Confirmation of Product Type Approval

Company Name: ROXTEC INTERNATIONAL AB

Address: ROMBVAGEN 2 SE 371 65 Sweden

Product: Penetration Device for Pipe Deck and Bulkhead Penetration Sealing

Model(s): Roxtec RS/RS OMD Seals in aluminium divisions

Certificate Type	Certificate Number	Issue Date	Expiry Date
Product Design Assessment (PDA)	20-SG1958482-PDA	26-MAR-2020	25-MAR-2025
Manufacturing Assessment (MA)	18-GB3595269	07-DEC-2018	08-JAN-2024
Product Quality Assurance (PQA)	NA	NA	NA

Tier
3

Intended Service
Single pipe penetrations in Class A0, A15, A30 and A60 bulkheads and decks. Penetrations of watertight and gastight aluminium bulkheads and decks up to the specified pressure.

Description
"Roxtec pipe sealing system with multi-diameter technology" composed of aluminium sleeves (welded or bolted) or sleeves of SLX-RS type with RS or RS OMD type (EMC versions included) halogen free rubber sealing outside diameter size 23 mm to 150 mm, mounted in aluminium decks or bulkheads. RSX kits consist of SLXRS type sleeves including an RS seal.

Ratings
A0, A15, A30 and A60 Aluminium Bulkheads and Decks for single pipe penertrations

A0, A15, A30 and A60 Aluminium Bulkheads for single bundle pipe penetrations

Watertight test pressure 6 bar (except bolted versions test pressure at 5 bar)

Gastight test pressure 4 bar (except bolted versions test pressure at 2.5 bar)

Service Restrictions
a) 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.

b) Copper pipes up to 108 mm, Steel pipes and Titanium pipes up to 119 mm.

c) Bundle pipes/ multi core tubes (in stainless steel and copper versions) up to 50 mm outside diameter, sizes R43 - R100 only

d) Glass fiber reinforced pipe (GRP) / Fiberglass Composite Pipe (FGCP) outside diameter up to 90 mm for decks and 89 mm for bulkheads.

e) Maximum fitting outside diameter range 150 mm to 168 mm

f) Not for use in tank boundaries.

g) Watertight bulkheads or decks are to be examined and tested as per ABS Marine Vessel Rules 3-7-1/Table 1 .

h) When requested to be used in watertight bulkheads on passenger ships or special purpose ships, the penetration system has to comply with the requirements given in SOLAS Ch. II -1 Reg. 13.2.3. This approval of penetrations passing through watertight bulkhead is not to be construed as a substitute for flag Administration's approval for the purpose of SOLAS (Consolidated Edition 2014) as amended.

Comments

a) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

b) All seal types should be installed with the manufacturer's instructions in accordance with the attached drawings.

c) Insulation material is to be A-60 approved type and installed in accordance with the attached drawings to the satisfaction of the Surveyor.

Notes, Drawings and Documentation

Report No. 9P02428, Comparison of titanium & steel pipes, RISE Research Institutes of Sweden AB Safety - Fire Research Resistance,13 September 2019 Revision: 1, Pages: 3

Report No. MLM010235, Tested for Watertightness and gastightness, DNV, dated 21 August 2001 Revision: -, Pages: 7

Report No. PG11955, Test report for examination of the fire-resistance of an aluminium deck containing pipe penetrations, DBI Danish Institute of Fire and Security Technology, dated 17 April 2009, Revision: -, Pages: 130

Report No. PG11898, Test report for examination of the fire-resistance of an aluminium bulkhead containing pipe penetrations and cable transits, DBI Danish Institute of Fire and Security Technology, dated 17 April 2009 Revision: -, Pages: 103

Report No. P603001 - Jan 23 2007, Test report for the fire test of cable transits and pipe penetrations mounted in a bulkhead of aluminium, SP Technical Research Institute of Sweeden, dated 23 January 2007, Revision: -, Pages: 101

Report No. RS-17_B-555_E, Test on fire resistance of pipe penetrations and cable transits installed in A60 class aluminium bulkhead made according to technical documentation No. TST 000670, CENTRUM TECHNIKI OKRETOWEJ S.A, Dated 15 January 2018, Revision: 1, Pages: 50

Drawing No. RS-18-B-179-E, Test on fire resistance of pipe penetrations and cable transits installed in A60 class aluminium bulkhead made according to technical documentation No. TST 000739, CENTRUM TECHNIKI OKRETOWEJ S.A, Dated 25 June 2018, Revision: 1, Pages: 70

Drawing No. RS_19_B_020_E, Test on fire resistance of pipe penetrations and cable transits installed in A60 class aluminium bulkhead made according to technical documentation No. TST 000948, CENTRUM TECHNIKI OKRETOWEJ S.A, Dated 27 May 2018, Revision: 1, Pages: 74

Drawing No. S1552419, Certificate drawing, Revision: A, Pages: 1

Drawing No. S1019824, RS/RS OMD Cu Pipe, A-Class Alu Deck-Bulkhead, Revision: -, Pages: 1

Drawing No. S1019832, RS/RS OMD Fiberglass Composite Pipe, A-Class Alu Deck-Bulkhead, Revision: -, Pages: 1

Drawing No. S1040796, RS/RS OMD Bundle Pipe, A-Class Alu Deck-Bulkhead, Revision: B, Pages: 1

Term of Validity
This Product Design Assessment (PDA) Certificate remains valid until 25/Mar/2025 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
2020 Rules for Conditions of Classification, 1-1-4/7.7, 1-1-A3, 1-1-A4, which covers the following:

ABS Rules for Building and Classing Marine Vessels 2020: 4-6-2/9.7, 4-6-3/7.11,

ABS Rules for Building and Classing Steel Barges 2020: 4-1-2/5, 4-1-2/7

ABS Rules for Building and Classing High Speed Craft 2020: 4-4-1/9.9, 4-4-1/9.11, 4-4-1/9.13

ABS Rules for Building and Classing Steel Vessels for Service on Rivers and Intracoastal Waterways 2020: 4-3-1/7.9

2020 Rules for Conditions of Classification - Offshore Units and Structures 1-1-4/9.7, 1-1-A2, 1-1-A3, which cover the following:

ABS Rules for Building and Classing Mobile Offshore Units 2020: 4-2-1/11.15

ABS Rules for Building and Classing Facilities on Offshore Installations 2020: 3-8/9.13, 4-8/9.13,

International Standards
SOLAS Ch. II-2, Reg. 9.3.1 (2014 consolidated edition)

IMO Resolution A.754 (18) adopted on 4 November 1993 as amended by MSC.61(67) adopted on 5 December 1996

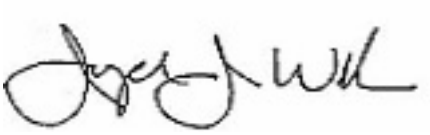
2010 FTP Code, Annex1, part 3 (IMO Resolution MSC.307 (88) adopted on 3 December 2010)

EU-MED Standards
NA

National Standards
NA

Government Standards
This PDA conforms to Transport of Canada requirements as per Transport Canada Policy Letter A8706-1 RDIMS #1961446

Other Standards
NA



Corporate ABS Programs
American Bureau of Shipping
Print Date and Time: 27-Mar-2020 2:41

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.