TYPE APPROVAL CERTIFICATE
No. **LAB259217CS/002**

This is to certify that the product identified below is in compliance with the regulations herewith specified.

Description	**Devices for the passage of pipes through A or B Class divisions**
Type	**Roxtec RS Series**
Applicant	**ROXTEC INTERNATIONAL AB** **ROMBVAGEN 2, P.O. BOX 540** **SE-37123 KARLSKRONA** **SWEDEN**
Manufacturer *Place of manufacture*	**ROXTEC INTERNATIONAL AB** **ROMBVAGEN 2, P.O. BOX 540** **SE-37123 KARLSKRONA** **SWEDEN**
Reference standards	**IMO Res. MSC.307(88)-(2010 FTP Code)**

Issued in **Genoa** on **February 8, 2018**. *This Certificate is valid until* **February 7, 2023**

RINA Services S.p.A.

Enrico Cabella

This certificate consists of this page and 1 enclosure

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Product description

Devices, composed of halogen free material packing system, for the passage of pipes having diameter ranging from 6 up to 330 mm and bundle pipes having total diameter ranging from 16 up to 50 mm through A Class aluminium and steel bulkheads and decks. The division insulation covers also the transits that may be fitted with additional insulation. The aluminium bulkheads and decks are insulated by means of two layers of mineral wool with aluminium foil, 30 mm thick each and having density of 130 kg/m^3 on the exposed side (decks) and on both sides (bulkhead). The steel bulkheads and decks are insulated with different configuration described in the following tables:

ALUMINIUM DIVISIONS

BULKHEADS - METALLIC PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
From RS 23 up to RS 75	Metallic pipes – diameter from 8 up to 28 mm	Mineral wool cylinder, one layer 50 mm thick having density of 100 kg/m^3 and length of 250 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.
From RS 27 up to RS 100	Metallic pipes – diameter greater than 28 up to 57 mm	Mineral wool cylinder, one layer 50 mm thick having density of 100 kg/m^3 and length of 300 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.
From RS 100 up to RS 150	Metallic pipes – diameter greater than 57 up to 108 mm	Mineral wool cylinder, one layer 50 mm thick having density of 100 kg/m^3 and length of 600 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.

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BULKHEADS - BUNDLE PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
From RS 43 up to RS 100	Stainless steel – total diameter from 16 up to 50 mm	Mineral wool cylinder, two layers 30 mm thick each (compressed to 50 mm), having density of 125 kg/m^3 and length of 400 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.
RS 50	Copper and CuNi – total diameter from 18 up to 20 mm	Mineral wool cylinder, one layer 50 mm thick having density of 100 kg/m^3 and length of 300 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.

BULKHEADS - FIBERGLASS PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
From RS 68 up to RS 125	Fiberglass – diameter from 32 up to 89 mm	Mineral wool cylinder, two layers 30 mm thick each (compressed to 50 mm), having density of 125 kg/m^3 and length of 400 mm for seal size RS 68 up to 500 mm for seal size from RS 68 up to RS 125	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.

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DECKS - METALLIC PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
From RS 23 up to RS 75	Metallic pipes – diameter greater than 8 up to 28 mm	Mineral wool cylinder, with steel net - one layer 50 mm thick having density of 100 kg/m^3 and length of 300 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.
From RS 75 up to RS 100	Metallic pipes – diameter greater than 28 up to 57 mm	Mineral wool cylinder, with steel net - one layer 50 mm thick having density of 100 kg/m^3 and length of 400 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.
From RS 100 up to RS 150	Metallic pipes – diameter greater than 57 up to 108 mm	Mineral wool cylinder, with steel net - one layer 50 mm thick having density of 100 kg/m^3 and length of 600 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.

DECKS - FIBERGLASS PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
From RS 68 up to RS 125	Fiberglass – diameter from 32 up to 90 mm	Mineral wool cylinder, with steel net - one layer 50 mm thick having density of 100 kg/m^3 and length of 200 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.

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STEEL DIVISIONS

BULKHEADS - insulated by means of two layers of mineral wool having thickness of 50 and 30 mm and density of 100 kg/m^3 – METALLIC PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
RS 25	steel pipes – diameter 6 mm	No additional insulation	The penetration is fixed to the bulkhead plate in the middle.
From RS 25 up to RS 50	Steel pipes – diameter greater than 6 up to 28 mm	Mineral wool cylinder, with steel net - one layer 60 mm thick having density of 100 kg/m^3 and length of 300 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.
From RS 50 up to RS 400	Metallic pipes – diameter greater than 28 up to 330 mm	Mineral wool cylinder, one layer 100 mm thick having density of 100 kg/m^3 and length of 1200 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.
RS 50	Copper pipes – diameter 28 mm	Mineral wool cylinder, one layer 50 mm thick having density of 100 kg/m^3 and length of 500 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.

BULKHEADS - insulated by means of two layers of mineral wool having, each, thickness of 50 mm and density of 200 kg/m^3 – METALLIC PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
RS 23	Steel pipes – diameter 10 mm	Mineral wool cylinder - one layer 50 mm thick having density of 100 kg/m^3 and length of 300 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.
RS 23	Copper pipes – diameter 6 mm	Mineral wool cylinder - one layer 50 mm thick having density of 100 kg/m^3 and length of 300 mm	The penetration is fixed to the bulkhead plate in the middle; the additional insulation is fitted on the unexposed side.

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DECKS - insulated by means of two layers of ceramic wool having, each, thickness of 25 mm and density of 96 kg/m^3 – METALLIC PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
From RS 23 up to RS 50	Steel pipes – diameter from 8 up to 28 mm	Ceramic wool cylinder - four layers 25 mm thick each having density of 96 kg/m^3 and length of 400 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.
From RS 50 up to RS 150	Steel pipes – diameter greater than 28 up to 114.3 mm	Ceramic wool cylinder - four layers 25 mm thick each having density of 96 kg/m^3 and length of 600 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.
From RS 50 up to RS 150	Steel pipes – diameter greater than 28 up to 114.3 mm	Ceramic wool cylinder - four layers 25 mm thick each having density of 96 kg/m^3 and length of 400 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on both sides.

DECKS - insulated by means of two layers of mineral wool having thickness of 50 mm (density of 100 kg/m^3) and 30 mm density of 125 kg/m^3) – METALLIC PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
RS 23	Copper pipe – diameter 6 mm	Mineral wool cylinder - one layers 30 mm thick having density of 125 kg/m^3 and length of 400 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.

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DECKS - insulated by means of two layers of mineral wool having thickness of 50 and 30 mm and density of 125 kg/m^3 – METALLIC PIPES

TYPE OF TRANSITS	TYPE OF PIPES	ADDITIONAL INSULATION	TRANSIT FIXING AND NOTES
RS 23	Steel pipes – diameter 10 mm	Mineral wool cylinder - two layers 25 mm thick each having density of 100 kg/m^3 and length of 300 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.
From RS 23 up to RS 150	Steel pipes – diameter greater than 10 up to 108 mm	Mineral wool cylinder - two layers 25 mm thick each having density of 100 kg/m^3 and length of 450 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.
RS 23	copper pipes – diameter 6 mm	Mineral wool cylinder - two layers 25 mm thick each having density of 100 kg/m^3 and length of 300 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.
From RS 23 up to RS 150	Copper pipes – diameter greater than 6 up to 108 mm	Mineral wool cylinder - two layers 25 mm thick each having density of 100 kg/m^3 and length of 600 mm	The penetration may be fixed to the deck plate in the middle, exposed or unexposed side; the additional insulation is fitted on the exposed side.

Field of application

Fire resistant A-60 Class pipe penetrations through steel and load-bearing aluminium bulkheads and decks.

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Reference documents

Roxtec drawings enclosed in SP Test Report No. P603001 dated 23 January 2007, DANAK Test Reports No. PG11955 and No. PG11898 dated 17 April 2009, RIME Test reports No. 09-345 and No. 09-346 dated 11 December 2009, SP Test Report No. P701755 dated 12 June 2007, SP Test Report No. P601740, SP Test Reprt No. P501943 dated 17 May 2005, SP Test Report No. P605253 dated 9 February 2007 and SP Test Report No. 4P06068 dated 17 January 2015.

Tests carried out

Tests as per SP Test Report No. P603001 dated 23 January 2007, DANAK Test Reports No. PG11955 and No. PG11898 dated 17 April 2009, RIME Test reports No. 09-345 and No. 09-346 dated 11 December 2009, SP Test Report No. P701755 dated 12 June 2007, SP Test Report No. P601740, SP Test Reprt No. P501943 dated 17 May 2005,SP Test Report No. P605253 dated 9 February 2007 issued according to IMO Res. A.754 (18) and SP Test Report No. 4P06068 dated 17 January 2015 issued acccording to IMO 2010 FTP Code .

General conditions for the approval

a) The initial conditions verified by RINA at the time of the approval are to be maintained

b) Any changes to the initial conditions are to be promptly communicated to RINA, which reserves the right to repeat the relevant assessment

c) This certificate will no be valid if the manufacturer makes any changes or modifications to the approved equipment, which have not been notified to, and agreed with RINA

d) RINA personnel are to allowed to witness during the performances of activities, upon their request

e) The activities are to be carried out in compliance with the RINA Rules and/or other applicable Rules

f) Should the specified regulations or standards be amended during the validity of this certificate, the product is to be reapproved prior to it being placed on board vessels to which the amended regulations or standards apply.

Genoa 2/02/2018

File Allegato/Attached file

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