Certificate No: LR23410499SF
Issue Date: 19/05/2022
Expiry Date: 18/05/2027

Certificate Of Fire Approval

This is to certify that the product(s) detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations for use on offshore units classed with Lloyd's Register, and for use on offshore units and onshore facilities when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer	**MCT Brattberg AB**
Address	Lyckeåborg, 371 92 Karlskrona, Sweden
Type	Cable Penetration (Hydrocarbon Fire Test)
Description	Multiple Cable Transit System – Type: “RGS, RGSC, RGSF, RGSF/B, RGSFO, RGSFO/B, RGSR, RGSK, RGSO, and RGS-btb” Mild Steel or Stainless Steel Frames, for applications in H Class steel bulkheads and decks
Trade Name	MCT Brattberg Multi Cable Penetration Seal
Specified Standard	(UK) Department of Energy Hydrocarbon Time/Temperature Relationship and IMO Resolution A.754(18) and IMO Resolution MSC.307(88) Annex 1 Part 3

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 Marine Polska sp. z o. o. of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document and its supplementary Type Approval Terms and Conditions form 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.

M. Halk.

Marta Walk

Fire & Safety - Senior Specialist to Lloyd's Register Marine Polska sp. z o. o.
A member of the Lloyd's Register group

Al Zwycięstwa 13a, Gdańsk, 80-219, Poland

DESIGN APPRAISAL DOCUMENT

ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR23410499SF

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

This Certificate is a Renewal and an Amendment of Certificate Number LR21189156SF.

APPROVAL DOCUMENTATION

BRE Testing, Garston, United Kingdom, Test Report No. P101462-1003, dated 24 November 2016.

BRE Testing, Garston, United Kingdom, Test Report No. P101462-1004, dated 30 May 2017.

BRE Testing, Garston, United Kingdom, Test Report No. P101462-1012, dated 10 July 2020.

Intertek Laboratory, Sweden, Test Report No. 1814340STO-001, dated 28 August 2018

Manufacturer's Drawings No. 1210221 Rev.B, No. 1210222 Rev.A, No. 1210223 Rev.A, No. 1210224 Rev.B, No. 1210225 Rev.A, No. 124007 Rev.A

CONDITIONS OF CERTIFICATION

1. For use in H Class steel bulkheads and decks that are insulated in accordance with Tables 1-3.
2. Penetrations and cables are to be insulated in accordance with Tables 1-3, as described in MCT Brattberg drawings referenced in Tables 1-3.

Table 1. Approved for Applications in H-120 and H-60 class Bulkhead

Transit type/ frame size	Maximum fire rating achieved	Cable fill - used space in one frame	Maximum cable diameter	Minimum insulation arrangements
RGS, RGSC, RGSF, RGSF/B, RGSFO, RGSFO/B, RGSR, RGSK, RGSO, and RGSbtb / Sizes 1, 2, 4, 6, 8 or combinations as tested up to 1680 cm^2	**H-120**	**0%-100%**	42mm	The H120 bulkhead approved insulation system on one side the bulkhead, covering the surface of the transit, and additional H120 insulation as above over the transit and extending min. 200mm around the transit, insulation arrangement as on drawing No. 1210224 Rev. B
RGS, RGSC, RGSF, RGSF/B, RGSFO, RGSFO/B, RGSR, RGSK, RGSO, and RGSbtb / Sizes 1, 2, 4, 6, 8 or combinations as tested up to 1680 cm^2	**H-60**	**0%-100%**	42mm	The H120 bulkhead approved insulation system on one side the bulkhead, covering the surface of the transit, insulation arrangement as on drawing No. 1210223 Rev. A

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Table 2. Approved for Restricted Applications in H120 Class steel bulkheads insulated on the fire hazard side

Transit type/ frame size	Maximum fire rating achieved	Cable fill - used space in one frame	Maximum cable diameter	Minimum insulation arrangements
RGS, RGSC, RGSF, RGSF/B, RGSFO, RGSFO/B RGSR, RGSK, RGSO, and RGSbtb / Sizes 1, 2, 4, 6, 8 or combinations as tested up to 3360 cm^2	**H-120**	**0%-100%**	110mm	The H120 bulkhead approved insulation system on fire hazard side of the bulkhead, covering the surface of the transit, and additional H120 insulation as above applied on fire hazard side over the transit and extending min. 150mm around the transit, insulation arrangement as on drawings No. 1210221 Rev. B
RGS, RGSC, RGSF, RGSF/B, RGSFO, RGSFO/B RGSR, RGSK, RGSO, and RGSbtb / Sizes 1, 2, 4, 6, 8 or combinations as tested up to 4704 cm^2	**H-120**	**0%-100%**	110mm	The H120 bulkhead approved insulation system on fire hazard side of the bulkhead, covering the surface of the transit, and additional H120 insulation system as above applied twice, on fire hazard side over the transit and extending min. 200mm around the transit, insulation arrangement as on drawing No. 1210222 Rev. A,

Table 3. Approved for Applications in H-120 and H-60 class Deck

Transit type/ frame size	Maximum fire rating achieved	Cable fill - used space in one frame	Maximum cable diameter	Minimum insulation arrangements
RGS, RGSC, RGSF, RGSF/B, RGSFO, RGSFO/B RGSR, RGSK, RGSO, and RGSbtb / Sizes 1, 2, 4, 6, 8 or combinations as tested up to 4704 cm^2	**H-120**	**0%-100%**	**50mm**	The H120 deck approved insulation system underside covering the surface of the transit, and additional H120 insulation as above, applied underside the deck over the transit and extending min. 150mm around the transit, insulation arrangement as on drawing No. 1210225 Rev. A,
RGS, RGSC, RGSF, RGSF/B, RGSFO, RGSFO/B RGSR, RGSK, RGSO, and RGSbtb / Sizes 1, 2, 4, 6, 8 or combinations as tested up to 4704 cm2 Sizes 1, 2, 4, 6, 8 combinations as tested up to 4704 cm2	**H-60**	**0%-100%**	**100mm**	The H120 deck approved insulation system underside, covering the surface of the transit, insulation arrangement as on drawing No. 124007 Rev. A

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3. For use in H-0 Class steel bulkheads and decks with a ring of H-120 Class approved insulation system around the penetration for a minimum distance of 450mm and insulation fitted on the penetration itself in the same configuration as tested.
4. RGS System consisting of: Mild Steel or Stainless Steel frames minimum 60mm deep and 10mm thick and either bolted on one side or fully welded to the division on both sides; and filled with MCT Brattberg 60mm thick Lycron transit blocks types: “Standard Insert Blocks”, “Addblocks”, “U-Blocks”, “Handi-blocks”, “Spare Blocks”, “Plugs” and “Wraps". The compression units are also accepted. EMP (Electro Magnetic Pulse) types are also accepted.
5. RGS Back to back (RGSbtb) 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.
6. RGS types transits (excluding RGSbtb) to be installed either symmetrically or non-symmetrically on the fire exposed side or fire unexposed side of the division. RGSbtb type transit approved arrangements is to be fitted on fire unexposed side.
7. The cable transit installation/welding arrangements must be as tested in accordance with manufacturer's specifications and to the satisfaction of the attending project surveyor.
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. The Certificate holder is solely responsible for the products supplied under this Certificate and to ensure that their products, whether manufactured by themselves or their licensee manufacturers, if agreed by Lloyd's Register, are fully compliant with the relevant statutory regulations and Lloyd's Register Class Rules as applicable 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.
11. 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.

NOTE

RGS penetration transit when tested according to IEC 60529:2013 achieved IP 65 degree of protection as described in Intertek Laboratory, Sweden, Test Report No. 1814340STO-001.

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PLACE OF PRODUCTION

MCT Brattberg AB
SE-37 192 Karlskrona
Sweden

M. Halk
Marta Walk
Senior Specialist, Fire & Safety
Statutory Discipline Team, Marine & Offshore
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)