



Confirmation of Product Type Approval

Please refer to the "Service Restrictions" shown below to determine if Unit Certification is required for this product.

This certificate reflects the information on the product in the ABS Records as of the date and time the certificate is printed.

Pursuant to the Rules of the American Bureau of Shipping (ABS), the manufacturer of the below listed product held a valid Manufacturing Assessment (MA) with expiration date of 08/JAN/2019. The continued validity of the Manufacturing Assessment is dependent on completion of satisfactory audits as required by the ABS Rules.

And; a Product Design Assessment (PDA) valid until 08/AUG/2021 subject to continued compliance with the Rules or standards used in the evaluation of the product.

The above entitle the product to be called Product Type Approved.

The Product Design Assessment is valid for products intended for use on ABS classed vessels, MODUs or facilities which are in existence or under contract for construction on the date of the ABS Rules used to evaluate the Product.

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.

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.

Product Name: Fire Stop System
Model Name(s): Roxtec S Series Frames, for Jet fire steel divisions
(Bulkhead/Deck)

Presented to:

ROXTEC INTERNATIONAL AB
BOX 540
Sweden

Intended Service:

Structural steel jet fire protection system: cable and pipe penetration sealing system in Jet fire resisting bulkhead and deck divisions. For Offshore Applications Only.

Description:

"Roxtec pipe and cable sealing system with multidiameter technology" consisting of Roxtec S series frames (S, SO, SF, SFO, SR, SK, SKR, SRC r20&r40 and BTB) in sizes 1-8 and combinations thereof, bolted or welded on to the steel sections, filled with Roxtec (standard or EMC) halogen free insert modules. Assembled with Roxtec Wedge Kit or Roxtec EMC Wedge Kit.

Ratings:

Jet Fire rating J30: S-, SF-, SK, SR-, SRC-, Roxtec module installed towards the unexposed side, and not filled with insulation on the exposed side; Metal Clad Cables - CLX - Maximum cable outside diameter up to 103 mm; Metal Clad Cables - TECK - Maximum cable outside diameter up to 89 mm. Jet Fire rating J30: S-, SF-, SK, SR-, SRC-, Roxtec module installed towards the exposed side; Cables - Maximum cable outside diameter up to 49 mm. Jet Fire rating J60: S-, SF-, SK, SR-, SRC-, Roxtec module installed towards the exposed side, and the space behind the modules filled with insulation; Metal Clad Cables - CLX - Maximum cable outside diameter up to 103 mm; Metal Clad Cables - TECK - Maximum cable outside diameter up to 89 mm. Jet Fire rating J60: S BTB-, SF BTB-, SR BTB-, SRC BTB-, Roxtec modules installed back to back, space between the modules not filled with insulation; unexposed side covered with 50mm rockwool; Cables -

Maximum cable outside diameter up to 43 mm; Pipes - Maximum pipe outside diameter up to 20 mm. Jet Fire rating J120: S BTB-, SF BTB-, SR BTB-, SRC BTB-, Roxtec modules installed back to back, space between the modules filled with insulation; unexposed side insulated with 100mm ceramic fibre insulation; Cables - Maximum cable outside diameter up to 79 mm; Pipes - Maximum pipe outside diameter up to 30 mm. Watertight test pressure 6 bar g. (except bolted versions test pressure at 5 bar g.); Gastight test pressures 4 bar g. (except bolted versions test pressure at 2.5 bar g.).

Service Restrictions:

1) Not for use in tank boundaries. 2) Applications in each case to be approved by ABS at the design stage. 3) 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.

Comments:

1) All seal types should be installed in accordance with manufacturer's ABS approved installation drawing number S1513353 rev A. 2) Insulation material is to be H class approved type and properly installed to the satisfaction of the Surveyors. 3) Although the jet-fire resistance test has been designed to reproduce conditions similar to those found in large-scale jet fires resulting from realistic releases of hydrocarbons, it cannot guarantee a specific degree of protection from the myriad of possible jet fires. The Jet Fire Resistance Test, or indeed large-scale demonstrations, cannot therefore be used to confer a universal fire resistance rating for a specified time in the way that a standard furnace test confers a hydrocarbon rating. Hence this test does not give a rating analogous to the "H" rating derived from the hydrocarbon fire resistance test as detailed in ISO 834. This test is not intended to replace the hydrocarbon fire resistance test but is seen as a complementary test. 4) Although the method specified for jet-fire resistance test has been designed to simulate some of the conditions which occur in an actual jet fire, it cannot reproduce them all exactly. The results of this test do not guarantee safety but may be used as elements of a fire risk assessment for structures or plant. This should also take into account all the other factors which are pertinent to an assessment of the fire hazard for a particular end use. 5) The Manufacturer has provided a declaration about the control of, or the lack of Asbestos in this product.

Notes / Documentation:

1) SINTEF test report nos. 846031.02 dated 04 November 1997, NBL-107332 dated 03 June 2005, NBL F10107 dated 15 November 2010. 2) SINTEF/SP test report no. F20024-01-05 dated 16 March 2015. 3) SINTEF/SP assessment report no. F15 20119-1 dated 29 January 2015. 4) Drawing Number S1513353 Rev A

Term of Validity:

This Product Design Assessment (PDA) Certificate 16-LD1534575-PDA, dated 09/Aug/2016 remains valid until 08/Aug/2021 or until the Rules or specifications used in the assessment are revised (whichever occurs first). This PDA is intended for a product to be installed on an ABS classed vessel, MODU or facility which is in existence or under contract for construction on the date of the ABS Rules or specifications used to evaluate the Product. Use of the Product on an ABS classed vessel, MODU or facility which is contracted after the validity date of the ABS Rules and specifications used to evaluate the Product, will require re-evaluation of the PDA. Use of the Product for non ABS classed vessels, MODUs or facilities is to be to an agreement between the manufacturer and intended client.

ABS Rules:

2016 Rules for Offshore Units and Structures, 1-1-4/9.7, 1-1-A2, 1-1-A3, which covers the following: 2016 Rules for Building and Classing Mobile Offshore Drilling Units, 4-2-1/11.15 2016 Rules for Building and Classing Facilities on Offshore Installations, 3-8/9.13, 4-8/9.13

National Standards:

International Standards:

Health and Safety Executive, Offshore Technology Report - OTI 95 634 "Jet-Fire Resistance Test of Passive Fire Protection Materials"; ISO 22899-1: 2007."Determination of the resistance to jet fires of passive fire protection materials"

Government Authority:

EUMED:

Others:

Model Certificate

Model Certificate No

Issue Date

Expiry Date

PDA

16-LD1534575-PDA

09/AUG/2016

08/AUG/2021



ABS Programs

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 was printed. Type Approval requires Drawing Assessment, Prototype Testing and assessment of the manufacturer's quality assurance and quality control arrangements. Limited circumstances may allow only Prototype Testing to satisfy Type Approval. The approvals of Drawings and Products remain valid as long as the ABS Rule, to which they were assessed, remains valid. ABS cautions manufacturers to review and maintain compliance with all other specifications to which the product may have been assessed. Further, unless it is specifically indicated in the description of the product; Type Approval does not necessarily waive witnessed inspection or survey procedures (where otherwise required) for products to be used in a vessel, MODU or facility intended to be ABS classed or that is presently in class with ABS. 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.