DNV·GL

Certificate No:
TAF00000KE

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Class H Penetration

with type designation(s)
RGS Cable penetration

Issued to
MCT Brattberg AB
KARLSKRONA, Sweden

is found to comply with
DNV GL offshore standards

Application :

Approved for use as a cable penetration in bulkheads and decks of class H (see application limitation page 2).

Issued at **Høvik** on **2017-02-13**
This Certificate is valid until **2022-02-12**.
DNV GL local station: **Malmö**

Approval Engineer: **Fryderyk Hoga**

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.

Product description

"RGS Cable penetration"
Cable transit system composed of a symmetrically fitted 10 mm steel casing, welded to the steel division on non-exposed side and filled with different number of MCT Brattberg transits blocks (from Lycron), Endpacking STG-1 with a compression plate or Endpacking PTG (presswedge).

Frame types: RGS, RGSF, RGSR, RGSFB, RGSF, RGSR, RGSC, RGSFBO, RGSK

For further details see approved drawings listed under type approval documentation.

Application/Limitation

Approved as H-0, H-60 and H-120 with insulation and specifications details in table below:

Deck penetrations general application			
Size	**Fire Class**	**Fitting of steel casing**	**Insulation**
RGS 8x7	H-0	Symmetrically	Two layers of 50 mm thermal ceramics FireMaster 607 and 200 mm wide strips of 25 mm thick blanket and additional 50 mm thick insulation to be fitted over each transit extending nominally 200 mm away from the transits.
RGS 6 to 8x2	H-120		
RGS 2 to RGS 8x2	H-120	Uninsulated side	At least 88 mm thick division insulation and additional 50 mm thick insulation to be fitted over each transit extending nominally 200 mm away from the transits with minimum density of 96 kg/m^3.
Bulkhead penetrations general application			
Size	**Fire Class**	**Fitting of steel casing**	**Insulation**
RGS 2 to RGS 8x7	H-60	Symmetrically	Three layers of 50 mm thermal ceramics FireMaster 607 and 200 (on opposite side) mm wide strips of 25 mm thick blanket, covering the edge of each transits.
Restricted application fire against insulated side (bulkhead penetrations)			
Size	**Fire Class**	**Fitting of steel casing**	**Insulation**
RGS 8	H-120	Uninsulated side	At least 150 mm thick division insulation with minimum density of 128 kg/m^3.
RGS 6	H-60	Insulated side	At least 100 mm H-120 insulation with density of at least 98 kg/m^3.
RGS 2 to 8x2	H-120	Symmetrically	At least 88 mm thick division insulation and additional 38 mm thick insulation to be fitted over each transit extending nominally 200 mm away from the transits with minimum density of 96 kg/m^3.

H-0 and H-60 penetrations are to be insulated as H-120 and the division is to be insulated at least 200 mm around each penetration.

No more than 40% of the inside cross sectional area of each transit should be occupied by cables.

RGSFO may also be bolted to the bulkhead using M12 bolt and nut.

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

Type Approval documentation

Certification in accordance with Class Programme DNVGL-CP-0338, October 2015.

- 223950A dated 7 November 2005 from BRE Testing Centre (deck)
- 219308 dated 23 March 2005 from BRE Testing Centre (deck)
- 223949 dated 7 November 2005 from BRE Testing Centre (bulkhead)
- TE 82003 dated 5 February 1992 from Lycab Limited (bulkhead restricted application)
- TE 82384 dated 18 June 1992 from Lycab Limited (bulkhead restricted application)
- Warres 61482 dated 30 June 1994 from BRE Testing (bulkhead restricted application)
- 228702 dated 15 January 2007 from BRE Testing Centre (deck)
- 220239 dated 8 February 2006 from BRE Testing Centre (deck)
- 232880 dated 7 November 2007 from BRE Testing Centre (bulkhead restricted application)
- 228701 dated 5 January 2007 from BRE Testing Centre (bulkhead restricted application)

Assessment report No. CC 241401 dated 13 December 2007 from BRE Testing Centre.

Drawings (all drawings from manufacturer):

Bulkhead:

- 004252 Rev. A dated 9 September 1992 (RGS 8, RGSFO8 and RGS 6)
- 004258 Rev. A dated 9 September 1992 (RGSFO 8)
- 1070309 Rev. A dated 19 October 2007 (RGS 2 to RGS 8x7)

Deck:

- 004254 Rev. A dated 9 September 1992 (RGS 2 to RGS 8x7)
- 1080809 Rev. A dated 15 October 2008 (RGS 8x2 and RGS 8x7)

Tests carried out

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

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 Class Programme DNVGL-CP-0338, Section 4.