

# TYPE APPROVAL CERTIFICATE

**This is to certify:****That the Bulkhead/Deck Penetration**

with type designation(s)

**Roxtec sealing system with multidiameter technology: S-series (steel/aluminium)**

Issued to

**Roxtec International AB**  
**KARLSKRONA, Sweden**

is found to comply with

**Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards****Application :****Cable penetrations approved for water tightness in steel division of bulkheads or decks.****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**This Certificate is valid until **2019-09-21**.Issued at **Høvik** on **2017-01-04**DNV GL local station: **Gothenburg**Approval Engineer: **Marta Alonso Pontes**for **DNV GL**

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**Andreas Kristoffersen**  
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Job Id: **262.1-002582-6**  
Certificate No: **TAE000000U**  
Revision No: **3**

## Product description

"Roxtec sealing system with multidiameter technology: S-series (steel/aluminium)" consisting of Roxtec S-series steel or aluminium frames (S, SO, SF, SFO, SR, SK, SRC r20, SRC r40 and SBTB) in sizes 1-8 and combinations thereof, welded or bolted to a steel or aluminium section. The S frame is filled with Roxtec (standard or EMC) halogen free RM modules. Assembled with Roxtec wedge kit or Roxtec EMC wedge kit.

## Application/Limitation

### Standard installation

Cable and pipe penetrations approved of water-and gas tightness in steel and aluminium bulkheads or decks limited to a pressure of 4 bar water tightness and 2,67 bar gas tightness.

For bolted versions with gasket and self-tapping screws, the pressure is limited to 3,33 bar water tightness and 1,67 bar gas tightness. Installed according to Roxtec rectangular system (Standard Installation instruction)

### Additional installation arrangements

#### Half size configuration

4pcs half size modules besides 1pcs full size module, installed according to Standard Installation Instruction together with ASS2013002901 Amendment to Standard Installation instructions.

Pressure limits: 2, 67 bar water tightness and 1,5 bar gas tightness.

#### Total mix configuration

Various different sized modules stacked onto each other up to and including a maximum packing space height of 60mm, installed according to Standard Installation Instruction together with ASS2011005301 Amendment to Standard Installation instructions

Pressure limits: 1,5 bar water tightness

When used in High Speed and Light Crafts the penetrations are subject for approval in each case.

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

When requested to be used in watertight bulkheads on passenger ships and Special Purpose Ships (SPS), the penetration system has to comply with the requirements given in SOLAS Ch. II-1 Reg. 13.2.3 (2009 issue). Penetrations passing through watertight bulkheads are subject for separate examination and approval by actual flag administration.

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

## Type Approval documentation

Certification in accordance with Standard for Certification No. 1.2, Type Approval, April 2009.

Test reports No. MLM 020133 dated 2002-02-26, No. MLM 020400 and No. MLM 020401 dated 2002-03-25, No. MLM 050410 dated 2005-05-20, No. MLM 020106 dated 2001-12-19, No. MLM 020408 dated 2002-06-03 and No. SKM 04-4088 dated 2004-06-16 from DNV Malmö. Alternative configuration test report: DNV 40007647, DNV40009183/1, DNV40009336/1, DNV40009609/2, DNV 40009609/3  
Certificate retention survey: Ref. MED audit carried out 2 November 2010.

Installation instructions, Roxtec rectangular system (Standard Installation Instruction).

ASS2011005301 Amendment to Standard Installation Instruction, Roxtec rectangular system, Alternative module configuration, total mix.

ASS2013002901 Amendment Standard Installation Instruction, Roxtec rectangular system, Alternative module configuration, half size mix.

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### **Tests carried out**

Pressure tests with water and Helium according to Type Approval Programme 8-471.19-1 dated May 2001.

### **Marking of product**

The product or packing is to be marked with name of manufacturer and type designation.

### **Periodical assessment**

The scope of the periodical assessments to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at least every second year.

END OF CERTIFICATE