



Marine & Offshore

Certificate number: 27842/B0 BV

File number: ACI 4000/009/007

Product code: 5302H

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

MCT Brattberg AB
KARLSKRONA - SWEDEN

for the type of product

CABLE PENETRATIONS IN FIRE DIVISIONS

RGS, RGSO, RGSF, RGSFO, RGSFB, RGSFBO, RGS-btb, RGSC, RGSK, RGSR

Requirements:

Bureau Veritas Rules for the Classification of Steel Ships, Part C

SOLAS 74 Convention, as amended, Regulation II-2/9.3.1

IMO Resolution MSC.61(67) - (FTP Code) with IMO Resolution MSC.307(88) (2010 FTP Code) article 8

IMO Resolution MSC.307(88) (2010 FTP Code)

This certificate is issued to attest that Bureau Veritas Marine & Offshore did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 11 Oct 2023

For Bureau Veritas Marine & Offshore,

At BV GOTHENBURG, on 11 Oct 2018,

Magne MOLLER



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with Bureau Veritas Marine & Offshore. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of Bureau Veritas Marine & Offshore available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against Bureau Veritas Marine & Offshore for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

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BV Mod. Ad.E 530 June 2017

This certificate consists of 5 page(s)

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

A-Class Divisions "MCT BRATTBERG" cable and pipe transits, types RGS, RGSO, RGSF, RGSFO, RGSFB, RGSFBO, RGS-btb, RGSC, RGSK, RGSR

Composed of frames types RGS, RGSO, RGSF, RGSFO, RGSFB, RGSFBO, RGS-btb, RGSC, RGSK and RGSR in sizes 2, 4, 6 or 8 and combinations, welded or bolted to the steel bulkhead or deck or aluminium bulkhead.

Frames of types "RGSB" and "RGS composite" are of composite material from polyester SMC (sheet moulding compound) 33 % filled with glass fibre.

The frame sizes are 1,2,3,4,5,6,7 and 8 to multiples thereof to maximum frame size equivalent to 8+8x7 for steel bulkheads, 8+8+8x9 for steel decks, 8+8x5 and 8+8x7 for RGS, RGSO, RGSK, RGSR, RGSC in aluminium bulkheads and 8x2 for RGSFB, RGSFBO in aluminium bulkheads.

The frames are filled with MCT Brattberg 60 mm deep self lubricated Lycron blocks (EPDM based rubber). The blocks are of type Standard, AddBlock, U-block, and machined blocks to suit non-circular services.

Transits are fitted with:

- Stay plates after each row of blocks;
- Compression plates to apply a pressure to the packing components;
- End packing
- Presswedge (type PTG-120)

Steel frames:

Penetration designation	RGS, RGSO, RGSK, RGSR, RGSC, RGS-btb	RGS	RGSF, RGSFO, RGSFB, RGSFBO
Size	Bulkhead : 1 to 8+8 x 7 Deck : 1 to 8+8+8x9	8x1 to 8+8 x 7	2 to 8 x 2
Type of division tested	Bulkhead and deck	Bulkhead	Bulkhead and deck
Welded/Bolted	Welded	Welded	Bolted
Size of the penetration (width x height) (mm)	Bulkhead : 80.25 x 121 to 923.5 x 583 Deck : 80 x 120 to 1184.5 x 889.5	140.5 x 296.5 to 923.5 x 583	260.5 x 241 to 391 x 416.5
Classification	A-60	A-0	A-60
Cable, mm	Bulkhead : 8-92 Deck : 3.5-110	8-50	8-55
Pipe	max 30 mm	-	-
Plastic pipe	-	-	-
Insulation for penetration in test	Bulkhead : Firebatt 825 Deck : SeaRox SL 620	Firemaster 607	Firebatt 825
Insulation density tested[kg/m³]	Firebatt 825 : 110 SeaRox SL 620 : 100	48	110

Aluminium frames:

Penetration designation	RGS, RGSO, RGSK, RGSR, RGSC	RGSFB, RGSFBO
Size	8+8 x 5 with insulation on exposed face 8+8 x 7 with insulation on both faces	8 x 2
Type of division tested	AL bulkhead	AL bulkhead
Welded/Bolted	Welded	Bolted
Size of the penetration (width x height) (mm)	8+8 x 5 : 662.5 x 583 8+8 x 7 : 923.5 x 583	391 x 416.5
Classification	A-60	A-60
Cable, mm	9-50	8-50
Pipe	-	-
Plastic pipe	-	-
Insulation for penetration in test	FireMaster Marine plus Blanket	-
Insulation density tested[kg/m ³]	70	-

Composite frames:

Penetration designation	RGSB	RGSB	RGSB
Size	6	6	6
Type of division tested	Al bulkhead	Steel bulkhead	Steel deck
Welded/Bolted	Bolted	Bolted	Bolted
Size of the penetration (width x height) (mm)	240.5 x 338	240.5 x 338	240.5 x 338
Classification	A-60	A-60	A-60
Cable, mm	8-50	10-50	8-50
Pipe	30	30	30
Plastic pipe	-	-	25-75
Insulation for penetration in test	-	-	-
Insulation density tested[kg/m ³]	-	-	-

Insulation to be provided for each application as shown in the drawings referred in Section 2 of this certificate. The deck or bulkhead insulation should overlap the penetration frame when no additional insulation is required.

The tested filling ratio is between 8 % and 40 % of the effective filling area. Tests were done with the cables evenly spread inside the packing.

2. DOCUMENTS AND DRAWINGS:

Insulation drawings 1120332 to 1120334 all Rev A and dated 20/08/2012, 1120344 to 1120349 all Rev A and dated 20/08/2012, 1120351 Rev A and dated 20/08/2012, 1120352 Rev A and dated 20/08/2012, 1120359 Rev A and dated 20/08/2012, 1120360, Rev A and dated 20/08/2012, 1120335 Rev B and dated 29/01/2018, 1120336 to 1120343 all Rev B and dated 24/01/2018, 1120350 Rev B and dated 24/01/2018, 1120357 Rev B and dated 29/01/2018, 1120358 Rev B and dated 29/01/2018, 1180041 Rev A and dated 24/01/2018 and 1180042 Rev A and dated 24/01/2018.

3. TEST REPORTS:**3.1- Steel bulkhead:**

208233 dated 18.9.2003, 211206 dated 30.10.2003, 212564 dated 27.1.2004, 262822 dated 1.10.2010, 267923 dated 1.6.2011, 212563A dated 9.12.2003, 266413 dated 10.3.2011

3.2- Steel deck:

208234 dated 8.5.2003, 259264A dated 3.6.2010, 214395 dated 28.1.2004, 212565A dated 9.12.2003, P101462-1000 Issue 1 dated 8.9.2016

3.3- Aluminium bulkhead:

271351 dated 7.8.2012

All these test reports are from BRE Global, UK.

All the tests are performed according to FTP Code, Part 3 (IMO MSC.61(67), except test report P101462-1000 with test performed according to IMO MSC.307(88) (2010 FTP Code).

4. APPLICATION / LIMITATION:

4.1 - Approved for use as cable transits in A-15, A-30, A-60 class steel divisions, with fire insulation as described in §1. For A-0 class divisions, local insulation arrangement shall be installed (on the penetration itself and 200 mm around).

4.2 - The tests have been carried out with mineral wools; any alternative A-class insulation material, previously proven and approved, giving at least an equivalent insulation performance, can be used.

4.3 - Filling ratio not to exceed the one tested (see § 1).

4.4 - The fitting aboard to be the same as used for the test.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The "**MCT BRATTBERG**" cable and pipe transits are to be supplied by **MCT BRATTBERG** in compliance with the type described in this certificate.

5.2 - This type of product is within the category HBV of Bureau Veritas Rule Note NR320 and as such does not require a BV product certificate.

5.3 - **MCT BRATTBERG** has to make the necessary arrangements to have its works recognised by Bureau Veritas in compliance with the requirements of NR320 for HBV products.

5.4 - For information, **MCT BRATTBERG** has declared to Bureau Veritas the following production site(s):

MCT Brattberg AB
Lyckeåborg
371 92 KARLSKRONA
SWEDEN

6. MARKING OF PRODUCT:

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

7. OTHERS:

7.1 - It is **MCT BRATTBERG**'s responsibility to inform shipbuilders or their sub-contractors of the proper methods of fitting, use and general maintenance of the approved equipment and the conditions of this approval.

7.2 - This certificate supersedes the type approval certificate N° 27842/A0 BV issued on 21/01/2013 by the Society.

7.3 - Testing of RGS-2 BTB and RGS-8 BTB for watertight up to 6 bars for 80 min and gastight up to 4 bars for 40 min, as per report N° 11201-A dated 13/10/2011, issued by MCT BRATTBERG - tests witnessed by Lloyd's Register surveyor.

7.4 - Testing of RGS-8 BTB and RGP-70 for watertight up to 5 bars for 50 min and gastight up to 3 bars for 40 min, as per report N° 11202-A dated 13/10/2011, issued by MCT BRATTBERG - tests witnessed by Lloyd's Register surveyor.

***** END OF CERTIFICATE *****