Lloyd's Register

CERTIFICATE OF FIRE APPROVAL

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	MCT Brattberg AB
Address	SE-371 92 Karlskrona Sweden
Type	**CABLE PENETRATION (STANDARD FIRE TEST)**
Description	MCT Brattberg Type: "RGS Cable Penetration seals" installed in Single/Multiple rectangular MCT Brattberg Mild, Stainless Steel, Aluminium or Composite Frames
Specified Standard	IMO Res. MSC.61 (67)- (FTP Code) Annex 1 Part 3 IMO MSC/Circ.1120 IMO Res. MSC.307 (88)-(2010 FTP Code) Section 8 IMO Res. MSC.307(88) – (2010 FTP Code), Annex 1, Part 3

The attached Design Appraisal Document forms part of this certificate.
This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue	10 June 2016	Expiry date	9 June 2021
Certificate No.	SAS F160151	Signed	
Sheet No	1 of 4	Name	S. Abraham Surveyor to Lloyd's Register EMEA A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

Lloyd's Register EMEA
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Document number
SAS F160151

Issue number
1

DESIGN APPRAISAL DOCUMENT

Date	Quote this reference on all future communications
18 May 2016	MTES/SFS/TA/SA/WP25852969

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F160151

This Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Building Research Establishment (BRE), Watford, United Kingdom, Test Report Nos. 206028B dated 27 May 2002, 206029B dated 5 September 2002, 212564 dated 27 January 2004, 211760 dated 18 September 2003, 212565A dated 20 November 2003, 214395 dated 29 January 2004 and 208234 dated May 2003.

Building Research Establishment (BRE), Watford, United Kingdom, Test Report Nos: 259264A dated 3 June 2010, 208233 dated 18 September 2003, 212563A dated 9 December 2003, 266413 dated 10 March 2011, 262822 dated 1 October 2010, 211206 dated 30 October 2003 and 267923 dated 1 June 2011.

Manufacturer's Drawings No: 1100887A to 1100898A, 1100899 C, 1111051A to 1111061A, 1111062B, 1111063A to 1111065A, 110971A, 1111196A 1120029B, 1130200/A and 1130201/A (for applications in steel divisions).

Manufacturer's Drawings No: 1120502, 1120503 and 1120504 (for applications in aluminium divisions)

MCT Brattberg pressure test reports 11201 and 110202 dated 15 June 2011

Lloyds Register witness certificate WP 6137244 dated 15 June 2011

BRE Global, Watford, United Kingdom, Test Report Nos: 262822, dated 1 October 2010 and 282342, dated 15 February 2013, and BRE Global letter dated 6 February 2013 (comparison of these test reports for 2010 FTP Code).

BRE Global, Watford, United Kingdom, Test Report Nos: 271353A dated 30 July 2012 and 271351 dated 7 August 2012

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CONDITIONS OF CERTIFICATION

1. When used in conjunction with A-60 Class steel and aluminium bulkheads and decks with approved insulation arrangements as described in MCT Brattberg general insulation drawings no: 1100887A to 1100898A, 1111051A to 1111061A, 1111063A to 1111065A and 1111196A. All insulation fitted to the steel coaming/frame must overlap the end face(s) by at least 20mm
2. For applications in A-0, A-15, A-30 Class steel bulkheads and decks, penetrations are to be fitted with the same or equivalent A-60 Class insulation arrangements as those used in the fire tests (including any insulation fitted on the penetration itself in the tests) for a minimum distance of 200mm around the penetration, on both sides in bulkheads and on the underside in decks and insulation should be extended to cover the full side(s) and the end face(s) of the steel frame, with an overlap of at least 20mm from the steel edges. These insulation arrangements are generally as shown in manufacturer's drawings 1100899B, 1111062B, 1110971A and 1120029B. For offshore applications, depending on the fire risk, the additional insulation collar for penetrations may be fitted only on one side or both sides of the bulkhead and deck, as identified during the plan approval stage. The above mentioned A-60 Class insulation arrangements should be additional to any thermal or acoustic insulation, but may include any fire rated insulation (e.g. A-15, or A-30) already fitted on the bulkhead or deck and/or on the penetration itself, such that the total fire rating is A-60

   The above requirements do not apply to "RGS 8x1" bulkhead penetrations that have been tested separately in A-0 bulkheads without insulation, and therefore they may be fitted without additional insulation in A-0 Class steel bulkheads, but insulation applied for A-15 and A-30 ratings must overlap the end face(s) of coaming/frame by at least 20mm
3. Aluminium bulkheads and decks in all cases must be insulated with an approved system to prevent the core temperature exceeding 200^0c and all penetrations fitted to such divisions must be insulated with an approved A-60 system for 200mm around the penetration and on the penetration, as described for steel bulkheads and decks. All insulation fitted to the aluminium coaming/frame must overlap the end face(s) by at least 20mm. The insulation arrangements for penetrations in aluminium divisions are generally as shown in manufacturer's drawings 1120502, 1120503 and 1120504
4. Frame types: RGS, RGSO, RGSF, RGSFO, RGSFBO, RGSB composite, RGB, RGS btb, RGSC, RGSFB, RGSK, and RGSR
5. Frame sizes: 1, 2, 3, 4, 5, 6, 7 & 8 and multiples thereof to a maximum frame size equivalent to that of type: "RGS 8+8x7". Both steel and aluminium frames are accepted
6. Consisting of: MCT Brattberg Mild Steel, Stainless Steel, Aluminium or composite frames filled with MCT Brattberg 60mm thick Lycron self lubricating transit blocks; the types: "Addblocks", "U-Blocks" and "Machined blocks to suit non circular services", are also accepted
7. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype

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NOTES

1. As per Section 2.2.6 of Appendix A.4 or IMO Resolution A.754 (18) the cable penetrations above have been tested with a range of different types of cables including a range of different conductors sheathing and insulation materials.
2. Various RGS penetration were subjected to a hydrostatic pressure test of 5 Bar and a pneumatic pressure test of 4 bar. For water and gas tight applications reference should be made to the manufacturer's instructions.
3. The penetration seal was subject to a blast overpressure with an average value of 0.773 bar for a duration of 240 milliseconds detailed in report on blast loading on steel bulkheads fitted with flexible seals, dated April 1994 by British Gas PLC at Spadeadam.
4. EMP (Electro Magnetic Pulse) type also accepted.

PLACE OF PRODUCTION

MCT Brattberg AB
SE-371 92 Karlskrona
Sweden

Saji Abraham
Senior Specialist
Statutory Fire & Safety
Marine Technology and Engineering Services
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).