

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00002SG
Revision No:
2

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 AS under the authority of the Government of Norway.

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 (aluminium division)

Issued to

Roxtec International AB
Karlskrona, Sweden

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

Regulation (EU) 2022/1157,

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

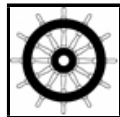
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2028-01-25**.

Issued at **Høvik** on **2023-02-07**

DNV local unit:
Sweden CMC

Approval Engineer:
Marcin Tobiasz



Notified Body
No.: **0575**



for **DNV AS**

Digitally Signed By:
Øyvind Hoff

Location: DNV Høvik, Norway
on behalf of

Sverre Olav Bergli
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 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 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 (aluminum division)”

The R-Series sealing system consist of a rubber frame filled with Roxtec RM modules of different sizes depending on diameter and configuration of the cables. It is available in standard, Ex and EMC versions depending on application. The R-seal is installed into an aluminum sleeve that is welded, a steel sleeve that are attached by expansion (SLFR X) or a steel sleeve attached with a nut (SLA) onto the aluminum division.

Application/Limitation

Approved for use as single or multiple cable penetration system in class A-0, A-15, A-30 and A-60 aluminium bulkheads and decks. Other applications are subject to case-by-case approval.

Approved for use in class A-0, A-15 and A-30 when the penetration system is insulated as A-60 and in addition the division is to be insulated with A-60 insulation at least 200 mm around the penetration.

Table 1: Approved cable penetration in A-60 aluminium bulkhead.

R-series size	Sleeve type	Max. cable diameter [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Sleeve insulation
50 - 200	SLR ¹⁾	30	55	4 - 7	Symmetric	S1583385 No. 1
50 - 100	SLA	50	86 - 96	4 - 5	Either	S1583387 No. 1
70 - 200	SLFR X	50	55	4 - 7	Either	S1583389 No. 1

1) SLR-Series includes the following sleeve types: SLR, SLR EX or sleeves equal to Roxtec dimensions specified in drawing S1587721.

Table 2: Approved cable penetration in A-60 aluminium deck.

R-series size	Sleeve type	Max. cable diameter [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Sleeve insulation
50 - 200	SLR ¹⁾	67	55	4 - 5	Symmetric, Top side	S1583385 No. 2
50 - 100	SLA	50	86 - 96	4 - 7	Top side	S1583387 No. 2
70 - 200	SLFR X	50	55	4 - 5	Underside	S1583389 No. 2

1) SLR-Series includes the following sleeve types: SLR, SLR EX or sleeves equal to Roxtec dimensions specified in drawing S1587721.

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

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

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

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).

Type Examination documentation

Test report No. PGA11370A dated 20 February 2019 from DIFT, Denmark.
 Test report No. PGA11371A dated 20 February 2019 from DIFT, Denmark.
 Test report No. RS-18/B-179/E dated 25 June 2018 from CTO, Gdansk, Poland.
 Test report No. RS-19/B-224/E dated 1 August 2019 from CTO, Gdansk, Poland.
 Test report No. RS-20/B-082/E dated 21 April 2020 from CTO, Gdansk, Poland.
 Test report No. RS-20/B-408/E dated 17 December 2020 from CTO, Gdansk, Poland.
 Drawing No. S1583385 Rev. B dated 20 September 2022 from Roxtec International AB.
 Drawing No. S1583387 Rev. B dated 20 September 2022 from Roxtec International AB.
 Drawing No. S1583389 Rev. B dated 20 September 2022 from Roxtec International AB.

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

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

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The R-seal is installed into an aluminum sleeve that is welded, a steel sleeve that are attached by expansion (SLFR X) or a steel sleeve attached with a nut (SLA) onto the aluminum division.

Application/Limitation

Approved for penetration in aluminium 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.

For SLA sleeves the pressure is limited to 2.67 bar watertightness and 1.00 bar gastightness.

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

Type Approval documentation

Test report No. N141EX8Z Rev.2 dated 10 August 2017 from DNV, Malmö, Sweden.

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

Test report No. MLM 030473-1 (R X) dated 27 January 2003 from DNV, Malmö, Sweden.

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

Tests carried out

Pressure tests with water and Helium according to Class Programme DNV-CP-0165.