

TYPE APPROVAL CERTIFICATE

Certificate no.:
TAF0000147
Revision No:
2

This is to certify:
that the Class H Penetration

with type designation(s)
Roxtec sealing system with multidiameter technology: RS-series (Sandwich panel), R-series (Sandwich panel), GH-series (sandwich panel)

issued to
Roxtec International AB
Karlskrona, Sweden

is found to comply with
DNV offshore standards

Application:
Approved for use as cable penetration system in H-60 and H-120 class bulkheads.

Issued at **Høvik** on **2024-07-10**

This Certificate is valid until **2029-07-09**.

DNV local unit: **Sweden CMC**

Approval Engineer: **Marcin Tobiasz**

for **DNV**



Digitally Signed By:
Jowita Permoda

Location: **DNV Høvik, Norway**

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.

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: RS-series (Sandwich panel), R-series (Sandwich panel), GH-series (sandwich panel)

The RS cable penetration seal consist of two halves with removable layers making it adaptable to cables of different diameters. It is available in different versions, RS, RS OMD, RS EMC or RS EX, depending on application. The RS-seal is installed into a steel sleeve with flange, the sleeve is attached with self-drilling screws with washers to the sandwich panel bulkhead together with counter frame. The steel sleeve is sealed with Roxtec Fire Sealant around the perimeter.

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 a steel sleeve with a flange, the sleeve is attached with self-drilling screws with washers to the sandwich panel bulkhead together with counter frame. The steel sleeve is sealed with Roxtec Fire Sealant around the perimeter.

The GH-Series sealing system consists of Roxtec GH-frames with a depth of 60mm (GH, GHM,G Ex, GH BG) in height 1-8 and width 60-120 and combination thereof. The GH-series is filled with Roxtec halogen free RM modules¹⁾. Assembled with Roxtec Wedge, Roxtec ES Wedge, Roxtec Ex Wedge or Roxtec ES Ex Wedge and corresponding stay plates. The GH-frame flange is attached with self-drilling screws with washers to the sandwich panel bulkhead together with counter frame. The steel sleeve is sealed with Roxtec Fire Sealant around the perimeter.

¹⁾ Standard RM, RM Ex, 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 further details, see approved drawing listed below.

Additional Place of Production:

Roxtec Sealing System (Shanghai) Co.,Ltd Lingang Branch
 Ground Floor A, No.875 QiuXin Road Zhongqilian (Lingang) Global Auto Parts Innovation Center, Shanghai, China.
 Roxtec Saudi Arabia for Manufacturing LLC, 2634 - Ibn Sina Dist., Al Khobar 34627 – 6245, Al Khobar, Saudi Arabia

Application/Limitation

Approved for use as cable penetration system in H-60 and H-120 class bulkheads. Other applications are subject to case-by-case approval.

Approved for installation in H-60 and H-120 bulkhead sandwich panel type G21 (manufactured by InterDam) or similar constructed H-class rated panels. The sandwich panel G21 was constructed with 170 mm thick insulation core (density 120 kg/m³) and 0.6 mm galvanized steel.

Table 1: Approved cable penetration in H-120 bulkheads made of sandwich panels

Type	Size	Cable type	Max. cable diameter [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position ¹⁾	Penetration insulation
RS	25 – 125	Marine	90	35 – 65	4 – 7	Any	Fully insulated (S1590692 Rev A)
R	50 – 200	Marine	90	55	6 – 7	Unexposed ²⁾	Fully insulated (S1590681 Rev A No. 1)
GH	1x1 – 8+8x2	Marine	88	60	6	Any	Fully insulated (S1590676 Rev A No. 1 – 2)

1) The steel sleeve is inserted into panel.

2) Restricted application: sleeve inserted from non-fire hazard side.

Table 2: Approved cable penetration in H-60 bulkheads made of sandwich panels

Type	Size	Cable type	Max. cable diameter [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position ¹⁾	Penetration insulation
R	50 – 200	Marine	90	55	6 – 7	Any	Fully insulated (S1590681 Rev A No. 2)

1) The steel sleeve is inserted into panel.

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

Type Approval documentation

Certification in accordance with Class Programme DNV-CP-0338, September 2021.

Test report No.2018-Efectis-R000386 dated 11 June 2018 from Efectis, Bleiswijk, The Netherlands.



Job ID: **262.1-030113-3**
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Test report No. RS-22/B-244/E dated 11 August 2022 from CTO, Gdansk, Poland.

Drawing No. S1590676 Rev A dated 11 April 2023 from maker.

Drawing No. S1590681 Rev A dated 6 April 2023 from maker.

Drawing No. S1590692 Rev A dated 11 April 2023 from maker.

Tests carried out

Tested according to IMO 2010 FTP Code Part 3 with the hydrocarbon time-temperature curve specified in EN 1363-2.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating.

Periodical assessment

DNV surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in DNV-CP-0338 Section 4.