



Certificate Of Fire Approval

This is to certify that the product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	Roxtec International AB
Address	Box 540, Karlskrona, 371 23, Sweden
Type	A-60 Pipe Penetration
Description	Fire Resisting Pipe Penetration Seals – Type: “Roxtec Sleeve-It Pipe Penetration Seals” for A Class Bulkheads and Decks
Trade Name	Roxtec Sleeve-It Pipe Penetration Seals
Specified Standard	IMO Res. MSC.307 (88)-(2010 FTP Code) Annex 1 Part 3 IMO Res. MSC.61 (67)- (FTP Code) Annex 1 Part 3 IMO Res. MSC.307 (88)-(2010 FTP Code) Section 8 IMO MSC/Circ.1120 IMO MSC.1/Circ.1488

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register Marine Polska sp. z o. o. of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document and its supplementary Type Approval Terms and Conditions form part of this Certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Al Zwycięstwa 13a, Gdańsk, 80-219, Poland

Marta Walk

Fire & Safety - Senior Specialist to Lloyd's Register Marine Polska sp. z o. o.
A member of the Lloyd's Register group

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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2493474SF

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

This is a renewal and amendment of certificate number LR2090258SF-02.

APPROVAL DOCUMENTATION

TEST REPORTS

CTO Test Laboratory, 65 Szczecińska, 80-392 Gdańsk, Poland, Test report numbers RS-19/B-356/E dated 18th October 2019, RS-19/B-424/E, dated 27th November 2019, RS-18/B-265/E, dated 17th September 2018, RS-18/B-423/E dated 19th November 2018, RS-20/B-081/E dated 31st March 2020, RS-21/B-241/E dated, 31st June 2021, RS-21/B-518/E dated 15th December 2021, RS-22/B-153/E dated 28th October 2022, RS-22/B-337/E dated 28th October 2022, RS-23/B-105/E & RS-23/B-106/E both dated 23rd May 2023, RS-23/B-224/E dated 2nd October 2023, RS-23/B-225/E dated 20th August 2023 and RS-23/B-340/E dated 3rd November 2023

DBI Test Laboratory, Jernholmen 12, DK-2650 Hvidovre, Denmark, Test report numbers PGA10801A dated 29th August 2016, PGA10871Arev2 dated 16th January 2018, PGA11388A dated 14th August 2019, and PGA11611A dated 11 January 2020, PGB10030A dated 16th July 2020, PGB10047A dated 30th November 2020, PGB10167A dated 18th March 2022, PGB10169A dated 18th March 2022, PGB10110A dated 27th April 2021, PGB10172A 17th dated June 2022, PGB10032A dated 1st July 2022, PGB10177A 4th November 2022, PGB10218A dated 10th July 2023 and PGB10340A dated 22nd May 2024

RISE, Research Institute of Sweden, P.O. Box 857, SE-501 15 Borås, Sweden; Test Report numbers 5P00771 dated 25th November 2015, 5P00772-1 dated 10th December 2015, 5P08394 dated 2nd March 2016, 5P08395, dated 17th March 2016, 6P02249 dated 17th August 2017, 7P02024, dated 08th June 2017, 8P04040, dated 13th August 2018, 8P07092 rev 1 dated 16th January 2020

Warrington Fire, Holmesfield Road, Warrington, Cheshire WA1 2DS, UK; Test Report numbers 180251A, dated 26th May 2009, 1883387A, dated 23rd October 2009, 1883387B, dated 23rd October 2009, 184391A dated 17th December 2009, 190890A dated, 28th May 2010, 198004A, dated 7th December 2010, 303584A dated 7th April 2011, 303585 dated 17th February 2011, 207171A dated 17th June 2011, 309638A dated 20th September 2011, 309855A dated 5th October 2011, 313700 dated 20th January 2012, 314669 dated 19th January 2011, 314670 dated 25th June 2012, 316943 dated 25th June 2012, 320402A dated 29th October 2012, 324083 dated 27th November 2012, 325332 dated 14th January 2013, 327509 dated 10th July 2013, 329449 dated 13th August 2013, 330891 dated 5th September 2013, 330891 dated 3rd July 2013, 334429 dated 17th December 2013, 337717 dated 13th May 2014

DNV witness statement LDN-08-045 dated 9th May 2008

MANUFACTURER'S DRAWINGS

S1595950, S1595951, S1596238, S1596239, S1598562, S1560502, S1561386, S1561527 and S1598645, S1603869, S1603871, S1538623, S1036168 and S1528866, S1605549

Alternative approved drawings: S1557740, S1557766, S1559656, S1560085, S1560092, S1560308, S1560129, S1560134, S1560148, S1559819, S1561005, S1560122, S1557740, S1560316, S1560502, S1561386 and S1561527


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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2493474SF

CONDITIONS OF CERTIFICATION

1. "Roxtec sealing system: Sleeve-It steel divisions" consist of a steel collar casing lined with intumescent material on the inside and a flange. It is available in FC MAR (fire penetration seal) and WT MAR (Fire/Watertight penetration seal) versions depending on application. The Sleeve-It is installed onto a steel division by welding (FC/WT MAR) or bolting (FC MAR) depending on version. Marine graded sealant is applied during the installation to achieve a cold smoke seal.
2. Details of penetration sizes and applications are given in tables below.
3. Approved for use in class A-0, A-15 and A-30 when the penetration system is insulated as A-60 and in addition the division is to be insulated with A-60 insulation at least 200 mm around the penetration.
4. Approval for use in class A-15 and A-30 when the penetration system is insulated are given in drawings S1603869 and S1603871
5. Approved for use in B-15 divisions, insulation details are given in S1598645. The collar may be installed by either bolting, tack welding, using self-tapping screws or with insulation pins and approved marine grade silicon.
6. Details of hydrostatic and pneumatic pressure performance are gives in certificate below.
7. The Certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products, whether manufactured by themselves or their licensee manufacturers, if agreed by Lloyd's Register, are fully compliant with the relevant statutory regulations and Lloyd's Register Class Rules as applicable and designed, manufactured and installed to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties.
8. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype.

 This product has been verified to be fully in accordance with Transport Canada Procedure TP14621E "Procedures for approval of life-saving appliances and fire safety systems, equipment and products" and is suitable to be placed on Canadian Flagged vessels.

**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2493474SF****Table 1. Approved Pipe Penetrations in A-60 Steel Bulkhead**

Pipe material	Pipe diameter (OD) [mm]	Sleeve position	Insulation details	Insulation drawing
ABS	16-225	Non-Insulated	No additional insulation required	S1595950, No.01
	16-114	Insulated	Additional ring of A-60 insulation to be applied	S1595950, No.05
	114	Insulated	No additional insulation required	S1595950, No.02
Beverage multipipe (with outer insulated jacket passing through fire collar/seal)	100	Non-Insulated	No additional insulation required	S1595950, No.01
	75-100	Insulated	No additional insulation required	S1595950, No.02
PB	16-160	Non-Insulated	No additional insulation required	S1595950, No.01
	16-225	Non-Insulated	Additional ring of A-60 insulation to be applied	S1595950, No.03
	16-160	Insulated	No additional insulation required	S1595950, No.02
	16-225	Insulated	Additional ring of A-60 insulation to be applied	S1595950, No.04
PE / HDPE	16-225	Non-Insulated	Additional ring of A-60 insulation to be applied	S1595950, No.03
	200-225	Non-Insulated	No additional insulation required	S1595950, No.01
	16-225	Insulated	No additional insulation required	S1595950, No.02
	16-315	Insulated	Addition of multiple rings of A-60 insulation to be applied	S1595950, No.09
PE/ALU/PE ¹⁾	16	Non-Insulated	No additional insulation required	S1595950, No.01
	16-63	Non-Insulated	Additional wrap of A-60 insulation to be applied to pipe	S1595950, No.07
	16-75	Non-Insulated	Additional wrap of A-60 insulation to be applied to pipe	S1595950, No.10
	16	Insulated	No additional insulation required	S1595950, No.02
	16-75	Insulated	Additional wrap of A-60 insulation to be applied to pipe	S1595950, No.08
PP / PPR / PPML / PPFR	16-200	Non-Insulated	Additional ring of A-60 insulation to be applied	S1595950, No.03
	32-200	Non-Insulated	No additional insulation required	S1595950, No.01
	16-200	Insulated	Additional ring of A-60 insulation to be applied	S1595950, No.06
	40-200	Insulated	No additional insulation required	S1595950, No.02
Pre-insulated pipe (Diameter including outer jacket)	75-315	Non-Insulated	Additional wrap of A-60 insulation to be applied to pipe	S1595950, No.07
PVC (Including uPVC & cPVC)	16-225	Non-Insulated	Additional ring of A-60 class insulation to be applied	S1595950, No.03
	16-322	Non-Insulated	No additional insulation required	S1595950, No.01
	16-200	Insulated	No additional insulation required	S1595950, No.02
	16-225	Insulated	Additional ring of A-60 insulation to be applied	S1595950, No.04
	16-322	Insulated	Additional ring of A-60 insulation to be applied	S1595950, No.05
PVDF	169	Non-Insulated	No additional insulation required	S1595950, No.01
	169	Insulated	No additional insulation required	S1595950, No.02

1) PE/ALU/PE pipes with added insulation jacket are described in S1598562 No.01 & No.02.



DESIGN APPRAISAL DOCUMENT

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2493474SF

Table 2. Approved Pipe Penetrations in A-60 Steel Deck

Pipe material	Pipe diameter (OD) [mm]	Sleeve position	Insulation details	Insulation drawing
ABS	16-219	Insulated	No additional insulation required	S1595951, No.01
	16-225	Insulated	Additional ring of A-60 insulation to be applied	S1595951, No.03
	16	Non-Insulated	No additional insulation required	S1595951, No.02
Beverage multipipe (with outer insulated jacket passing through fire collar/seal)	75-100	Insulated	No additional insulation required	S1595951, No.01
	75-100	Non-Insulated	No additional insulation required	S1595951, No.02
PB	16-225	Insulated	No additional insulation required	S1595951, No.01
	16-225	Non-Insulated	No additional insulation required	S1595951, No.02
PE / HDPE	16-225	Insulated	Additional ring of A-60 insulation to be applied	S1595951, No.03
	63-225	Insulated	No additional insulation required	S1595951, No.01
	16-225	Non-Insulated	Additional ring of A-60 insulation to be applied	S1595951, No.04
	25-225	Non-Insulated	No additional insulation required	S1595951, No.02
PE/ALU/PE1)	16-63	Insulated	No additional insulation required	S1595951, No.01
	16-63	Non-Insulated	No additional insulation required	S1595951, No.02
PP / PPR / PPML / PPFR	16-320	Insulated	No additional insulation required	S1595951, No.01
	16-110	Non-Insulated	No additional insulation required	S1595951, No.02
Pre-insulated pipe (Diameter including outer shell/ jacket)	75-315	Insulated	Addition of multiple rings of A-60 insulation to be applied	S1595951, No.05
PVC (Including uPVC & cPVC)	16-225	Insulated	No additional insulation required	S1595951, No.01
	16-321	Insulated	Addition wrap of A-60 insulation to be applied to pipe	S1595951, No.06
	16-160	Non-Insulated	No additional insulation required	S1595951, No.02
	16-321	Non-Insulated	Additional ring of A-60 insulation to be applied	S1595951, No.07
PVDF	48-166	Insulated	No additional insulation required	S1595951, No.01
	48-166	Non-Insulated	No additional insulation required	S1595951, No.02

1) PE/ALU/PE pipes with added insulation jacket are described in S1598562 No.05 & No.06.

**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2493474SF****Table 3. Approved Pipe Penetrations in A-0 Steel Bulkhead**

Pipe material	Pipe diameter (OD) [mm]	Sleeve position	Insulation details	Insulation drawing
ABS	16-225	Non-Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.03
	16-114	Stiffened	Additional multiple rings of A-60 insulation to be applied	S1596239, No.07
	114	Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.04
Beverage multipipe (with outer insulated jacket passing through fire collar/seal)	100	Non-Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.03
	75-100	Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.04
PB	16-160	Non-Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.03
	16-225	Non-Stiffened	Additional multiple rings of A-60 insulation to be applied	S1596239, No.05
	16-160	Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.04
	16-225	Stiffened	Additional multiple rings of A-60 insulation to be applied	S1596239, No.06
PE / HDPE	16-225	Non-Stiffened	Additional multiple rings of A-60 insulation to be applied	S1596239, No.05
	200-225	Non-Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.03
	16-225	Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.04
	16-315	Stiffened	Additional multiple rings of A-60 class insulation to be applied	S1596239, No.10
PE/ALU/PE ¹⁾	16-75	Non-Stiffened	No additional insulation required	S1596239, No.01
	16-75	Stiffened	No additional insulation required	S1596239, No.02
PP / PPR / PPML / PPRF	20-169	Non-Stiffened	No additional insulation required	S1596239, No.01
	16-200	Non-Stiffened	Additional multiple rings of A-60 insulation to be applied	S1596239, No.05
	32-200	Non-Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.03
	20-169	Stiffened	No additional insulation required	S1596239, No.02
	16-200	Stiffened	Additional multiple rings of A-60 insulation to be applied	S1596239, No.08
	20-200	Stiffened	Additional ring of A-60 class insulation to be applied	S1596239, No.04
Pre-insulated pipe (Diameter including outer shell/jacket)	75-315	Non-Stiffened	Additional wrap of A-60 insulation to be applied to pipe	S1596239, No.09
PVC (Including uPVC & cPVC)	16-160	Non-Stiffened	No additional insulation required	S1596239, No.01
	16-322	Non-Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.03
	16-160	Stiffened	No additional insulation required	S1596239, No.02
	16-200	Stiffened	Additional ring of A-60 insulation to be applied	S1596239, No.04
	16-225	Stiffened	Additional multiple rings of A-60 insulation to be applied	S1596239, No.06
	16-322	Stiffened	Addition of multiple rings of A-60 insulation to be applied	S1596239, No.07
PVDF	169	Non-Stiffened	Additional ring of A-60 insulation to be applied	S1595950, No.03
	169	Stiffened	Additional ring of A-60 insulation to be applied	S1595950, No.04

1) PE/ALU/PE pipes with added insulation jacket are described in S1598562 No.04 & No.03.

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**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2493474SF****Table 4. Approved Pipe Penetrations in A-0 Steel Decks**

Pipe material	Pipe diameter (OD) [mm]	Sleeve position	Insulation details	Insulation drawing
ABS	16-219	Underside	Additional ring of A-60 insulation to be applied	S1596238, No.03
	16-225	Underside	Additional multiple rings of A-60 insulation to be applied	S1596238, No.05
	16	Top side	Additional ring of A-60 insulation to be applied	S1596238, No.04
Beverage multipipe (with outer insulated jacket passing through fire collar/seal)	75-100	Underside	Additional ring of A-60 insulation to be applied	S1596238, No.03
	75-100	Top side	Additional ring of A-60 insulation to be applied	S1596238, No.04
PB	16-225	Underside	Additional ring of A-60 insulation to be applied	S1596238, No.03
	16-225	Top side	Additional ring of A-60 insulation to be applied	S1596238, No.04
PE / HDPE	16-225	Underside	Additional multiple rings of A-60 insulation to be applied	S1596238, No.05
	63-225	Underside	Additional ring of A-60 insulation to be applied	S1596238, No.03
	16-225	Top side	Additional multiple rings of A-60 insulation to be applied	S1596238, No.06
	25-225	Top side	Additional ring of A-60 insulation to be applied	S1596238, No.04
PE/ALU/PE ¹⁾	16-63	Underside	No additional insulation required	S1596238, No.01
	16-63	Top side	No additional insulation required	S1596238, No.02
PP / PPR / PPML / PPFR	16-320	Underside	Additional ring of A-60 insulation to be applied	S1596238, No.03
	16-110	Top side	Additional ring of A-60 insulation to be applied	S1596238, No.04
Pre-insulated pipe (diameter including outer shell/jacket)	75-315	Underside	Additional multiple rings of A-60 insulation to be applied	S1596238, No.07
PVC (Including uPVC & cPVC)	16-50	Underside	No additional insulation required	S1596238, No.01
	16-225	Underside	Additional ring of A-60 insulation to be applied	S1596238, No.03
	16-321	Underside	Additional wrap of A-60 insulation to be applied to the pipe	S1596238, No.08
	50-63	Top side	No additional insulation required	S1596238, No.02
	16-160	Top side	Additional ring of A-60 insulation to be applied	S1596238, No.04
	16-321	Top side	Addition of multiple rings of A-60 class insulation to be applied	S1596238, No.09
PVDF	48-166	Underside	Additional ring of A-60 class insulation to be applied	S1596238, No.03
	48-166	Top side	Additional ring of A-60 class insulation to be applied	S1596238, No.04

1) PE/ALU/PE pipes with added insulation jacket are described in S1598562 No.07 & No.08

**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2493474SF****Table 5: Approved pipe penetration in A-60 steel Bulkhead**

Pipe material	Pipe diameter (OD) [mm]	Sleeve position	Insulation details	Insulation drawing
Steel	19	Non-Insulated	Additional wrap of A-60 class insulation to be applied to pipe	S1605549, No.01
	19-165	Non-Insulated	Addition of multiple wraps of A-60 class insulation to be applied to pipe	S1605549, No.02
	19	Insulated	Additional wrap of A-60 class insulation to be applied to pipe	S1605549, No.03
	19-168	Insulated	Addition of multiple wraps of A-60 class insulation to be applied to pipe	S1605549, No.04
	19-76	Insulated	Additional wrap of A-60 class insulation to be applied to pipe	S1605549, No.06
	19-76	Non-insulated	Additional wrap of A-60 class insulation to be applied to pipe	S1605549, No.07
Copper	16-90	Non-Insulated	Additional wraps and cookie of A-60 class insulation to be applied to pipe	S1605549, No.05

Notes

- Below penetration seal variants are also approved for Sleeve-It transition collar.

Steel pipe to plastic pipe transition in A-60 steel Bulkheads

Pipe material	Arrangement	Sleeve Position	Drawing No.
PP/PPR/PPML/PPFR	50-75 (steel pipe) transitioning to 50-90 (plastic pipe)	Non-insulated	S1560502
	50-75 (steel pipe) transitioning to 50-90 (plastic pipe)	Insulated	S1560502

Steel pipe to plastic pipe transition in A-60 steel Decks

Pipe material	Arrangement	Sleeve Position	Drawing No.
PP/PPR/PPML/PPFR	50-90 (steel pipe) transitioning to 50-90 (plastic pipe)	Insulated	S1561386

Steel pipe to plastic pipe transition in A-0 steel Decks

Pipe material	Arrangement	Sleeve Position	Drawing No.
PP/PPR/PPML/PPFR	50-90 (steel pipe) transitioning to 50-90 (plastic pipe)	Underside	S1560502

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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2493474SF

2. Pressure testing data

For Fire Collar (FC MAR)

- For fire collar with approved marine sealant, watertight to 1.5Bar for 60 minutes
- For fire collar with approved marine sealant, gastight to 30mbar for 30 minutes

For Watertight Collar (WT MAR)

- For watertight collar, watertight to 3.5Bar for 60 minutes
- For watertight collar, gastight to 1Bar for 30 minutes

PLACE OF PRODUCTION

Roxtec International AB

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M. Walk

Marta Walk
Senior Specialist, Fire & Safety
Statutory Discipline Team, Marine & Offshore
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s)