

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB00001Y7
Revision No:
5

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: S-series (steel)

Issued to

Roxtec International AB
Karlskrona, Sweden

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

Regulation (EU) 2023/1667,

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

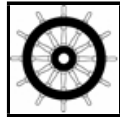
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2027-06-13**.

Issued at **Høvik** on **2024-01-31**

DNV local unit:
Denmark CMC

Approval Engineer:
Marcin Tobiasz



Notified Body
No.: **0575**

for **DNV AS**

Digitally Signed By:

Tessa Biever

Location: DNV Høvik, Norway
on behalf of

Mydlak-Röder, Christine
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 1/2023 dated August 21st, 2023.



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: S-series (steel)”, consisting of Roxtec S-series steel frames (S, S Ex, SF, SFHM, SO, SFO, SFOH, SR/T, SR/S, SRC r20, SRC r40, SRC r60) in height 1-8 and width 60-120, and combinations thereof, welded or bolted to the steel sections. The steel frame is filled with Roxtec halogen free RM modules*. Assembled with Roxtec Wedge (standard, Ex, ES or ES Ex) and corresponding stay plates.

SK-series is an extra deep steel frame with single barrier (SK, SK Ex, SFK, SFOK, SFOHK, SRCK r20, SRCK r40, SRCK r60).

The steel frame is fitted at one end with Roxtec halogen free RM modules*. Assembled with Roxtec Wedge (standard, Ex, ES or ES Ex) and corresponding stay plates.

SBTB-series is an extra deep steel frame with two barriers (SBTB, SBTB Ex, SFBTB, SRBTB, SRCBTB r20, SRCBTB r40, SRCBTB r60). The steel frame is fitted at both ends with Roxtec halogen free RM modules*. Assembled with Roxtec Wedge (standard, Ex, ES or ES Ex) and corresponding stay plates.

* RM modules comes in the following versions: RM, RM Ex, RM FOC, 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 more details, see drawings listed under Type Examination documentation below.

Application/Limitation

Approved for use as empty, 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, inc. continuously welded aluminium clad cables (e.g., CLX type) according to the tables below. Other applications are subject to case-by-case approval.

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	Sleeve insulation
S-series	1 – 8	Marine	90	60	10	Any	Fully insulated ²⁾ . (S1585258, 1)
S-series	1 – 8+8x3	Marine ¹⁾	90	60	10	Symmetric	Fully insulated ²⁾ . (S1585258, 2)
S-series	1 – 8+8x10	Marine ¹⁾	90	60	10	Symmetric	Fully insulated. (S1585258, 3)
S-series	1 – 8+8x3	Marine ¹⁾	90	60	10	Symmetric	Fully insulated ²⁾ . (S1585258, 4-5)
S-series	1 – 8+8x3	CLX	98	60	10	Symmetric	Fully insulated. (S1574575, 1)
SK-series	2 – 8+8x2	Marine ¹⁾	90	100 – 400	10	Any	Fully insulated on both sides ²⁾ . (S1585341, 3)
SK-series	2 – 8+8x5	Marine ¹⁾	90	100 – 400	10	Insulated side	Fully insulated ²⁾ . (S1585341, 4)
SBTB-series	2 – 8	Marine ¹⁾	90	200 – 400	10	Symmetric	Partially insulated. (S1585343, 2)

1) Fiber optic conduits of LSHF material can only be installed in FOC modules, Max size of conduit is 18 mm.

2) No insulation between cables.

Table 2: 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	Sleeve insulation
S-series	1 – 8+8x5	Marine ¹⁾	90	60	10	Symmetric	None. (S1585853, 4)
S-series	1 – 8+8x10	Marine ¹⁾	90	60	10	Symmetric	Fully insulated. (S1585853, 5)
S-series	1 – 8+8x3	CLX	98	60	10	Symmetric	Fully insulated. (S1574720, 1)
SK-series	1 – 8+8x2	Marine ¹⁾	90	100 – 200	10	Any	Fully insulated on both sides ²⁾ . (S1585869, 3)

SK-series	1 – 8+8x5	Marine ¹⁾	90	100 – 400	10	Stiffened side	None. (S1585869, 4)
SBTB-series	2 – 8	Marine ¹⁾	82	200 – 400	10	Symmetric	None. (S1585877, 2)

- 1) Fiber optic conduits of LSHF material can only be installed in FOC modules, Max size of conduit is 18 mm.
 2) No insulation between cables.

Table 3: 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	Sleeve insulation
S-series	1 – 8+8x2	Marine	90	60	10	Any	Partially insulated. (S1585258, 6 – 7)
S-series	1 – 8+8x10	Marine ¹⁾	90	60	10	Top side, Symmetric	Partially insulated. (S1585258, 8)
S-series	1 – 8+8x2	CLX	98	60	10	Any	Fully insulated. (S1574575, 2)
SK-series	2 – 8	Marine ¹⁾	90	100 – 400	10	Top side	Partially insulated. (S1585341, 1)
SK-series	2 – 8+8x5	Marine ¹⁾	90	100 - 400	10	Any	Fully insulated ²⁾ . (S1585341, 2)
SK-series	2 – 8	CLX	60	100 – 200	10	Top side	Fully insulated. (S1578673, 1)
SBTB-series	2 – 8	Marine ¹⁾	90	200 – 400	10	Any	Partially insulated. (S1585343, 1)
SBTB-series	2 – 8	CLX	60	200 – 400	10	Top side, Symmetric	Fully insulated with insulation inside frame ²⁾ . (S1578800, 1)

- 1) Fiber optic conduits of LSHF material can only be installed in FOC modules, Max size of conduit is 18 mm.
 2) No insulation between cables.

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	Sleeve insulation
S-series	1 – 8	Marine ¹⁾	90	60	10	Top side, Symmetric	None. (S1585853, 1)
S-series	1 – 8+8x3	Marine ¹⁾	90	60	10	Top side	None. (S1585853, 2)
S-series	1 – 8+8x10	Marine ¹⁾	90	60	10	Top side, Symmetric	Partially insulated. (S1585853, 3)
S-series	1 – 8+8x2	CLX	98	60	10	Any	Fully insulated. (S1574720, 2)
SK-series	1 – 8	Marine ¹⁾	90	100 – 400	10	Top side	None. (S1585869, 1)
SK-series	1 – 8+8x5	Marine ¹⁾	90	100 – 400	10	Any	Fully insulated. (S1585869, 2)
SK-series	2 – 8	CLX	60	100 – 400	10	Top side	Fully insulated. (S1578674, 1)
SBTB-series	2 – 8	Marine ¹⁾	90	200 – 400	10	Any	Partially insulated. (S1585877, 1)
SBTB-series	2 – 8	CLX	60	200 – 400	10	Top side, Symmetric	Fully insulated with insulation inside frame ²⁾ . (S1578712, 1)

- 1) Fiber optic conduits of LSHF material can only be installed in FOC modules, Max size of conduit is 18 mm.
 2) No insulation between cables.

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

Only fire technical properties have been evaluated. Ex and EMC etc. have to be separately documented.

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

Type Examination documentation

Test report No. 09-344(E) dated 11 December 2009 from RIME, Tokyo, Japan.
Test report No. PX05454 dated 15 December 2010 from SP, Borås, Sweden.
Test report No. PGA10024 dated 21 December 2011 from DBI, Hvidovre, Denmark.
Test report No. PGA10025 dated 22 December 2011 from DBI, Hvidovre, Denmark.
Test report No. PGA10452 dated 28 May 2014 from DBI, Hvidovre, Denmark.
Test report No. PGA10453 dated 28 May 2014 from DBI, Hvidovre, Denmark.
Test report No. 4P07023 dated 4 February 2015 from SP, Borås, Sweden.
Test report No. 4P08662 dated 8 June 2015 from SP, Borås, Sweden.
Test report No. PGA10652 dated 3 July 2015 from DBI, Hvidovre, Denmark.
Test report No. PGA10723A dated 4 February 2016 from DBI, Hvidovre, Denmark.
Test report No. 6P02249 dated 17 August 2016 from SP, Borås, Sweden.
Test report No. PGA 10871A Rev.1 dated 31 October 2016 from DBI, Hvidovre, Denmark.
Test report No. 6P02516 dated 29 August 2016 from SP, Borås, Sweden.
Test report No. PGA10871A Rev.2 dated 31 October 2016 from DBI, Hvidovre, Denmark.
Test report No. 6P07563 dated 20 December 2016 from SP, Borås, Sweden.
Test report No. 6P10022 dated 7 March 2017 from SP, Borås, Sweden.
Test report No. RS-17/B-176/E dated 25 May 2017 from CTO, Gdansk, Poland.
Test report No. RS-17/B-177/E dated 26 May 2017 from CTO, Gdansk, Poland.
Test report No. 8P04039 dated 6 August 2018 from RISE, Borås, Sweden.
Test report No. 8P04040 dated 13 August 2018 from RISE, Borås, Sweden.
Test report No. RS-18/B-293/E dated 13 September 2018 from CTO, Gdansk, Poland.
Test report No. PGA11301A dated 22 November 2018 from DBI, Hvidovre, Denmark.
Test report No. RS-18/B-484/E dated 10 December 2018 from CTO, Gdansk, Poland.
Test report No. PGA11302A dated 19 January 2019 from DBI, Hvidovre, Denmark.
Test report No. RS-19/B-355/E dated 16 October 2019 from CTO, Gdansk, Poland.
Test report No. RS-19/B-356/E dated 18 October 2019 from CTO, Gdansk, Poland.
Test report No. RS-20/B-409/E dated 21 December 2020 from CTO, Gdansk, Poland.
Test report No. PGB10119A dated 15 November 2021 from DBI, Hvidovre, Denmark.
Test report No. PGB10172A dated 17 June 2022 from DBI, Hvidovre, Denmark.
Test report No. PGB10116A dated 2 August 2021 from DBI, Hvidovre, Denmark.
Test report No. PGB10117A dated 2 August 2021 from DBI, Hvidovre, Denmark.
Test report No. PGB10172A dated 17 June 2022 from DBI, Hvidovre, Denmark.
Test report No. PGB10177A dated 4 November 2022 from DBI, Hvidovre, Denmark.
Test report No. RS-22/B-337/E dated 28 October 2022 from CTO, Gdansk, Poland.
Test report No. RS-22/B-425/E dated 2 January 2023 from CTO, Gdansk, Poland.
Test report No. RS-22/B-427/E dated 2 January 2023 from CTO, Gdansk, Poland.
Test report No. RS-23/B-104/E dated 25 April 2023 from CTO, Gdansk, Poland.
Test report No. RS-22/B-394/E dated 28 November 2022 from CTO, Gdansk, Poland.
Test report No. RS-23/B-105/E dated 23 May 2023 from CTO, Gdansk, Poland.
Test report No. PGB10218A dated 8 May 2023 from DBI, Hvidovre, Denmark.
Test report No. PGB10219A dated 10 May 2023 from DBI, Hvidovre, Denmark.
Test report No. PGB10651 dated 3 July 2015 from DBI, Hvidovre, Denmark.
Test report No. RS-23/B-223/E dated 30 August 2023 from CTO, Gdansk, Poland.
Test report No. RS-23/B-031/E dated 7 March 2023 from CTO, Gdansk, Poland.

Drawing No. S1574575 Rev. B dated 19 April 2022 from manufacturer.
Drawing No. S1574720 Rev. B dated 19 April 2022 from manufacturer.
Drawing No. S1578673 Rev. A dated 12 April 2024 from manufacturer.
Drawing No. S1578674 Rev. B dated 11 January 2024 from manufacturer.
Drawing No. S1578712 Rev. B dated 11 January 2024 from manufacturer.
Drawing No. S1578800 Rev. B dated 11 January 2024 from manufacturer.
Drawing No. S1585341 Rev. B dated 29 November 2023 from manufacturer.
Drawing No. S1585343 Rev. B dated 27 November 2023 from manufacturer.
Drawing No. S1585258 Rev. C dated 29 November 2023 from manufacturer.
Drawing No. S1585853 Rev. C dated 29 November 2023 from manufacturer.
Drawing No. S1585869 Rev. B dated 29 November 2023 from manufacturer.
Drawing No. S1585877 Rev. B dated 27 November 2023 from manufacturer.

Tests carried out

Tested according to IMO FTPC Part 3 and in compliance with IMO 2010 FTP Code Ch. 8 and according to IMO 2010 FTP Code part 3.



Job Id: **344.1-000153-122**
Certificate No: **MEDB00001Y7**
Revision No: **5**

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).

Appendix

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

Product description

"Roxtec sealing system with multidiameter technology: S-series (steel)", consisting of Roxtec S-series steel frames (S, S Ex, SF, SFHM, SO, SFO, SFOH, SR/T, SR/S, SRC r20, SRC r40, SRC r60) in height 1-8 and width 60-120, and combinations thereof, welded or bolted to the steel sections. The steel frame is filled with Roxtec halogen free RM modules*. Assembled with Roxtec Wedge (standard, Ex, ES or ES Ex) and corresponding stay plates.

SK-series is an extra deep steel frame with single barrier (SK, SK Ex, SFK, SFOK, SFOHK, SRCK r20, SRCK r40, SRCK r60).

The steel frame is fitted at one end with Roxtec halogen free RM modules*. Assembled with Roxtec Wedge (standard, Ex, ES or ES Ex) and corresponding stay plates.

SBTB-series is an extra deep steel frame with two barriers (SBTB, SBTB Ex, SFBTB, SRBTB, SRCBTB r20, SRCBTB r40, SRCBTB r60). The steel frame is fitted at both ends with Roxtec halogen free RM modules*. Assembled with Roxtec Wedge (standard, Ex, ES or ES Ex) and corresponding stay plates.

* RM modules comes in the following versions: RM, RM Ex, RM FOC, 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

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 penetrations incorporation SFOHK frames, the pressure is limited to 2.67 bar watertightness.

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 No. MLM 020106 dated 19 December 2001 from DNV, Malmö, Sweden.
Test report No. MLM 020133 dated 26 February 2002 from DNV, Malmö, Sweden.
Test report No. MLM 020408 dated 3 June 2002 from DNV, Malmö, Sweden.
Test report No. SKM-04-4088 dated 16 June 2004 from DNV, Stockholm, Sweden.
Test report No. N141CR4U Rev.1 dated 23 March 2017 from DNV, Malmö, Sweden.
Test report No. N141805F dated 27 February 2018 from DNV, Gothenburg, Sweden.

Tests carried out

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