



Confirmation of Product Type Approval

Company Name: ROXTEC INTERNATIONAL AB

Address: ROMBVAGEN 2 SE 371 65 Sweden

Product: Penetration Device for Bulkhead and Deck Firetight and Watertight Penetrations

Model(s): Sleeve-it marine penetration sealing systems

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	19-HS1914369-PDA	19-NOV-2019	18-NOV-2024
Manufacturing Assessment (MA)	18-GB3595269	07-DEC-2018	08-JAN-2024
Product Quality Assurance (PQA)	NA	NA	NA

Tier

3

Intended Service

Roxtec Sleeve-it Fire Penetration Seal and Roxtec Sleeve-it Watertight Penetration Seal for plastic pipe penetrations in A0, A15, A30 and A60 steel bulkheads and decks. Roxtec Sleeve-it transition collar for transitions between plastic- and steel pipe systems in A0, A15, A30 and A60 steel bulkheads and decks.

Description

Roxtec Sleeve-it marine penetration sealing system is divided into three different product groups.

Roxtec Sleeve-it Fire Penetration Seal consist of an intumescent strip material inserted in an openable stainless steel casing, equipped with an openable flange, intended for bolted or spot welded installation onto steel divisions.

Roxtec Sleeve-it Watertight penetration seal consist of an intumescent strip material inserted in a closed stainless steel casing, equipped with a closed flange with an EDPM rubber grommet, intended for fully welded installation onto steel divisions.

Roxtec Sleeve-it Transition collar consist of an intumescent strip material inserted in an openable stainless steel housing, intended for protections of transitions between plastic pipe and steel pipe systems.

Ratings

Fire Rating: A0, A15, A30 and A60 Bulkheads and Decks as per attachment for various sizes and pipe materials.

Fire penetration Seal: Tested for air tightness up to 30 mbar for pipes with outer diameter 16- 160 mm diameter.

Watertight penetration seal: Watertightness rating 1 bar and air tightness rating 0.5 bar for pipes with outer diameter 16- 110 mm .

Note penetrations in A-30 or A-15 bulkheads and decks must be insulated to A-60 standards since that was the configuration when the penetrations were fire tested

Service Restrictions

- a) Pipe materials and outside diameters specified in the attachment.
- b) Not for use in tank boundaries.
- c) The product or packing is to be marked with the name of the manufacturer and type designation
- d) When requested to be used in watertight bulkheads on passenger ships and Special Purpose Ships (SPS), the penetration system has to comply with the requirements given in SOLAS Ch.II-1 Reg. 13.2.1 (2014 issue). Penetrations passing through watertight bulkheads are subject for separate examination and approval by flag Administration.
- e) Each product is to be supplied with its manual for installation and maintenance.
- f) Unit Certification is not required for this product. If the manufacturer or purchaser's request an ABS Certificate for compliance with a specification or standard, the specification or standard, including inspection standards and tolerances, must be clearly defined.
- g) If penetration seals are to be used in A-15 or A-30 deck or bulkhead, insulation must be to A-60 standard to reflect the tested configuration. Exception are A-0 seals used in A-0 bulkheads/decks.

Comments

- a) All seal types should be installed in accordance with manufacturer's ABS approved installation drawings.
- b) Insulation material is to be A-60 approved type and properly installed to the satisfaction of the Surveyors.
- c) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes, Drawings and Documentation

Approval of the arrangements and materials based on:

Bodycote Warrington fire Test Reports:

164476B Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Ten Specimens of Pipe Penetrations, dated 23 July 2007, initial revision

170080B Fire Resistance Test generally in Accordance with IMO Resolution A.754(18) on an 'A' Class Deck Incorporating Sixteen Specimens of Pipe Penetration Sealing Systems, dated 30 April 2008, initial revision

175486A Fire Resistance Test generally in Accordance with IMO Resolution A.754(18) on an 'A' Class Deck Incorporating Nine Specimens of Pipe Penetration Sealing Systems, dated 31 October 2008, initial revision

177105A Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Eight Specimens of Pipe Penetrations, dated 06 January 2009, initial revision

180251A Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Eleven Specimens of Pipe Penetrations, dated 26 May 2010, initial revision

BRE Test Reports:

223968 A Marine Fire Resistance Test on Ten Sleeve Penetration Sealing Systems Installed in an A-60 steel deck, dated 05 September 2005

Supplementary Test Report 223969A dated 15 September 2005

Exova Warringtonfire Test Reports:

183387A Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Eight Specimens of Pipe Penetration Seals, dated 23 October 2009, initial revision

190890A Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Deck Incorporating Seven Specimens of Pipe Penetration Seals, dated 23 October 2009, initial revision

303584A Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Eight Specimens of Pipe and Cable Penetration Seals, dated 07 April 2011, initial revision

307171A Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Nine Specimens of Pipe Penetration Seals, dated 17 June 2011, Issue 2

309638A Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Deck Incorporating Sixteen Specimens of Pipe Penetration Sealing Systems, dated 20 September 2011, initial revision

309855A Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Ten Specimens of Pipe Penetration Seals, dated 23 December 2011, initial revision

314669 Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Deck Incorporating Twenty Seven Specimens of Pipe Penetration Sealing Systems, dated 26 April 2012, initial revision

314670 Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Sixteen Specimens of Pipe Penetration Seals, dated 25 June 2012, initial revision

316943 Fire Resistance Test in Accordance with IMO Resolution A.754(18) on an 'A' Class Bulkhead Incorporating Seventeen Specimens of Pipe Penetration Seals, dated 26 April 2012, initial revision

320402A Fire Resistance Test in Accordance with IMO Resolution MSC 307/88 Annex 1 Part 3 on an 'A' Class Deck Incorporating Seventeen Specimens of Pipe Penetration Sealing Systems, dated 29 October 2012, initial revision

324083 Fire Resistance Test in Accordance with IMO Resolution MSC.307(88), Annex I:Part 3 on an 'A' Class Bulkhead Incorporating Seventeen Specimens of Pipe Penetration Seals, dated 24 April 2013, initial revision

325332 Fire Resistance Test in Accordance with IMO Resolution MSC 307/88 Annex 1 Part 3 on an 'A' Class Deck Incorporating Eighteen Specimens of Pipe Penetration Sealing Systems, dated 10 July 2013, initial revision

329449 Fire Resistance Test in Accordance with IMO Resolution MSC 307/88 Annex 1 Part 3 on an 'A' Class Deck Incorporating Twenty Four Specimens of Pipe Penetration Sealing Systems, dated 13 August 2013, initial revision

330891 Fire Resistance Test in Accordance with IMO Resolution MSC 307/88 Annex 1 Part 3 on an 'A' Class Deck Incorporating Fifteen Specimens of Pipe Penetration Sealing Systems, dated 5 September 2013, initial revision

334429 Fire Resistance Test in Accordance with IMO Resolution MSC 307/88 Annex 1 Part 3 on an 'A' Class Deck Incorporating Thirteen Specimens of Pipe Penetration Sealing Systems, dated 17 December 2013, initial revision

337717 Fire Resistance Test in Accordance with IMO Resolution MSC.307(88), Annex I:Part 3 on an 'A'

Class Bulkhead Incorporating Eighteen Specimens of Pipe Penetration Seals, dated 13 May 2014, initial revision

Gerbam Test reports:

878/07/A/NP/R 102 Fire Resistance of Type A Penetrations in a Type A60 deck in line with the Code for FTP Part 3 (IMO Resolution A754(18)), dated 28 March 2007, initial issue

Tightness Test Reports:

DNV LDN-08-045 with Setup drawing Annex-1 & 2, Lloyds SOU 090158_1 with Setup drawing S1041742 rev.A, dated 31 January 2005

DNV Survey report LDN-8-045 Sleeve-It Marine Fire Collar, DWg. No. SLV 174 Rev. a dated 31 Jan 2008

Lloyd's Register Report SOU 0901586/1 Sleeve-it Fire Systems Limited Fire Collars for Plastics Pipe Penetrations dated 08 January 201

Roxtec Drawings:

ASS2012001101 Sleeve-it Transition Collar Installation Dwg

ASS2012001201 Sleeve-it Watertight Penetration Seal

ASS2012001301 Sleeve-it Fire Penetration Seal

S1026329 Fire Penetration Seal Assembly, Rev G dated 2013-10-11

S1026334 Transition Collar Assembly, Rev B dated 2013-01-07

S1026339 Watertight Penetration Seal Assembly, Rev. D, dated 2013-01-10

S1039663 FC/WT Installation A15-A60 St Blkh/d/Deck, Rev. B dated 2014-06-05

S1039664 FC/WT Installation A0 St Blkh/d/Deck, rev A, dated 2014-06-10

S1039696 TR Collar Installation A15-A60 St Blkh/d, rev A dated 2014-06-09

S1039702 TR Collar Installation A15-60 St Deck , rev. A dated 2014-06-10

Term of Validity

This Product Design Assessment (PDA) Certificate remains valid until 18/Nov/2024 or until the Rules and/or Standards used in the assessment are revised or until there is a design modification warranting design reassessment (whichever occurs first).

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or previous to the effective date of the ABS Rules and standards applied at the time of PDA issuance. Use of the Product for non-ABS units is subject to agreement between the manufacturer and intended client.

ABS Rules

2019 Steel Vessels Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-3/7.11

2019 Offshore Support Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-3/7.11

2019 Marine Vessel Rules 1-1-4/7.7, 1-1-A3, 1-1-A4, 4-6-3/7.11

International Standards

SOLAS Ch. II-2, Reg. 9.3.1 (2014 Consolidated Edition), as amended

IMO Resolution A.754 (18)

EU-MED Standards

NA

National Standards

NA

Government Standards

NA

Other Standards

NA



A handwritten signature in black ink, appearing to read "Joseph W. Wilson".

Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 12-Mar-2020 6:31

ABS has used due diligence in the preparation of this certificate, and it represents the information on the product in the ABS Records as of the date and time the certificate is printed.

If the Rules and/or standards used in the PDA evaluation are revised or if there is a design modification (whichever occurs first), a PDA revalidation may be necessary.

The continued validity of the MA is dependent on completion of satisfactory audits as required by the ABS Rules. The validity of both PDA and MA entitles the product to receive a **Confirmation of Product Type Approval**.

Acceptance of product is limited to the "Intended Service" details prescribed in the certificate and as per applicable Rules and Standards.

This Certificate is valid for installation of the listed product on ABS units which exist or are under contract for construction on or prior to the effective date of the ABS Rules and standards applied at the time of PDA issuance. ABS makes no representations regarding Type Approval of the Product for use on vessels, MODUs or facilities built after the date of the ABS Rules used for this evaluation.

Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. The manufacturer is responsible to maintain compliance with all specifications applicable to the product design assessment. Unless specifically indicated in the description of the product, certification under type approval does not waive requirements for witnessed inspection or additional survey for product use on a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS.

Due to wide variety of specifications used in the products ABS has evaluated for Type Approval, it is part of our contract that; whether the standard is an ABS Rule or a non-ABS Rule, the Client has full responsibility for continued compliance with the standard.

Questions regarding the validity of ABS Rules or the need for supplemental testing or inspection of such products should, in all cases, be addressed to ABS.

A60 BULKHEAD PENETRATION RESULTS

A60 Steel Bulkhead (penetration seal can be fitted on EITHER side of bulkhead (exposed AND unexposed) A-60 insulation must be applied to use, even if for A-15 or A-30 penetration			
Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
ABS	114	177105A, 180251A	S1039663
PB	15-160	164476B, 303584A, 223968A, 183387A, 223969A	S1039663
PE	15-225	164476B, 180251A, 183387A	S1039663
uPVC	50- 160	177105A, 316943	S1039663
PE/ALU/PE	16-63	337717	S1039663
PP (includes PP/sePP/PP and PPr)	40-200	314670, 316943, 177105, 223968A	S1039663
PVC	200	314670	S1039663
PVDF	169	316943	S1039663
Bevex Python Multipipe	100	316943, 324083	S1039663

A60 Steel Bulkhead (penetration seal fitted on UNEXPOSED side of bulkhead) A-60 insulation must be applied to use, even if for A-15 or A-30 penetration			
Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
uPVC	160	177105A	S1039663

A60 Steel Bulkhead (penetration seal fitted on EXPOSED side of bulkhead) A-60 insulation must be applied to use, even if for A-15 or A-30 penetration			
Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
PVDF	169	316943	S1039696
PVC	200	314670	S1039696
uPVC	160	316943	S1039696

A-0 Steel Bulkhead (penetration seal fitted on EITHER side of bulkhead)			
Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
PP	40- 169	303584A	S1039664
PVC	20-160	307171A, 309855A	S1039664
PE/ALU/PE	16-63	337717	S1039664

Pipe Materials and OD for Roxtec Sleeve-it Transition collar connected to steel pipe

A-0 Steel Bulkhead (penetration seal fitted on EITHER side of bulkhead)				
Type of Plastic Pipe	Plastic Pipe Diameter (mm)	Steel Pipe Diameter (mm)	Test Reports	Installation Drawing
PP	50	50	177105A	S1039664
PPFR	90	75	177105A	S1039664

A60 DECK PENETRATION RESULTS

A60 Steel Deck (penetration seal can be fitted on EITHER side of deck (exposed AND unexposed) A-60 insulation must be applied to use, even if for A-15 or A-30 penetration

Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
CPVC	21-321	314669	S1039663
BEVEX	13	325332, 329449	S1039663
PVC	25	190890/A	S1039663
uPVC	160	878-07-A-NP-R-10	S1039663
PE/ALU/PE			S1039663
PE	50-225	223968, 878-07-A-NP-R-10	S1039663
PP (includes PP/sePP/PP and PPr)	22-166	190890/A, 314669, 320402A	S1039663

A60 Steel Deck (penetration seal fitted on UNEXPOSED side of bulkhead) A-60 insulation must be applied to use, even if for A-15 or A-30 penetration

Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
PB	125	175486A	S1039663
PE	25-225	170080B, 175486A, 190890/A	S1039663
uPVC	25-160	170080B	S1039663
PE/ALU/PE	20-40	175486A, 330891	S1039663

A60 Steel Deck (penetration seal fitted on EXPOSED side of bulkhead) A-60 insulation must be applied to use, even if for A-15 or A-30 penetration

Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
ABS	110, 219	170080B, 334429	S1039663
PB	25-200	170080B, 309638A, 325332, 878-07-A-NP-R-10	S1039663
PE	50-125	223968	S1039663
uPVC	25-160	170080B	S1039663
PP	200, 225	334429, 325332	S1039663
Multilayer	32	170080B	S1039663
PE/ALU/PE	50-63	190890/A, 329449	S1039663
BEVTEC PE with Armaflex	75	175486A	S1039663

A-0 Steel Deck (penetration seal fitted on EITHER side of bulkhead)			
Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
PP	75-125	330891	S1039664
PB	25-200	170080B, 309638A, 325332, 878-07-A-NP-R-10	S1039664
PE/ALU/PE	63	329449	S1039664

A-0 Steel Deck (penetration seal fitted on EXPOSED side of bulkhead)			
Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
PP	65	320402A	S1039664
PE/ALU/PE	32	309638A	S1039664
uPVC	25	170080B	S1039664

A-0 Steel Deck (penetration seal fitted on UNEXPOSED side of bulkhead)			
Type of Plastic Pipe	Pipe Diameter (mm)	Test Reports	Installation Drawing
PE	160	190890/A	S1039664
PE/ALU/PE	32	309638A	S1039664

Pipe Materials and OD for Roxtec Sleeve Transition collar connected to a scupper

A-60 Steel Deck (penetration seal fitted on exposed/lower side of bulkhead) A-60 insulation must be applied to use, even if for A-15 or A-30 penetration				
Type of Plastic Pipe	Plastic Pipe Diameter (mm)	Steel Pipe Diameter (mm)	Test Reports	Installation Drawing
PP Straight Scupper	50	50, 65, 75	320402A, 334429	S1039702
PP Elbow Scupper	75	75	334429	S1039702

Pipe material clarifications as per definitions below. These are valid for all the tables above.

ABS: Acrylonitrile butadiene Styrene

PB: Polybutylene

PE: Polyethylene

uPVC: Unplasticized Polyvinyl Chloride

PE/ALUPE: Multilayer Pipe Polyethylene/Aluminum/Polyethylene

PP: Polypropylene (incl. PP, PPr and the three layer PP)

PVDF: Polyvinylidene

PVC: Polyvinyl Chloride

PPFR: Polypropylene Fire Resistant (or FR = Flame Retardant)