

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class H Penetration

with type designation(s)

ROXTEC SEALING SYSTEM WITH MULTIDIAMETER TECHNOLOGY, RS-SERIES

Issued to

Roxtec International AB
KARLSKRONA, Sweden

is found to comply with

DNV GL offshore standards

Application :

Approved as cable and pipe penetration in class H-60/H-120 decks and bulkheads.

Approved as cable penetration in class H-0 bulkheads.

This Certificate is valid until **2022-01-15**.

Issued at **Høvik** on **2017-01-31**

DNV GL local station: **Malmö**

for **DNV GL**

Approval Engineer: **Ivar Bull**

Petter Langnes
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Product description

"Roxtec sealing system with multidiameter technology: RS-series"
consisting of steel sleeve, welded or bolted (openable versions included) to steel decks and steel bulkheads. The sleeve is filled with Roxtec RS (standard or EMC) halogen free rubber sealing.

Application/Limitations

Approved as cable and pipe penetration in class H-60/H-120 decks and bulkheads for approved ship cables and steel/GRP pipes. Approved as cable penetration in class H-0₄₀₀ bulkhead.

Restricted application is given for penetration of bulkheads: Fire from insulated side only

Maximum size of the penetrations:

Cables:	23-125 (H-60/H-120 deck)
Cables:	23-150 (H-60/H-120 bulkhead)
	Fire from both sides only for arrangement shown on drawing No. S1513265 Rev. C
Cables:	23-125 (H-0 ₄₀₀ bulkhead)
Pipes:	23-400 (steel pipes)
Pipes:	68-125 (fibre glass reinforced pipes with diam. between 32-90 mm) (bulkhead)

Deck or bulkhead to be insulated according to classification covering the edge of the steel frame. (partially insulated penetration). The pipes are to be insulated with 75/100 mm FireMaster 607 Blanket with density of 96 kg/m³. For details see approved and stamped drawings listed below.

The protective coating is not defined as non-combustible and should not be used in accommodation or in enclosed areas.

Approved for penetration in deck and bulkheads limited to a pressure of 4.00 bar water tightness and 2.67 bar gas tightness.

For bolted versions with gasket and self tapping screws, the pressure is limited to 3.33 bar water tightness and 1.67 bar gas tightness.

The penetration system is not to be used for penetrating boundaries of tanks.

Pipe penetrations with plastic or composite pipes are not approved for use in watertight bulkheads on passenger ships and special purpose vessels (SPS).

Each product is to be supplied with its manual for installation/application and maintenance.

Type Approval documentation

Test Reports No:

22N007.12B (Single Cable H-120) dated 16 September 1999 from Sintef, Norway
22N007.12C (Single Cable H-0/H-0₄₀₀) dated 16 September 1999 from Sintef, Norway
PG11087 Serial No. 8854 dated 12 February 2003 from DIFT, Denmark
PG11088 Serial No. 8904 dated 18 February 2003 from DIFT, Denmark
P601740 (Pipe H-60/H-120 – deck) dated 28 June 2006 from SP, Sweden
P601739 (Pipe H-60/H-120 – bulkhead) dated 28 June 2006 from SP, Sweden
P703775 (GRP Pipes) dated 7 December 2007 from SP, Sweden

Water tightness/gas tightness: (MLM=DNVGL Malmö, SKM= DNVGL Stockholm)
Inspection report MLM 010235 (RS-23 to RS 125 – cable) dated 21 August 2001
Inspection report MLM 010247 (RS 23 to RS 150 – Steel pipe) dated 21 August 2001
Inspection report MLM 010247 (Steel pipe) dated 28 September 2001
Inspection report MLM 030473-1 (RS-23 – Steel pipe) dated 27 January 2003
Inspection report MLM 020133 (RS 23 to RS 150 – Cable)

Job Id:
Certificate No: **TAF00000D8**

Inspection report MLM 060561 (GRP pipes) dated 1 December 2006
Survey report SKM-04-4088 (RS 644 – Steel pipe)

Insulation/Installation drawings:

S1010003 dated 2 June 2006 (H-60 Steel pipes – Bulkhead) from Roxtec AB
S1010008 dated 2 June 2006 (H-60 Steel pipes – Deck) from Roxtec AB
S1010004 dated 2 June 2006 (H-120 Steel pipes – Bulkhead) from Roxtec AB
S1010009 dated 2 June 2006 (H-120 Steel pipes – Deck) from Roxtec AB
S1014113 dated 9 June 2008 (GRP/GRE pipes H-60/H-120) from Roxtec AB
S1513265 Rev. C dated 10 January 2017 (H-Class Single cable – Bulkhead/Deck) from Roxtec AB

Tests carried out

Tested according to IMO FTP Code Part 3 (IMO Res. A.754(18)) and NPD HC fire load/temperature curve.

Pressure tests with water and Helium according to DNVGL-CP-0165 ch. 4.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in DNVGL-CP-0338 Section 4.