

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

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 the Kingdom 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: R-series (steel)

Issued to

Roxtec International AB
Karlskrona, Sweden

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

Regulation **(EU) 2017/306,**

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

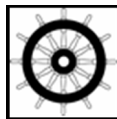
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2019-07-15.**

Issued at **Høvik** on **2018-03-13**

DNV GL local station:
Malmö

Approval Engineer:
Helge Bjørnarå



Notified Body
No.: **0575**

for **DNV GL AS**

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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.

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.



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 use as a single or multiple pipe penetration system in class A-0, A-15, A-30 and A-60 steel bulkheads and decks for steel pipes, A-15, A-30 and A-60 steel bulkheads and decks for copper pipes with Ø 10 to 54 mm, A-0 steel decks for copper pipes with Ø 10 to 54 mm.

Deck or bulkhead to be insulated with approved insulation according to classification covering the edge of the steel frame. See insulation drawings specified in the Type Approval Documentation.

A-15 and A-30 R X penetrations are to be insulated as for class A-60 and in addition the division is to be insulated at least 200 mm around the penetration.

Cold service piping insulated with Armaflex rubber insulation layer may be used with approved penetrations but is to be locally interrupted through the penetration system.

The insulation materials used have 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 RS X 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).

Type Examination documentation

Test report Nos.:

- 22N007.18A (A-60 bulkhead) dated 29 May 2000
- 22N007.18C (A-60 deck) dated 29 May 2000
- 22N007.18D (A-0 deck) dated 29 May 2000
- 103070.23A (A-60 bulkhead) dated 11 December 2002
- 103070.23B (A-60 deck) dated 11 December 2002 from SINTEF, Norway
- P602999 (A-60 bulkhead, Cu pipes)
- P603000 (A-60 deck, Cu pipes) dated 23 January 2007 from SP, Sweden
- 10408 (A-0 deck, Cu pipes) dated 16 February 2006 from Roxtec, Sweden.
- PGA10800A (A-60 steel deck, Pipe penetrations, cable transits) dated 26-05-2016 from DBI, Denmark
- IECEX Certificate of conformity IECEX NEM 12.0015U dated 2015-05-07.

Assessment No. 103200.94 (A-60 deck) dated 17 December 2002 from SINTEF, Norway.

Drawing Nos.:

- S1006137 Rev.0 (A-0),
- S1509547 rev C (A-class deck with steel pipes),
- S1006138 Rev.A (A-15, A-30 and A-60 bulkhead),
- S1004588 Rev.0 (A-15, A-30 and A-60 (R X)),
- S1010588 Rev.- (A-15, A-30 and A-60 Cu pipes) and
- S1010590 Rev.- (A-0 deck Cu pipes)



Job Id: **344.1-000153-61**
Certificate No: **MEDB00001HW**

from Roxtec International AB.

Tests carried out

Tested according to IMO FTP Code Part 3 (IMO Res. A.753(18)) and in compliance with IMO 2010 FTP Code Ch. 8.

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/or USCG approval number (see page 1).

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

Product description

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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 70-200.
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 Nos.:

- MLM 010247 dated 28 September 2001,
- MLM020401 dated 25 March 2002
- MLM 030473-1 (R X) dated 27 January 2003

from DNV Malmö.

Tests carried out

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