, the penetration shall be insulated as for A-60 and the division is to be fitted with A-60 insulation for a minimum distance of 200 mm around the penetration.

Table 1: Approved pipe penetration in A-60 aluminum bulkhead.

Frame type	Size	Pipe Material	Pipe diameter (OD) [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Penetration Insulation
S-series	1x1 – 8x2	Steel	8 – 54	60	10	Symmetric	Fully insulated with 250 mm along pipes on one side (S1610072 ID 1)
S-series	1x1 – 8x2	Steel	8 – 54	60	10	Symmetric	Fully insulated with 250 mm along pipes on both sides (S1610072 ID 2)
S-series	1x1 – 8x2	Copper	8 – 57	60	10	Symmetric	Fully insulated with 350 mm along pipes on one side (S1610072 ID 3)
S-series	1x1 – 8x2	Copper	8 – 57	60	10	Symmetric	Fully insulated with 350 mm along pipes on both sides (S1610072 ID 4)

Table 2: Approved pipe penetration in A-60 aluminum deck.

Frame type	Size	Pipe Material	Pipe diameter (OD) [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Penetration Insulation
S-series	1x1 – 8x2	Steel	6 – 54	60	10	Any	Fully insulated with 450 mm along pipes on the underside (S1602200 ID 1)
S-series	1x1 – 8+8x2	Steel	6 – 54	60	10	Symmetric Top side	Fully insulated ^{*)} with 350 mm along pipes on the underside (S1602200 ID 3)
S-series	1x1 – 8x2	Copper	8 – 54	60	10	Symmetric Top side	Fully insulated ^{*)} with 800 mm along pipes on the underside (S1602200 ID 2)
S-series	1x1 – 8+8x2	Bundle (Steel)	8 – 50	60	10	Symmetric Top side	Fully insulated ^{*)} with 350 mm along pipes on the underside (S1602200 ID 3)
S-series	1x1 – 8+8x2	Titanium	6 – 27	60	10	Symmetric Top side	Fully insulated ^{*)} with 350 mm along pipes on the underside (S1602200 ID 3)

*) No insulation between pipes.

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

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



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Type Examination documentation

Test report No. PG 11898 dated 17 April 2009 from DBI, Copenhagen Denmark.
Test report No. PG 11955 dated 17 April 2009 from DBI, Copenhagen Denmark.
Test report No. RS-22/B-426/E dated 2 January 2023 from CTO, Gdańsk, Poland.

Drawing No. S1610072 Rev. A dated 18 October 2024 from maker.
Drawing No. S1602200 Rev. D dated 18 October 2024 from maker.

Tests carried out

Tested according to 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, Mark of Conformity and USCG approval number if applicable (see first page).

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

Product description

"Roxtec sealing system with Multidiameter: S-series (aluminum division)"

consisting of Roxtec S-series aluminum frames (S, S Ex, SF, SR/T, SR/S, SRC r20, SRC r40, SRC r60) in height 1-8 and width 60-120, and combinations thereof, welded to the aluminum sections.

The aluminum frame is filled with Roxtec halogen free RM modules*. Assembled with Roxtec Wedge (standard, Ex, ES, or ES Ex) and corresponding stay plates.

* RM modules come in the following versions: RM, RM Ex, RM FOC, RM ES, RM ES B, RM PE, RM PE B, RM BG, RM BG B, RM ES Ex, RM ES B Ex, RM PE Ex, RM ES B Ex, RM BG Ex, RM BG B Ex

Application/Limitation

Approved for penetration in aluminium bulkheads or decks limited to a pressure of 4.0 bar watertightness and 2.67 bar gastightness for steel, titanium and copper pipes.

Approved for penetration in aluminium bulkheads or decks limited to a pressure of 4.0 bar watertightness and 2.0 bar gastightness for bundle pipes.

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

For SFOHK versions, the pressure is limited to 2.67 bar watertightness.

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

Type Approval documentation

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

Test report No. MLM 020400 dated 25 March 2002 from DNV Malmö.

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

Test report No. MLM050410 dated 20 May 2005 from DNV Malmö.

Test report No. N141CR4U, Rev.1 dated 23 March 2017 from maker witnessed by DNV GL.

Tests carried out

Pressure tests with water and Helium according to DNV Type Approval Programme 8.471.19-1.