



UK TYPE-EXAMINATION (MODULE B) CERTIFICATE

This is to certify that:

Lloyd's Register Marine Limited (LRM Ltd) did undertake the relevant type approval procedures for the type of equipment identified below which was found to be in compliance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended, subject to any conditions in the schedule attached hereto.

Manufacturer	Roxtec International AB
Address	Box 540, S-37123, Karkskrona, Sweden
Reference	MSN1874 Amendment 6
Regulation Item (No. & Item Designation)	UK/3.26b Penetrations Through 'A' Class Divisions - Pipe, Duct, Trunk Etc. Penetrations
Product Type	Fire Penetration Seal
Product Description	Fire Resisting Plastic Pipe Penetration Seals for A Class Steel Bulkheads and Decks
Trade Name	Roxtec Sleev-it
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

The attached Design Appraisal Document (schedule) forms part of this certificate. This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

This certificate is issued under the authority of 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 "UK 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.

Lloyd's Register Marine Limited (Reg. no. 13281335) is a limited company registered in England and Wales. Registered office: 71 Fenchurch Street, London, EC3M 4BS, UK.
A member of Lloyd's Register group.

Matt Tillman

UKI Marine & Offshore TSO Manager
For and on behalf of Lloyd's Register Marine Ltd. (8512)

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The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions and the Merchant Shipping (Marine Equipment) Regulations 2016, as amended for the UK Type Examination of marine equipment for use on UK ships

This Design Appraisal Document forms part of the Certificate.

APPROVAL/EXAMINED DOCUMENTATION

Lloyds Register witness statement SOU 0901586/1 dated 8th January 2010.

DNV witness statement on pressure testing LDN-08-045 dated 9th May 2008.

- a) Drawing S1528866 Revision (A) and associated Amendment to Installation Instructions Roxtec Sleeve-it Fire Penetration Seal ASS2012001301 (DOC-001830 Rev A).
- b) Drawing S1538623 Revision (A) - PVC insert sleeve.
- c) Drawing S1036168 Revision (B) - Sleeve-it WT Deck Penetration (Wavin SI Tech PPr pipe). Design variation referenced by Information Drawing S1029962 revision (A).

TEST REPORTS

RISE, Research Institute of Sweden, P.O. Box 857, SE-501 15 Boras, Sweden;

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 2016, 7P02024, dated 08th June 2017, 8P04040, dated 13th August 2018, and 8P07092rev 1 dated 16th January 2020.

DGA Techniques Aéronautiques Centre d'Essais Aéronautiques de Toulouse. 47 Rue Saint Jean, BP93123 Balma Cedex France ;

878/07/A/NP/R 102 dated 19th February 2008, and 881/07/A/NP/R 102 dated 19th February 2008.

Warrington Fire, Holmesfield Road, Warrington, Cheshire WA1 2DS, UK;

164476 B dated 23rd July 2007, 170080/A dated 30th April 2008, 170080/B dated 30th April 2008, 175486/A dated 31st October 2008, 177105A dated 6th January 2009, 180251A, dated 26th May 2009, 183387A dated 23rd October 2009, 183387B dated 23rd October 2009, 184391/A dated 17th December 2009, 190890/A dated 26th May 2010, 198004A dated 7th December 2010, 303584A dated 7th April 2011, 303585A dated 7th April 2011, 307171A Issue 2 dated 17th June 2011, 309638A dated 20th September 2011, 309855A dated 23rd December 2011, 313700 dated 30th January 2012, 314669 dated 26th April 2012, 314670 dated 25th June 2012, 316943 dated 2012, 320402A dated 29th October 2012, 324083 dated 24th April 2013, 325332 dated 10th July 2013, 327509 dated 10th July 2013, 329449 dated 13th August 2013, 330891 dated 5th September 2013, 334429 dated 17th December 2013, and 337717 dated 13th May 2014.

Danish Institution of Fire and Security Technology, Jemholmen 12, DK-2650 Hvidovre Denmark;

PGA10801A dated 29th August 2016, PGA10871Arev2 dated 16th January 2018, PGA11388A dated 14th August 2019, and PGA11611A dated 11 January 2020

Centrum Techniki Okretowej S.A, 65 Szczecinska, 80-392 Gdansk, Poland;

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-19/B-423/E dated 19th November 2011, and RS-20/B-081/E dated 31st March 2020.

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CONDITIONS OF CERTIFICATION

1. Each item, batch or lot of the equipment is to have the “UK Conformity Mark” affixed and be issued with a “UK Declaration of Conformity “affixed after a conformity assessment module is in place.
2. Production items are to be manufactured in accordance with either an approved Production Quality Assurance system (Module D), a Product-Quality assurance system (Module E) or a Product Verification Process (Module F). The UK Conformity Mark cannot be affixed to the product until a conformity assessment module is in place.
3. The certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products are fully compliant with the relevant statutory regulations as applicable and are designed, manufactured and installed to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties.
4. Should a change of Place of Production from that stated below be required i.e. where the stages of manufacture/assembly/testing of this product take place, the new Place of Production is to be advised to us prior to the change taking place. This Certificate will require to be updated for Approval to be maintained.
5. The manufacturer must keep a copy of the UK type-examination certificate, its annexes and additions together with the technical documentation at the disposal of the national authorities for a period of at least 10 years after the UK Conformity Mark has been affixed on the last product manufactured and, in no case for a period shorter than the expected life of the marine equipment concerned.
6. The penetration system is a steel collar which is welded (fully or tack welded) or bolted and fits around plastic pipes, the collar contains intumescent material which activates upon exposure to heat. The intumescent material closes the plastic pipe providing a fire-resistant seal. A layer of Sleeve-it marine fire rated sealant or equivalent can be installed to fill the annular gap between the collar and the pipe.
7. Tables below give penetration details for inclusion in A-0 and A60 steel bulkheads and decks.

Steel Bulkheads A-60				
Pipe Material	Max Pipe O.D. range (mm)	Collar Installation Side	Insulation Details for A-60	Drawing Reference
ABS	114mm	Insulated or non-insulated	No additional insulation required	S1557740
PB	16mm-160mm	Insulated or non-insulated	No additional insulation required	S1557766
PE/HDPE	50mm-225mm	Insulated or non-insulated	No additional insulation required	S1559656
	226mm-315mm	Insulated or non-insulated	An additional 200mm ring of A60 insulation is to be installed around the collar or the pipe : see insulation drawing	S1559656
PP/PPR/PPML/PPFR	32mm-200mm	Insulated or non-insulated	No additional insulation required	S1560085
PVC (inc uPVC & cPVC)	12mm-200mm	Insulated or non-insulated	No additional insulation required	S1560092

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	201mm-225mm	Insulated side only	No additional insulation required	S1560092
	226mm-270mm	Insulated side only	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1560308
	271mm-322mm	Insulated or non-insulated	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1560308

Steel Bulkheads A-60 (Cont.)

PVDF	169mm	Insulated or non-insulated	No additional insulation required	S1560129
PE-AL-PE (multi-layer pipe which may or may not be insulated with an insulation jacket)	16mm-32mm	Insulated or non-insulated	No additional insulation required	S1560134
	33mm-63mm	Insulated or non-insulated	Additional insulation required along length of pipe : see insulation drawing	S1560134
Beverage multi-pipe (with outer insulated jacket passing through fire collar/seal)	75mm-99mm	Insulated side only	No additional insulation required	S1560148
	100mm	Insulated or non-insulated	No additional insulation required	S1560148
Preinsulated Pipes (Outer Diameter including outershell/jacket)	75mm-315mm	non-insulated side only	Additional wrap of A-60 rated insulation around the pipe on the insulated side. Complete length of insulation from the structure to equal 300mm : see insulation drawing	S1559819

Steel Decks A-60

Pipe Material	Max Pipe O.D. range (mm)	Collar Installation Side	Insulation Details for A-60	Drawing Reference
ABS	110mm-219mm	Underside	No additional insulation required	S1557740
PB	16mm-125mm	Topside	No additional insulation required	S1557766
	125mm-225mm	Underside or topside	No additional insulation required	S1557766
PE/HDPE	25mm-225mm	Underside or topside	No additional insulation required	S1559656

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	226mm-320mm	Underside	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1561005
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Steel Decks A-60 (Cont.)				
PVDF	40mm-169mm	Underside or topside	No additional insulation required	S1560129
PE-AL-PE (multi-layer pipe which may or may not be insulated with an insulation jacket)	16mm-63mm	Underside or topside	No additional insulation required	S1560134
Beverage multi-pipe (with outer insulated jacket passing through fire collar/seal)	75mm-100mm	Underside or topside	No additional insulation required	S1560148
Preinsulated Pipes (Outer Diameter including outershell/jacket)	75mm-315mm	Underside	Two additional 100mm rings of A60 insulation are to be installed around the collar and/or pipe : see insulation drawing	S1559819
PP/PPR/PPML/PPFR	16mm-110mm	Underside or topside	No additional insulation required	S1560085
	111mm-225mm	Underside	No additional insulation required	S1560085
	226mm-320mm	Underside	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1561005
PVC (inc uPVC & cPVC)	21mm-225mm	Underside or topside	No additional insulation required	S1560122
	226mm-321mm	Underside or topside	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1561005

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Steel Bulkheads A-0				
PVC (inc uPVC & cPVC)	12mm-160mm	Either	No additional insulation required	S1560092
	161mm-225mm	Either	An additional 200mm ring of A60 insulation is to be installed around the collar or the pipe	S1560092
	226mm-322mm	Either	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1560308
PVDF	169mm	Either	An additional 200mm ring of A60 insulation is to be installed around the collar or the pipe	S1560129
PE-AL-PE (multi-layer pipe which may or may not be insulated with an insulation jacket)	16mm-63mm	Either	No additional insulation required	S1560134
Beverage multi-pipe (with outer insulated jacket passing through fire collar/seal)	75mm-100mm	Either	An additional 200mm ring of A60 insulation is to be installed around the collar or the pipe	S1560148
Preinsulated Pipes (Outer Diameter including outershell/jacket)	75mm-315mm	Collar to be placed on the high fire risk side	An additional 200mm ring of A60 insulation is to be installed around the pipe plus an additional wrap of A-60 rated insulation around the pipe on the insulated side. Complete length of insulation from the structure to equal 300mm : see insulation drawing	S1560316

Steel Bulkheads A-0 (Cont.)				
Pipe Material	Max Pipe O.D. range (mm)	Collar Installation Side	Insulation Details for A-0	Drawing Reference
ABS	114mm	Either	An additional 200mm ring of A60 insulation is to be installed around the collar or the pipe	S1557740
PB	16mm-125mm	Either	No additional insulation required	S1557766

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	126mm-160mm	Either	An additional 200mm ring of A60 insulation is to be installed around the collar or the pipe	S1557766
PE/HDPE	50mm-225mm	Either	An additional 200mm ring of A60 insulation is to be installed around the collar or the pipe	S1559656
	226mm-315mm	Either	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1560308
PP/PPR/PPML/PPFR	20mm-169mm	Either	No additional insulation required	S1560085
	170mm-200mm	Either	An additional 200mm ring of A60 insulation is to be installed around the collar or the pipe	S1560085

Steel Decks A-0

Pipe Material	Max Pipe O.D. range (mm)	Collar Installation Side	Insulation Details for A-0	Drawing Reference
ABS	110mm -219mm	Underside	An additional 200mm ring of A60 insulation is to be installed around the collar	S1557740
PB	16mm-124mm	Topside	An additional 200mm ring of A60 insulation is to be installed around the pipe	S1557766
	125mm-225mm	Underside or topside	An additional 200mm ring of A60 insulation is to be installed around the collar or pipe on the insulated side	S1557766
PE/HDPE	25mm-225mm	Underside or topside	An additional 200mm ring of A60 insulation is to be installed around the collar or pipe on the insulated side	S1559656
	226mm-320mm	Underside	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1561005
PP/PPR/PPML/PPFR	16mm-110mm	Underside or topside	An additional 200mm ring of A60 insulation is to be installed around the collar or pipe on the insulated side	S1560085

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	111mm-225mm	Underside	An additional 200mm ring of A60 insulation is to be installed around the collar	S1560085
	226mm-320mm	Underside	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1561005

Steel Decks A-0 (Cont.)				
PVC (inc uPVC & cPVC)	16mm-50mm	Underside or topside	No additional insulation required	S1560122
	51mm-225mm	Underside or topside	An additional 200mm ring of A60 insulation is to be installed around the collar or pipe on the insulated side	S1560122
	226mm-321mm	Underside or topside	Additional insulation required to cover longer length of seal when installed on the insulated side - See Note 5 and insulation drawing	S1561005
PVDF	40mm-169mm	Underside or topside	An additional 200mm ring of A60 insulation is to be installed around the collar or pipe on the insulated side	S1560129
PE-AL-PE (multi-layer pipe which may or may not be insulated with an insulation jacket)	16mm-31mm	Underside	An additional 200mm ring of A60 insulation is to be installed around the collar on the insulated side	S1560134
	16mm-31mm	Topside	No additional insulation required	S1560134
	32mm-63mm	Underside or topside	No additional insulation required	S1560134
Beverage multi-pipe (with outer insulated jacket passing through fire collar/seal)	75mm-100mm	Underside or topside	An additional 200mm ring of A60 insulation is to be installed around the collar or pipe on the insulated side	S1560148
Preinsulated Pipes (Outer Diameter including outershell/jacket)	75mm-315mm	Underside	A 200mm ring of A60 insulation is to be installed around the collar/seal plus two additional 100mm rings of A60 insulation around the collar and/or pipe : see insulation drawing	S1560316

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8. When installed from the insulated side and when insulation is required (per the insulation drawing), the full length of the Fire Collar (seal) should be fully insulated. Should extra insulation be required, it should either be a 200mm ring of A-60 rated insulation fitted around the seal, or an A-60 rated insulation wrap around the Fire Collar. Please see applicable insulation drawing reference in the tables.
9. Two pipes; 160mm dia. PB and 16mm uPVC fitted with Sleeve-it pipe penetrations and Sleeve-it marine fire rated sealant or equivalent, were subjected to a hydrostatic test and an air pressure test of 1 bar and 0.02 bar respectively and no leakage was reported after 30 minutes, as detailed in the DNV Test Report No.LDN-08-045 dated 31 January 2008. In all cases, the sealant was applied to seal the penetration on both sides of the penetration and the test pressures were applied from either side.
10. Two pipes; 110mm dia. uPVC and 16mm PE fitted with Sleeve-it pipe penetrations, type: "Sleeve-it WT" comprising Sleeve-it EPDM rubber seals, type: "SLV EPDM Grommet", were subjected to a hydrostatic test and an air pressure test at 3.5 bar and 1 bar respectively and no leakage was reported after 30 minutes, as detailed in Lloyd's Register Test Witness Certificate No: SOU 0901586/1 dated 08 January 2010. The "Sleeve-it WT" may be fitted on any one side of the division.
11. The above penetration systems are not to be used for penetrating tank boundaries.
12. All Sleeve-it A-60 collars are suitable for protection of B-15 penetrations.
13. When requested to be used in watertight bulkheads on passenger ships and Special Purpose Ships (SPS), the above penetration systems should be verified for compliance with the requirements given in SOLAS Chapter II-1 Reg.13.2.3 (2009 issue). The above penetration systems have not been approved according to this paragraph.
14. A modified arrangement of the Roxtec Sleeve-it pipe penetration called the "Roxtec Sleeve-it Transition Collar" may be used to protect a plastic pipe transition / connection to a steel pipe. The Roxtec Sleeve-it Transition collar is secured to the steel pipe using a Sleeve-it Rising Clamp. The tables below detail both the horizontal installation when plastic pipe is transitioned to a steel pipe in close proximity to a steel bulkhead and also, deck installations when attached to a steel Scupper / Collecting / Drainage Pot as detailed within the applicable insulation drawings referenced within the tables.
15. Approved Installation Variations for Sleeve-it penetrations are given below;

Steel Bulkheads A-60					
Pipe Material	Max Pipe O.D. range (mm)	Installation Description	Collar Installation Side	Insulation Details for A-60	Drawing Reference
PP/PPR/PPML/PPFR	50-75mm (steel) to 50-90mm (plastic)	Steel pipe to plastic pipe transition - installed less than 450mm away from a bulkhead penetration	Insulated side	Transition Collar and steel pipe up to the Transition Collar to be fully wrapped in A-60 insulation.	S1560502
			Non-insulated side	Steel pipe on the insulated side to be fully wrapped in A-60 insulation for a distance of 450mm.	S1560502

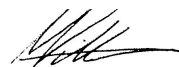
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Steel Decks A-60					
Pipe Material	Pipe O.D. - Steel Pipe to Plastic Pipe (mm)	Installation Description	Collar Installation Side	Insulation Details for A-60	Drawing Reference
PP/PPR/PPML/PPFR	50-90mm (steel) to 50-90mm (plastic)	Steel pipe to plastic pipe transition where steel pipe forms part of or connects to a stainless steel Scupper / Collecting / Drainage Pot (with or without "drainage bell") - Both horizontal (elbow) and vertical (straight) connections	Underside	Scupper Pot to be fully insulated with A-60 rated insulation as well as steel pipe up to Roxtec Transition Collar	S1561386

Steel Decks A-0					
Pipe Material	Pipe O.D. - Steel Pipe to Plastic Pipe (mm)	Installation Description	Collar Installation Side	Insulation Details for A-60	Drawing Reference
PP/PPR/PPML/PPFR	50-90mm (steel) to 50-90mm (plastic)	Steel pipe to plastic pipe transition where steel pipe forms part of or connects to a stainless steel Scupper / Collecting / Drainage Pot (with or without "drainage bell") - Both horizontal (elbow) and vertical (straight) connections	Underside	Scupper Pot to be fully insulated with A-60 rated insulation as well as steel pipe up to Roxtec Transition Collar	S1561527

PLACE OF PRODUCTION

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**For and on behalf of Lloyd's Register Marine Ltd.
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