



TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB00001MS
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: electric cable transits

with type designation(s)

Roxtec sealing system with multidiameter technology: R-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/3.26a. SOLAS 74 as amended, Regulation II-2/9, 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 **2025-02-13**.

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 This certificate remains valid unless suspended, withdrawn, re-called, or cancelled.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: R-series (steel)”
 consisting of a steel sleeve, bolted, welded or attached through expansion (R X) to a steel section. Sleeve is fitted with a Roxtec R frame (standard, Ex or EMC) in sizes 50-200. The R-frame is filled with Roxtec (standard, Ex or EMC) halogen free RM modules.

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

Application/Limitation

Approved for use as a single or multicable penetration system in class A-0 and A-60 steel bulkheads and decks for approved ship cables. Other applications are subject to case-by-case approval.

Class A-15 and A-30 shall be insulated as A-60 and in addition the division is to be insulated at least 200 mm around the penetration.

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

Type	Size	Max. cable Diameter [mm]	Sleeve Length [mm]	Sleeve Thickness [mm]	Sleeve position	Sleeve insulation
R	50 - 200	67	55	6	Any	S1571128, No. 2
R SLA	50 - 100	50	86 - 96	6	Either	S1571139, No. 3-5
R X	70 - 200	67	55	6	Insulated side	S1571823, No. 2

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

Type	Size	Max. cable Diameter [mm]	Sleeve Length [mm]	Sleeve Thickness [mm]	Sleeve position	Sleeve Insulation
R	50 - 200	67	55	6	Any	S1571128, No. 1
R SLA	50 - 100	50	86 - 96	6	Either	S1571139, No. 1-2
R X	75 - 200	83	55	6	Flange on top	S1571823, No. 1

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

Type	Size	Max. cable Diameter [mm]	Sleeve Length [mm]	Sleeve Thickness [mm]	Sleeve position	Sleeve Insulation
R	50 - 200	67	55	6	Any	S1571137, No. 1-2
R SLA	50 - 100	50	86 - 96	6	Either	S1571140, No. 4-6
R X	70 - 200	10	55	6	Insulated side	S1572074, No. 2

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

Type	Size	Max. cable Diameter [mm]	Sleeve Length [mm]	Sleeve Thickness [mm]	Sleeve position	Sleeve Insulation
R	50 - 200	39	55	6	Any	S1571137, No. 3
R SLA	50 - 100	50	86 - 96	6	Either	S1571140, No. 1-3
R X	75 - 200	83	55	6	Flange on top	S1572074, No. 1

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

All SL A sleeves shall be installed in accordance with Roxtec’s SL A Installation Instructions, including aperture dimensions and tolerances, tightening torque, etc.

Please note Installation instruction for Roxtec RX attached through expansion: Aperture irregularities are acceptable within min and max diameters. (Max Ø = Min Ø + 2mm).

Penetrations through structural divisions should not impair the structural strength of the division. Special consideration should be given to bulkheads and decks with high stress locations (IMO MSC.1/Circ.1488).

Each product shall 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. PGA10025 dated 22 December 2011 from DBI, Hvidovre, Denmark.

Test report No. 4P06068 dated 17 January 2015 from SP, Borås, Sweden.
Test report No. PGA10723A dated 4 February 2016 from DBI, Hvidovre, Denmark.
Test report No. PGA10724A dated 5 February 2016 from DBI, Hvidovre, Denmark.
Test report No. PGA10800A dated 26 May 2016 from DBI, Hvidovre, Denmark.
Test report No. 6P02249 dated 17 August 2016 from SP, Borås, Sweden.
Test report No. PGA10871A, Rev.2, dated 9 December 2016 from DBI, Hvidovre, Denmark.
Test report No. PGA10870A dated 13 December 2016 from DBI, Hvidovre, Denmark.
Test report No. 7P02167 dated 7 August 2017 from SP, Borås, Sweden.
Test report No. RS-18/B-484/E dated 10 December 2018 from CTO, Gdansk, Poland.
Test report No. RS-18/B-485/E dated 10 December 2018 from CTO, Gdansk, Poland.
Test report No. RS-18/B-255/E dated 20 August 2019 from CTO, Gdansk, Poland.
Test report No. 8P07092 dated 27 September 2019 from SP, Borås, Sweden.
Test report No. 8P07094 dated 16 January 2020 from SP, Borås, Sweden.

Drawing No. S1571128 Rev. A dated 13 October 2021 from maker.
Drawing No. S1571137 Rev. A dated 13 October 2021 from maker.
Drawing No. S1571139 Rev. A dated 13 October 2021 from maker.
Drawing No. S1571140 Rev. A dated 13 October 2021 from maker.
Drawing No. S1571823 Rev. A dated 13 October 2021 from maker.
Drawing No. S1572074 Rev. A dated 13 October 2021 from maker.

Installation instructions Roxtec SL A sleeve from Roxtec.

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, Mark of Conformity (see page 1).

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

Product description

“Roxtec sealing system with multidiameter technology: R-series (steel)”
consisting of a steel sleeve, bolted welded or attached through expansion (R X) to a steel section. Sleeve is fitted with a Roxtec R frame (standard, Ex or EMC) in sizes 50-200. The R-frame is filled with Roxtec (standard, Ex or EMC) halogen free RM modules.

Application/Limitation

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

Type Approval documentation

Test report No. MLM 010238 dated 30 August 2001 from DNV Malmö.

Test report No. MLM 020408 dated 3 June 2001 from DNV Malmö.

Test report No. MLM 030473-1 dated 27 January 2003 from DNV Malmö.

Test report No. 40007647-1 dated 13 December 2011 from DNV Malmö.

Tests carried out

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