

TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MERB00003M3
Revision No:
1

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: G-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 9**,
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 **2028-12-20**.

Issued at **London** on **2024-11-08**

DNV local unit:
Denmark CMC

Approval Engineer:
Karolina Kusmider



Approved Body No.: **0097**

for **DNV UK Ltd.**

Mydlak-Röder, Christine
MER Service Responsible



**Maritime &
Coastguard
Agency**

UK Approved Body Authorised
by the MCA

This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.
During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.
"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. In case limitations of use apply, these should be indicated in the Annex.

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: G-series (steel)”, consisting of G-series steel frames (G, GHM, GHM BG, GO, GOH, G welded Ex and G bolted Ex) and GKO frame in sizes 1-8 and combinations thereof, bolted or welded to a steel section. The frame is filled with Roxtec (Standard, EX, BG or EMC) halogen free RM modules. Assembled with Roxtec Wedge (Standard, EX or ES) and corresponding stay plates.

Application/Limitation

Approved for use as a single or multiple cable penetration system in class A-0, A-15, A-30 and A-60 steel bulkheads and decks for approved ship cables.

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.

Frame type	Size	Cable type	Max. cable diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Penetration insulation
G-series	1x1 – 8x1	Marine	88	60	6	Any	Partially insulated* (S1589743, 4)
G-series	1x1 – 8x1	Marine	88	60	6	Insulated side	Fully insulated. (S1589743, 5)
G-series	1x1 – 8+8x2	Marine	88	60	6	Insulated side	Fully insulated. (S1589743, 6)

* Restricted application (fire against insulated side).

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

Frame type	Size	Cable type	Max. cable diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Penetration insulation
G-series	1x1 – 8x1	Marine	88	60	6	Any	Partially insulated on the underside. (S1589743, 1)
G-series	1x1 – 8+8x2	Marine	88	60	6	Any	Fully insulated + 250 mm along cables on the underside. (S1589743, 2)
GKO	2x1 – 8x1	Marine	88	100	6	Topside	Partially insulated on the underside. (S1589743, 3)

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

Frame type	Size	Cable type	Max. cable diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Penetration insulation
G-series	1x1 – 8x1	Marine	88	60	6	Any	Partially insulated* (S1589784, 4)
G-series	1x1 – 8x1	Marine	88	60	6	Insulated side	Fully insulated. (S1589784, 5)
G-series	1x1 – 8+8x2	Marine	88	60	6	Insulated side	Fully insulated. (S1589784, 6)

* Restricted application (fire against insulated side).

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

Frame type	Size	Cable type	Max. cable diameter (OD) [mm]	Sleeve length [mm]	Sleeve thickness [mm]	Sleeve position	Penetration insulation
G-series	1x1 – 8x1	Marine	88	60	6	Any	Partially insulated on the underside. (S1589784, 1)
G-series	1x1 – 8+8x2	Marine	88	60	6	Any	Fully insulated + 250 mm along cables on the underside. (S1589784, 2)

GKO	2x1 – 8x1	Marine	88	100	6	Topside	Partially insulated on the underside. (S1589784, 3)
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The insulation materials used have to be approved according to the Marine Equipment Regulation and bear the Mark of Conformity.

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

Type Examination documentation

Test report No. 6P10022 dated 7 March 2017 from SP, Borås, Sweden.
 Test report No. RS-17/B-395/E dated 30 October 2017 from CTO, Gdansk, Poland.
 Test report No. RS-17/B-396/E dated 30 October 2017 from CTO, Gdansk, Poland.
 Test report No. RS-18/B-181/E dated 7 May 2018 from CTO, Gdansk, Poland.
 Test report No. RS-22/B-394/E dated 28 November 2022 from CTO, Gdansk, Poland.

Drawing No. S1589743, Rev. A dated 13 March 2023 from manufacturer.
 Drawing No. S1589784, Rev. B dated 6 November 2023 from manufacturer.

Tests carried out

Tested according to IMO 2010 FTP Code part 3 and IMO FTP Code part 3 (IMO Res.A.754(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, Mark of Conformity (see page 1).

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

Product description

“Roxtec sealing system with multidiameter technology: G-series (steel)”, consisting of G-series steel frames (G, GHM, GHM BG, GO, GOH, G welded Ex and G bolted Ex) and GKO frame in sizes 1-8 and combinations thereof, bolted or welded to a steel section. The frame is filled with Roxtec (Standard, EX, BG or EMC) halogen free RM modules. Assembled with Roxtec Wedge (Standard, EX or ES) and corresponding stay plates.

Application/Limitation

Approved for penetration in steel bulkheads or decks limited to a pressure of 4.0 bar watertightness and 2.7 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 generally not to be used for penetrating boundaries of tanks.

Type Approval documentation

Test report No. MLM 020106 dated 19 December 2001 from DNV Malmö.

Test report No. MLM 020133 dated 26 February 2002 from DNV Malmö.

Test report No. MLM 020401 dated 25 March 2002 from DNV Malmö.

Tests carried out

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