

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Class A and B Penetration**with type designation(s)
RRS-15 / RS-105

Issued to

Remitite Co., Ltd.**Gimhae-si Gyeongsangnam-do, Republic of Korea**

is found to comply with

DNV GL rules for classification – Ships**DNV GL offshore standards****DNV GL class programme DNVGL-CP-0165 – Type approval – Cable and pipe penetrations****DNV GL statutory interpretations DNVGL-SI-0364 – SOLAS interpretations****Application :****Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.****Approved for use as a cable penetration system in A-0 class steel bulkheads and decks.****See Applications/Limitations on page 2.****This certificate is recognized by Transport Canada.**This Certificate is valid until **2021-11-22**.Issued at **Høvik** on **2016-11-23**DNV GL local station: **Gimhae MC & FIS**Approval Engineer: **Aleksandr Jegorov**for **DNV GL**

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.

Job Id:
Certificate No: **TAF00000FU**

Product description

"RRS-15/RS-105"

penetration system composed of rectangular or circular 180 mm deep steel sleeve with thickness of at least 5 mm welded symmetrically to the bulkhead. RRS-15 (Remitite Rubber Sleeve 15) is wrapped around the cables and fitted between the steel sleeve and cables. RS-105 (Remitite Silicone Sealant #105) of 20 mm thick is applied to both ends of the sleeve.

For further details, see approved drawings listed under Type Approval documentation below.

Application/Limitation

Approved for use as a cable penetration system in steel bulkhead/deck of class A-0 without insulation. The penetration is approved for installation in steel bulkheads/decks. Other applications are subject to case-by-case approval.

Approved range for bulkhead penetrations:

Type	Size (W x H / Diam.), mm	Cable filling ratio (min. – max.)	Sleeve position in bulkhead
Rectangular	Min. 100 x 50	1.4% - 40%	General application
	Max. 600 x 300		General application
Circular	Diam. 32	27%	General application

Approved range for deck penetrations:

Type	Size (W x H), mm	Cable filling ratio (min. – max.)	Sleeve position in deck
Rectangular	Min. 100 x 50	0.6% - 40%	General application
	Max. 600 x 300		General application

Minimum distance between cables and between cables and coaming is 5 mm.

Maximum approved cable diameter is 58 mm for the rectangular penetration.
Maximum approved cable diameter is 40 mm for the circular penetration.

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

Watertightness and gastightness is not covered in this certificate.

Each product is to be supplied with its manual for installation, use and maintenance.

Type Approval documentation

Certification in accordance with Class Programmes DNVGL-CP-0338, October 2015 and DNVGL-CP-0165, February 2016.

Deck fire test reports Nos. from "KOMERI" Korea Marine Equipment Research Institute:

- KOMERI-0402-15T3126-1 dated 12 November 2015

Bulkhead fire test reports Nos. from "KOMERI" Korea Marine Equipment Research Institute:

- KOMERI-0402-15T3642 dated 20 December 2015
- KOMERI-0402-15T2877 dated 06 October 2015
- KOMERI-0402-15T2418 dated 06 October 2015

Installation procedure (RS-105 & RRS-15) No. RM-PRO-RS105/RRS-15-1604Q01 Rev.0 dated 20 April 2016 from manufacturer.



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Tests carried out

Tested in accordance with IMO 2010 FTPC part 3.

Marking of product

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

Transport Canada Approval

Based on the procedures laid down in the Transport Canada Publication entitled "Approval Procedures for, Life Saving Equipment and Structural Fire Protection Products (TP 14612)", DNV GL confirms that the products listed in this certificate are in accordance with Transport Canada's requirements.

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.