



# EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:  
**MEDB00006JA**  
Revision No:  
**2**

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: pipe, duct, trunk, etc penetrations**

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/3.26b. SOLAS 74 as amended, Regulation II-2/9, IMO MSC.1/Circ.1276, IMO 2010 FTP Code and IMO MSC.1/1488**

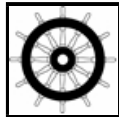
Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2029-05-15**.

Issued at **Høvik** on **2024-05-16**

DNV local unit:  
**Sweden CMC**

Approval Engineer:  
**Helge Bjørnara**



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 frame (S, S EX, SF, SO, SFO, SR/T, SR/S, SRC r20, SRC r40, and SRC r60) in height 1-8 and width 60-120, and combinations thereof, welded to the steel divisions.  
 The steel frame is filled with Roxtec halogen free RM modules\*. Assembled with Roxtec wedge (standard, Ex or ES) 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) welded or bolted to the steel divisions.

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) welded to the steel divisions.

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 a single or multiple pipe penetration system in class A-0 and A-60 steel divisions. Other applications are subject to case-by case approval.

For A-15 and A-30 applications, the penetration shall be insulated as for A-60 and the division is to be fitted with A-60 insulation for a minimum distance of 200 mm around the penetration.

Table 1: Approved pipe penetration in A-60 steel bulkhead.

Frame type	Size	Pipe Material	Pipe diameter (OD) [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Penetration Insulation
S-series	1x1 – 8x1	Steel, Titanium	6 – 53	60	10	Symmetric	Fully insulated + 300 mm along pipes on one side. (S1597940, 3)
S-series	1x1 – 8+8x5	Steel, Titanium	6 – 54	60	10	Symmetric	Fully insulated* + 500 mm along pipes on one side. (S1597940, 4)
S-series	1x1 – 8x1	Bundle (Steel)	8 – 50	60	10	Symmetric	Fully insulated* + 500 mm along pipes on one side. (S1597927, 3)
S-series	1x1 – 8+8x5	Bundle (Steel)	8 – 50	60	10	Symmetric	Fully insulated* + 500 mm along pipes on one side. (S1597927, 4)
S-series	1x1 – 8x1	Copper, CuNi	6 – 54	60	10	Symmetric	Fully insulated + 600 mm along pipes on one side. (S1597962, 1)

\* No insulation between pipes.

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

Frame type	Size	Pipe Material	Pipe diameter (OD) [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Penetration Insulation
S-series	1x1 – 8x1	Steel	6 – 30	60	10	Top side Symmetric	Partially insulated on the underside. (S1597940, 1)
S-series	1x1 – 8+8x5	Steel, Titanium	6 – 50	60	10	Top side Symmetric	Fully insulated* + 350 mm along the pipes on the underside. (S1597940, 2)
S-series	1x1 – 8x1	Bundle (Steel)	8 – 50	60	10	Top side Symmetric	Fully* insulated + 350 mm along pipes on the underside. (S1597927, 1)
S-series	1x1 – 8+8x5	Bundle (Steel)	8 – 50	60	10	Top side Symmetric	Fully insulated* + 350 mm along pipes on the underside. (S1597927, 2)

S-series	1x1 – 8x1	Copper, CuNi	6 – 54	60	10	Top side Symmetric	Fully insulated + 650 mm along pipe on the underside. (S1597962, 2)
SK-series	1x1 – 8x1	Steel, Titanium	6 – 54	100 – 400	10	Any	Fully insulated* + 350 mm along pipes on the underside. (S1597969, 1)
SK-series	1x1 – 8x1	Steel, Titanium	6 – 30	100 – 200	10	Top side	Fully insulated on the underside. (S1597969, 2)
SK-series	1x1 – 8x1	Bundle (Steel)	8 – 50	100 – 400	10	Any	Fully* insulated + 350 mm along pipes on the underside. (S1597980, 1)

\* No insulation between pipes.

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

Frame type	Size	Pipe material	Pipe diameter (OD) [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Penetration Insulation
S-series	1x1 – 8x1	Steel, Titanium	6 – 54	60	10	Symmetric	Fully insulated** + 200 mm along pipes on one side. (S1597959, 3)
S-series	1x1 – 8+8x5	Steel, Titanium	6 – 54	60	10	Symmetric	Fully insulated* + 500 mm along pipes on one side. (S1597959, 4)
S-series	1x1 – 8x1	Bundle (Steel)	8 – 50	60	10	Symmetric	Fully insulated** + 200 mm along pipes on one side. (S1597936, 3)
S-series	1x1 – 8+8x5	Bundle (Steel)	8 – 50	60	10	Symmetric	Fully insulated* + 500 mm along pipes on one side. (S1597936, 4)
S-series	1x1 – 8x1	Copper, CuNi	6 – 54	60	10	Symmetric	Fully insulated + 600 mm along pipes on one side. (S1597976, 1)
SBTB-series	1x1 – 8x1	Steel	6 – 30	200+	10	Symmetric	None. (S1597993, 1)

\* No insulation between pipes.

\*\* No insulation between pipes. Sleeve is insulated, but no additional insulation along division.

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

Frame type	Size	Pipe material	Pipe diameter (OD) [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Penetration Insulation
S-series	1x1 – 8x1	Steel	6 – 30	60	10	Top side Symmetric	Partially insulated on the underside. (S1597959, 1)
S-series	1x1 – 8+8x5	Steel, Titanium	6 – 50	60	10	Top side Symmetric	Fully insulated* + 350 mm along the pipes on the underside. (S1597959, 2)
S-series	1x1 – 8x1	Bundle (Steel)	8 – 50	60	10	Top side Symmetric	Fully insulated* + 350 mm along pipes on the underside. (S1597936, 1)
S-series	1x1 – 8+8x5	Bundle (Steel)	8 – 50	60	10	Top side Symmetric	Fully insulated* + 350 mm along pipes on the underside. (S1597936, 2)
S-series	1x1 – 8x1	Copper, CuNi	6 – 54	60	10	Top side Symmetric	Fully insulated + 650 mm along pipe on the underside. (S1597976, 2)
SK-series	1x1 – 8x1	Steel, Titanium	6 – 54	100 – 400	10	Any	Fully insulated* + 350 mm along pipes on the underside. (S1597973, 1)
SK-series	1x1 – 8x1	Steel, Titanium	6 – 30	100 – 200	10	Top side	Fully insulated along pipes on the underside. (S1597973, 2)
SK-series	1x1 – 8x1	Bundle (Steel)	6 – 54	100 – 400	10	Any	Fully insulated* + 350 mm along pipes on the underside. (S1597981, 1)

\* No insulation between pipes.

The insulation material used has 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.

### Type Examination documentation

Test report No. 6P02249 dated 17 June 2016 from SP, Borås, Sweden.  
Test report No. RS-17/B-395/E dated 30 October 2017 from CTO, Gdansk, Poland.  
Test report No. RS-18/B-484/E dated 10 December 2018 from CTO, Gdansk, Poland.  
Test report No. RS-18/B-485/E dated 10 December 2018 from CTO, Gdansk, Poland.  
Test report No. 9P02428 dated 13 September 2019 from SP, Borås, Sweden.  
Test report No. PGB10174A dated 13 July 2022 from DBI, Hvidovre, Denmark.  
Test report No. RS-22/B-336/E dated 28 October 2022 from CTO, Gdansk, Poland.  
Test report No. RS-22/B-337/E dated 28 October 2022 from CTO, Gdansk, Poland.  
Test report No. PGB10233A dated 20 December 2022 from DBI, Hvidovre, Denmark.  
Test report No. RS-23/B-104/E dated 25 April 2023 from CTO, Gdansk, Poland.  
Test report No. PGB10220A dated 8 May 2023 from DBI, Hvidovre, Denmark.  
Test report No. PGB10222A dated 25 October 2023 from DBI, Hvidovre, Denmark.  
Test report No. RS-23/B-339/E dated 3 November 2023 from CTO, Gdansk, Poland.  
Test report No. PGB10221A dated 24 November 2023 from DBI, Hvidovre, Denmark.

Drawing No. S1597927 Rev. B dated 13 May 2024 from maker.  
Drawing No. S1597936 Rev. C dated 13 May 2024 from maker.  
Drawing No. S1597940 Rev. A dated 26 October 2023 from maker.  
Drawing No. S1597959 Rev. C dated 13 May 2024 from maker.  
Drawing No. S1597962 Rev. B dated 13 May 2024 from maker.  
Drawing No. S1597969 Rev. A dated 26 October 2023 from maker.  
Drawing No. S1597973 Rev. A dated 26 October 2023 from maker.  
Drawing No. S1597976 Rev. C dated 13 May 2024 from maker.  
Drawing No. S1597980 Rev. A dated 25 October 2023 from maker.  
Drawing No. S1597981 Rev. A dated 25 October 2023 from maker.  
Drawing No. S1597993 Rev. B dated 13 May 2024 from maker.

### Tests carried out

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

### 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 if applicable (see first page).

## 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 frame (S, S EX, SF, SO, SFO, SR/T, SR/S, SRC r20, SRC r40, and SRC r60) in height 1-8 and width 60-120, and combinations thereof, welded to a steel section.  
The steel frame is filled with Roxtec halogen free RM modules\*. Assembled with Roxtec wedge (standard, Ex or ES) 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) welded or bolted to the steel section.  
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) welded to the steel section.  
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 4.0 bar watertightness and 2.67 bar gastightness for steel, titanium, copper and CuNi pipes.

Approved for penetration in steel bulkheads or decks limited to a pressure of 4.0 bar watertightness and 2.0 bar gastightness for bundle pipes.

For bolted versions with gasket and self-tapping screws, the pressure is limited to 3.33 bar watertightness and 1.67 bar gastightness.

For SFOHK versions, the pressure is limited to 2.67 bar watertightness.

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

### Type Approval documentation

Test report No. MLM 020133 dated 26 February 2002 from DNV Malmö.  
Test report No. MLM 020400 dated 25 March 2002 from DNV Malmö.  
Test report No. MLM 020401 dated 25 March 2002 from DNV Malmö.  
Test report No. MLM 020408 dated 3 June 2002 from DNV Malmö.  
Test report No. MLM 060561 dated 1 December 2006 from DNV Malmö.  
Test report No. N141CR4U, Rev.1 dated 23 March 2017 from maker witnessed by DNV GL.

### Tests carried out

Pressure tests with water and Helium according to DNV Type Approval Programme 8.471.19-1.