Maritime & Coastguard Agency

Approved Body authorised by the MCA

Certificate No: LR22433347UKMB-02
Issue Date: 14/04/2025
Expiry Date: 09/06/2026

UK TYPE-EXAMINATION (MODULE B) CERTIFICATE

This is to certify that:

Lloyd's Register Marine Limited (LRM Ltd) did undertake the relevant type approval procedures for the type of equipment identified below which was found to be in compliance with the requirements of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended, subject to any conditions in the schedule attached hereto.

Manufacturer	**MCT Brattberg AB**
Address	Lyckeåborg, Karlskrona, 371 92, Sweden
Reference	MSN1874 Amendment 10
Regulation Item (No. & Item Designation)	UK/3.26a Penetrations through 'A' Class divisions: electric cable transits
Product Type	**CABLE TRANSITS (STANDARD FIRE TEST)**
Product Description	MCT Brattberg "RGS Single or Multiple Cable Rectangular Transits", for use inapproved A Class steel and aluminium bulkheads and/or decks and in Non-load bearing A-60 Sandwich Panel Bulkheads, as described in the attached DAD.
Trade Name	MCT Brattberg "RGS Single or Multiple Cable Rectangular Transits"
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 IMO MSC.1/Circ.1488

The attached Design Appraisal Document (schedule) forms part of this certificate. This certificate remains valid unless suspended, expired or withdrawn, provided the conditions in the attached schedule are complied with and the equipment remains satisfactory in service.

M. Halk.

Marta Walk

Fire & Safety - Senior Specialist
For and on behalf of Lloyd's Register Marine Ltd. (8512)

UK TYPE-EXAMINATION (MODULE B) CERTIFICATE

This certificate is issued under the authority of the MCA.This certificate will not be valid if the manufacturer makes any changes or modifications to the approved type of equipment, which have not been notified to, and agreed with the approved body named on this certificate.

During the period of validity of this certificate the applicable regulations (international conventions and the relevant resolutions and circulars of the IMO) and testing standards may change, therefore the product conformity may need to be re-assessed by the Approved Body.

The "UK Mark of Conformity" may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-control phase module (D, E or F) of Schedule 2 of the Merchant Shipping (Marine Equipment) Regulations 2016, as amended is fully complied with and controlled by a written inspection agreement with an Approved Body.

ATTACHMENT TO UK TYPE EXAMINATION (MODULE B) CERTIFICATE No. LR22433347UKMB-02

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions and the Merchant Shipping (Marine Equipment) Regulations 2016, as amended for the UK Type Examination of marine equipment for use on UK ships

This Design Appraisal Document forms part of the Certificate.

This Certificate is an Amendment of Certificate Number LR22433347UKMB-01.

Approval Documentation

1. Tests in accordance with IMO Res. MSC.61 (67) - (FTP Code) Annex 1 Part 3:

   Building Research Establishment (BRE), Watford, United Kingdom; Fire Test Reports No: 259264A dated 3 June 2010, 262822 dated 1 October 2010, 266413 dated 10 March 2011, 267923 dated 1 June 2011, 271353A dated 30 July 2012, 271353B dated 5 September 2012 and 271351 dated 7 August 2012.
2. Tests in accordance with IMO Res. MSC.307 (88) - (2010 FTP Code) Annex 1, Part 3:

   BRE Global, Watford, United Kingdom; Fire Test Reports No: 282342 dated 15 February 2013 and supplementary BRE Global letter dated 6 February 2013, 282342A dated 25 April 2013, 290298 dated 15 May 2014
   BRE Global Ltd., Watford, United Kingdom; Fire Test Reports No: P101462-1000 Issue 1 dated 8 September 2016, P101462-1001 Issue 1 dated 14 September 2018, P101462-1002 Issue 1 dated 15 August 2018, P101462-1006 Issue 1 dated 2 February 2018, P101462-1010 Issue 1 dated 27 November 2019, P101462-1013 Issue 1 dated 1 May 2020, P101462-1021 Issue 1 dated 17 April 2020, P101462-1022 Issue 2 dated 12 May 2021 and P101462-1023 Issue 1 dated 7 December 2020, P101462-1026 Issue 1, dated 8 November 2022, P101462-1027 Issue 1, dated 4 January 2023, P101462-1028 Issue 1, dated 10 February 2023, P101462-1030 Issue 1, dated 31 October 2023, P125338-1001 Issue 1, dated 4 April 2024,

   DBI Danish Institute of Fire and Security Technology, Hvidovre, Denmark; Fire Test Report No PGB10227A, dated 31 March 2023

   RISE Research Institutes of Sweden AB, Boras, Sweden; Fire Test Reports No: O100409-170218-1 dated 25 February 2022 and O100410-1223422 dated 15 February 2023.

3. Lloyds Register witness certificate: WP6137244 dated 15 June 2011
4. Manufacturer's Drawings:

   No: 1210268 A, 1210269 C, 1210270 A, 1210271 A, 1210272 C, 1210273 A to 1210282 A, 1210288 A, 1210293 A, 1210310 B and 1210317 B to 1210319 B and 1230026 C, 1240038 A, 1240039 A, 1240040 B, 1240044 A and 1250187-A (Note: Drawings are for reference only; product installation and insulation arrangements to be in accordance with Conditions of Certification described below. Additionally, where differences exist between the drawings and the Certificate, the information in the Certificate must be considered correct and applied)

ATTACHMENT TO UK TYPE EXAMINATION (MODULE B) CERTIFICATE No. LR22433347UKMB-02

Conditions of Certification

1. RGS single and multiple cable rectangular transits may be accepted for use in A Class steel and aluminium bulkheads and decks, with approved arrangements as described in Table 1 to Table 6 below.

Table 1. Approved arrangements in A-60 Class steel bulkheads

Transit type	Transit size	Maximum cable diameter	Position of tested transit in division	Application	Minimum Insulation arrangements as in Drawing no.
RGS	1x1 - 8x3	50	Symmetrical	Restricted	1240040 B - Fig. 1
RGS	8x3 - 8+8x5	50	Symmetrical	Restricted	1250187 A
RGS	1x1 - 8+8x5	76	Symmetrical	General	1240040 B - Fig. 3
RGS	2x1 - 8+8x5	58	Symmetrical	General	1210274 A
RGS	8+8x5 - 8+8x7	58	Symmetrical	General	1210275 A
RGS	8+8x5 - 8+8x7	110	Symmetrical	General	1210277 B
RGS	2x1 - 8x5	110	Symmetrical	General	1240040 B - Fig. 2
RGS	8x5 - 8+8x5	60	Symmetrical	General	1240040 B - Fig.4
RGS	180 - 240	150	Symmetrical	General	1240039 A
RGSF (B)	1x1 - 8+8x3	110	Exposed	General	1230026 C - Fig. 1
RGSF (B)	8+8x3	60	Exposed	General	1230026 C - Fig. 2
RGSF (B)	1x2 - 8x2	50	Unexposed/ flange Exposed	General	1230026 C - Fig. 3
RGSF (B)	1x1 - 8+8x5	76	Unexposed	General	1210278 A
RGSF (B)	8+8x5 - 8+8x7	76	Unexposed	General	1210279 A

Table 2. Approved arrangements in A-60 Class steel decks

Transit type	Transit size	Maximum cable diameter	Position of transit frame in division	Application	Minimum Insulation arrangements as in Drawing no.
RGS	1x1 - 8x9	110	Symmetrical	General	1210268 A
RGS	8x9 - 8+8+8x9	110	Symmetrical	General	1210276 A
RGSF (B)	1x1 - 8x9	110	Unexposed	Limited	1210280 A
RGSF (B)	8x9 - 8+8+8x9	110	Unexposed	Limited	1210281 A
RGSF (B)	2x1 - 8+8x5	60	Unexposed	Limited	1210310 B
RGS	180 - 240	150	Symmetrical	General	1240039 A

Table 3. Approved arrangements in A-60 Class aluminium bulkheads

Transit type	Transit size	Maximum cable diameter	Position of tested transit in division	Application	Minimum Insulation arrangements as in Drawing no.
RGS	1x1 - 8+8x5	50	Symmetrical	General	1210270 A
RGS	8+8x5 - 8+8x7	50	Symmetrical	General	1210271 A

ATTACHMENT TO UK TYPE EXAMINATION (MODULE B) CERTIFICATE No. LR22433347UKMB-02

Table 4. Approved arrangements in A-60 Class aluminium deck

Transit type	Transit size	Maximum cable diameter	Position of tested transit in division	Application	Minimum Insulation arrangements as in Drawing no.
RGS	1x1 - 8x9	50	Symmetrical	Restricted	1210269 B
RGS	8x9 - 8+8x7	50	Symmetrical	Restricted	1210272 B

Table 5. Approved arrangements in A-0 Class steel bulkheads

Transit type	Transit size	Maximum cable diameter	Position of tested transit in division	Application	Minimum Insulation arrangements as in Drawing no.
RGS	2x1 - 8x1	41	Symmetrical	Restricted	1240044 A - Fig. 4
RGSF (B)	8x1	36	Unexposed/ flange Exposed	General	1240044 A - Fig.3
RGS btb	2x1 - 8+8x7	76	Symmetrical	General	1210288 A
RGS	8x1 - 8+8x7	58	Symmetrical	General	1240044 A - Fig. 2
RGS	2x1 - 8+8x7	58	Symmetrical	General	1240044 A - Fig.1

Table 6. Approved arrangements in A-0 Class steel decks

Transit type	Transit size	Maximum cable diameter	Position of tested transit in division	Application	Minimum Insulation arrangements as in Drawing no.
RGS	2x1 - 8+8x7	36	Symmetrical	General	1210282 A
RGS	2x1 - 8x3	36	Symmetrical	General	1210317 B
RGSF (B)	1x1 - 8x3	36	Unexposed	Limited	1210319 B
RGS	180 - 240	150	Symmetrical	General	1240039 A

Note 1: Restricted Applications - fire hazard is only on the insulated side of the division.

Note 2: Limited Applications – the approval limited to the tested orientation of the penetration.

Note 3: Aluminium bulkheads and decks in all cases must be insulated with an approved system on all fire risk sides (as determined by the design project Plan Approval authority; to prevent the core temperature exceeding 200^{0}C and all transits fitted to such divisions must be insulated with an approved A-60 system.

2. For A0 penetrations not detailed on drawings in Table 5 and 6 and for A15, A30 class Deck and Bulkheads penetrations are to be fitted with the same or equivalent A60 class insulation arrangements as those used in fire tests (including any insulation fitted on the penetration itself) for a minimum of 200mm distance around the penetration.

3. Types: RGSFB and RGB/RGG cable transits are approved for use in the as-tested 100mm thick type: “CIS 100 A-60 Sandwich Panel Bulkhead” and “G21 Fire Panel“, using steel mounting flange and M8 steel bolts, with as-tested arrangements as described in Table 7. Use of these transits in other types of sandwich panel bulkheads are outside the scope of this certificate and would require case-by-case approval.

ATTACHMENT TO UK TYPE EXAMINATION (MODULE B) CERTIFICATE No. LR22433347UKMB-02

Table 7: Approved arrangements in A-60 Class sandwich bulkheads type: "CIS 100 A-60 Sandwich Panel Bulkhead" or "G21 Fire Panel"

Transit type	Transit size	Maximum cable diameter	Position of tested transit in division	Application	Minimum Insulation arrangements as in Drawing no.
RGB/RGG	2x1 - 8+8x5	105	Exposed	General	1240038 A
RGSFB	2x1 - 8+8x5	50	Exposed	General	1240038 A

4. RGS transit type consisting of: MCT Brattberg Mild Steel, Stainless Steel or Aluminium frames minimum 60mm deep and 10mm thick and either bolted on one side or fully welded to the division on both sides; RGB/RGG is 6mm thick, Back to back (btb) transits are fitted in mild steel sleeves minimum 200mm deep made of 10mm thick steel on the ends and 12mm thick on the sides and fully welded to the steel division on both sides
5. RGS transit type filled with MCT Brattberg 60mm thick Lycron self-lubricating transit blocks. The types: "Standard Insert Blocks", "Addblocks", "U-Blocks", "Machined blocks to suit non-circular services", "Handi-blocks", "Plugs" and "Wraps" are also accepted. EMP (Electro Magnetic Pulse) types also accepted.
6. Frame Types: RGS, RGSO, RGSC, RGSF, RGSFO, RGSFB, RGSFBO, RGS btb RGSK, RGSC btb, RGSR in sizes 1, 2, 3, 4, 5, 6, 7, 8, 180 & 240 and multiples thereof to a maximum frame size equivalent to that of Type 8+8+8x9.
7. As per Section 2.2.6 of Appendix A.4 or IMO Resolution A.754 (18) the cable transits above have been tested with a range of different types of cables including a range of different conductors sheathing and insulation materials.
8. Cable transits are to be fitted with the as-tested insulation materials in all cases. Any alternative insulation system proposed must be acceptable to the final Project Authority as being equivalent, at least in fire performance, material properties, thickness and density as the fire tested insulation system. Final insulation arrangements onboard must be to the satisfaction of the attending project surveyor in all cases.
9. Composition, application and installation of subcomponents, including adhesives, seals and any fire retardants, to be maintained in production and used in accordance with originally tested composition formula and method of application and installation, and manufacturer's instructions.
10. 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.
11. The certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products are fully compliant with the relevant statutory regulations and designed, manufactured and installed to the same quality and specifications as the prototype tested, including components that are designed and manufactured by third parties.
12. Each item, batch or lot of the equipment is to have the "UK Conformity Mark" affixed and be issued with a "UK Declaration of Conformity "affixed after a conformity assessment module is in place.
13. Should a change of Place of Production from that stated below be required i.e. where the stages of manufacture/assembly/testing of this product take place, the new Place of Production is to be advised to us prior to the change taking place. This Certificate will require to be updated for Approval to be maintained.
14. The manufacturer must keep a copy of the UK type-examination certificate, its annexes, and additions together with the technical documentation at the disposal of the national authorities for a period of at least 10 years after the UK Conformity Mark has been affixed on the last product manufactured and, in no case for a period shorter than the expected life of the marine equipment concerned.

ATTACHMENT TO UK TYPE EXAMINATION (MODULE B) CERTIFICATE No. LR22433347UKMB-02

ADDITIONAL AD HOC TEST RESULTS (For Information only; outside the scope of this Fire Type Approval Certificate)

1. Various RGS transits 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.
2. The transit 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.
3. MCT Brattberg pressure test reports: 11201 and 110202 dated 15 June 2011.
4. Back to back arrangements of RGS 2x 1 and RGS 8x1 cable transits with various cables and pipes and sealed with a mix of standard blocks, Add blocks, Handi-blocks, stay plates, end packing STG-1 and press wedge PTG-120, were subjected to separate hydrostatic and pneumatic pressure tests with pressure applied between the RGS seals in the Back to Back frames, increasing pressure in steps every 5 minutes and then held at 6bar water pressure and 4 bar pneumatic pressure with no reported leakage for 30minutes, as detailed in DNV-GL report no.N141GRC2 dated 22 November 2017.
5. RGSF 8x1 Single frame cable transit comprising Handi-blocks with plugs, stay plates and press wedge PTG-120 was subjected to a hydrostatic test increasing pressure in steps and maintained at 6bar for 60minutes followed by a pneumatic test increasing pressure in steps and maintained at 7bar for 30minutes with no reported leakage as described in DNV report no: N141NMEK dated 14th November 2018.
6. RGSF 2x1 and RGSF 8x1 Single frame cable transits comprising cables and pipes, spare blocks, standard blocks, Add-blocks, Handi-blocks, U-Blocks, stay plates, STG end packing and PTG press wedge were subjected to a hydrostatic test increasing pressure in steps and maintained at 6bar for 60minutes with no reported leakage as described in MCT Brattberg test report no: 190614 dated 18th October 2019. The tests were witnessed by Lloyd's Register.

Place of Production

MCT Brattberg AB
Lyckeåborg
SE-371 92
Karlskrona
Sweden

M. Walk

Marta Walk
Senior Specialist, Fire & Safety
Statutory Discipline Team, Marine & Offshore
Lloyd's Register EMEA
For and on behalf of Lloyd's Register Marine Ltd.
(LRM Ltd) - UK Approved Body 8512