DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No:
TAF000009S
Revision No:
1

This is to certify:

That the Fire-Resisting Division for High Speed Craft

with type designation(s)
RGB and RGS SMC cable penetration - Composite

Issued to
MCT Brattberg AB
Karlskrona, Sweden

is found to comply with
IMO International Code of Safety for High-Speed Craft (HSC CODE)
DNV GL rules for classification – High speed and light craft

Application :

Approved for use as penetration system in composite bulkheads and decks for approved ship cables.

This certificate is recognized by Transport Canada.

Issued at **Høvik** on **2021-02-23**

This Certificate is valid until **2025-11-08**.
DNV GL local station: **Sweden CMC**

Approval Engineer: **Helge Bjørnarå**

for **DNV GL**

Digitally Signed By: Schei-Nilsson, Mårten
Location: DNV Høvik, Norway

Mårten Schei-Nilsson
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

RGB cable penetration - Composite,
is a rectangular multi-cable penetration system consisting of a steel frame with flange filled with MCT Insert Blocks (Standard Block, Handiblock, AddBlock, U-Block and Spareblock), Stayplates and STG Endpacking with compression plate or PTG Presswedge.

Frame type(s): RGB

The frame is attached to division with screws and bonding paste (NORPOL FI-184).

For further details, see drawing listed under Type Approval documentation.

RGS SMC cable penetration - Composite,
is a rectangular multi-cable penetration system consisting of a composite frame filled with MCT Insert Blocks (Standard Block, Handiblock, AddBlock, U-Block and Spareblock), Stayplates and STG Endpacking with compression plate or PTG Presswedge. Composite frame is fitted into an FRP-sandwich composite division.

Frame type(s): RGS SMC

The frame is attached to bulkhead with bonding paste (NORPOL FI-184).

For further details, see drawing listed under Type Approval documentation.

Application/Limitation

Approved for use as penetration system in composite bulkheads and decks for approved ship cables.

Restricted application: Fire against insulated side

FRP-sandwich composite division:
60-minute load-bearing composite division consists of a 52 mm thick FRP-sandwich (50 mm thick PVC-foam core faced with 1 mm thick FRP laminate) and insulated on the exposed side with 4 x 25 mm Thermal Ceramics blanket secured with washers and special stainless-steel pins with self-tapping screws. The insulation shall follow the contours of the stiffeners. Aluminium foil shall be applied between the insulation layers.

The system is only approved on case by case basis for use in composite cores with same materials and dimensions as tested. On a case by case basis other equivalent composites may be applied when confirmed acceptable and documented by the maker and found to be acceptable by the flag administration. The following issues are to be addressed:

1. The bulkhead/deck shall have tensile strength, stiffness and other mechanical properties (cold conditions) equivalent or better than to that being tested.
2. The materials (core, fibre, resin, etc.) shall have mechanical properties at the relevant temperature range (typically 20 °C to 250 °C) equivalent to the material used in the test. The heat distortion temperature for each material, thickness of laminate and density of the core may be applied as criteria.

Table 1: Approved fire-resisting bulkhead cable transit 60:

Type	Size	Max cable diameter [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Frame insulation	Dwg. No.
RGB [1)]	2 – 6x2	44	60	6.0	Symmetric, flange on either side	Partially insulated on exposed side.	1111293 1111294

1) Restricted application, fire against insulated side.

Table 2: Approved fire-resisting bulkhead cable transit 30:

Type	Size	Max cable diameter [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Frame insulation	Dwg. No.
RGS SMC [3)]	4 – 6x2	44 [2)]	80	11.5 – 15.5 [1)]	Symmetric	Partially insulated on exposed side.	1111295

1) Sleeve is tapered on the outside.
2) May also be fitted with 30 mm steel pipe
3) Restricted application, fire against insulated side.

Table 3: Approved fire-resisting deck cable transit 60:

Type	Size	Max cable diameter [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Frame insulation	Dwg. No.
RGB	2	15	60	6.0	Symmetric, flange on either side	Partially insulated on underside.	1111293 1111294
RGS SMC	4 – 6x2	32 [2)]	80	11.5 – 15.5 [1)]	Symmetric	Partially insulated on underside.	1111295

1) Sleeve is tapered on the outside.
2) May also be fitted with 30 mm steel pipe

Table 4: Approved fire-resisting deck cable transit 30:

Type	Size	Max cable diameter [mm]	Frame length [mm]	Frame thickness [mm]	Frame position	Frame insulation	Dwg. No.
RGB	2 - 6x2	44	60	6.0	Symmetric, flange on either side	Partially insulated on underside.	1111293 1111294

Any insulation used during the fire test, must be kept there also when used in divisions with lower rating than fire tested.

Any surface materials used have to be approved for smoke and toxicity and low flame spread characteristics (IMO 2010 FTP Code Annex 1 Parts 2 and 5) when required according to relevant rules.

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

Type Approval documentation

Certification in accordance with Class Program DNVGL-CP-0338, September 2018.

Test Report No. BRm6075-04C dated 25 June 2007 from SP, Borås, Sweden.
Test Report No. BRm6075-04D dated 25 June 2007 from SP, Borås, Sweden.
Test Report No. 301124C dated 2 Marsh 2016 from BRE Global, Watford, UK.

Test Report No. P101462-1015 dated 27 November 2019 from BRE Global, Watford, UK.

Installation:
Drawing No. 1111293 Rev. A dated 25 August 2011 from maker.
Drawing No. 1111294 Rev. A dated 24 August 2011 from maker.
Drawing No. 1111295 Rev. A dated 25 August 2011 from maker.

RGB frame:
Drawing No. 120098 Rev. B dated 4 October 1995 from maker.
Drawing No. 130349 Rev. B dated 5 October 1995 from maker.

RGS SMC frame:
Drawing No. 1111391 Rev. A dated 19 October 2011 from maker.
Drawing No. 1111392 Rev. A dated 19 October 2011 dated maker.

Tests carried out

The product is tested in accordance with IMO FTPC Part 11 (IMO Res. MSC.45(65)) and in compliance with IMO 2010 FTP Code Ch.8.

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.