



## 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.

|                           |  |
|---------------------------|--|
| <b>Manufacturer</b>       | <b>MCT Brattberg AB</b>  |
| <b>Address</b>            | SE-37 192 Karlskrona, Sweden   |
| <b>Type</b>               | Pipe Penetration (Hydrocarbon Fire Test)   |
| <b>Description</b>        | Single and Multiple Steel Pipe Circular Penetration System – Type: “MCT Brattberg RGP Penetrations” in Mild Steel or Stainless Steel Frames, for restricted applications in H Class steel bulkheads and decks insulated on the fire exposed side |
| <b>Trade Name</b>         | MCT Brattberg Pipe Penetrations Seal   |
| <b>Specified Standard</b> | UK Department of Energy Hydrocarbon Time/Temperature Relationship and IMO Resolution A.517(13) and A.754(18)   |

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 North America, Inc. 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.

1330 Enclave Parkway, Houston, Texas, 77077,  
United States

**Bruce McDonald**

Global Fire & Safety Manager to Lloyd's  
Register North America, Inc.  
A member of the Lloyd's Register group

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**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR23320483SF**

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 Renewal of Certificate Number SAS F170226.

**APPROVAL DOCUMENTATION**

Manufacturer's Drawing Nos. 140448 Rev. B, 140449 Rev. B and 140456 Rev. A.

BRE Testing, Garston, United Kingdom, Test Report No. 228636, dated 18 August 2006. Bulkhead Drawing Nos. 1060399-1060412 Rev. 1 and 1060414 Rev. 1

BRE Testing, Garston, United Kingdom, Test Report No. 226820, dated 8 May 2006. Deck Drawing Nos. 1060179 Rev. 2, 106181 Rev. 2, 1060185 Rev. 2, 1060186 Rev. 2, 1060192 Rev. 2 and 1060195 Rev. 2

Intertek Laboratory, Sweden, Test Report No. 1817883STO-002, dated 26 February 2019

**CONDITIONS OF CERTIFICATION**

- For use in restricted H-60 and H-120 Class steel bulkheads and decks that are insulated with approved insulation system of total thickness min 88mm on the fire exposed side; the penetrations and pipes are to be insulated in accordance with Tables 1-3, as described in MCT Brattberg drawings referenced in Tables 1-3.

**Table 1: H-120 Bulkhead**

| Transit type/<br>frame size                                   | Maximum<br>fire rating<br>achieved | Tested Pipes<br>configuration            | Maximum<br>pipes nominal<br>diameter | Minimum insulation arrangements<br>on penetrations and pipes   |
|---|------------------------------------|--|--------------------------------------|--|
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200 | <b>H-120</b>                       | Single Steel Pipe                        | 30mm                                 | insulation arrangement on penetration: min. 76mm thick <u>on fire hazard side</u> , insulation arrangement as on drawings 1060399 Rev. 1, 1060403 Rev. 1                       |
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200 | <b>H-120</b>                       | Multi Steel Pipe                         | 28mm                                 | insulation arrangement on penetration: min. 100mm thick <u>on fire hazard side</u> , insulation arrangement as on drawing 1060400 Rev. 1                                       |
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200 | <b>H-120</b>                       | Mixed combination Steel Pipes and cables | 28mm                                 | insulation arrangement on penetration: min. 150mm thick <u>on fire hazard side</u> , insulation arrangement as on drawing 1060405 Rev. 1                                       |
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200 | <b>H-120</b>                       | Multi Steel Pipe                         | 30mm                                 | <u>both side</u> insulation arrangement on penetration: min. 450mm thick on both fire hazard side, insulation arrangement as on drawing 1060414 Rev. 1                         |
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200 | <b>H-120</b>                       | Multi Copper Pipe                        | 22mm                                 | <u>both side</u> insulation arrangement on penetration: min. 350mm thick on one side and min 200mm thick on opposite side, insulation arrangement as on drawing 1060406 Rev. 1 |

**Note:** When hazard-both sides, approved insulation arrangements on penetration with additional insulation as on drawings 1060407 Rev.1, 1060408 Rev.1, 1060409 Rev.1, 1060412 Rev.1 and 1060414 Rev.1

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**ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR23320483SF****Table 2: H-60 Bulkhead**

| Transit type/<br>frame size                                   | Maximum<br>fire rating<br>achieved | Tested Pipes<br>configuration | Pipes<br>nominal<br>diameter | Minimum insulation arrangements<br>on penetrations and pipes   |
|---|------------------------------------|-------------------------------|------------------------------|--|
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200 | <b>H-60</b>                        | Single Steel Pipe             | up to 30mm                   | insulation arrangement on penetration: min. 76mm thick <u>on fire hazard side</u> , insulation arrangement as on drawing 1060402 Rev. 1                                |
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200 | <b>H-60</b>                        | Single Steel Pipe             | up to 60mm                   | insulation arrangement on penetration: min. 400mm thick <u>on fire hazard side</u> , insulation arrangement as on drawing 1060401 Rev. 1                               |
| RGP 200, RGP 300  | <b>H-60</b>                        | Single Steel Pipe             | 114 up to 156mm              | <u>both side</u> insulation arrangement on penetration: min. 350 mm thick on fire hazard side and min 350mm thick on non-hazard side, transit frame on non-hazard side |

**Note:** When hazard-both sides, approved insulation arrangements on penetration with additional insulation as on drawings 1060410 Rev.1, 1060411 Rev.1

**Table 3: H-120 Deck**

| Transit type/<br>frame size  | Maximum<br>fire rating<br>achieved | Tested Pipes<br>configuration | Maximum<br>pipes<br>nominal<br>diameter | Minimum insulation arrangements<br>on penetrations and pipes  |
|--|------------------------------------|-------------------------------|---|---|
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200, RGP 300 | <b>H-120</b>                       | Single Steel Pipe             | 30mm                                    | insulation arrangement on penetration: min. 76mm thick <u>on fire hazard side</u> , insulation arrangement as on drawings 1060179 Rev. 2, 1060186 Rev. 2  |
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200, RGP 300 | <b>H-120</b>                       | Single Steel Pipe             | 156mm                                   | <u>both side</u> insulation arrangement on penetration: min. 350mm thick on fire hazard side and min 300mm thick on non-hazard side, insulation arrangement as on drawings 1060181 Rev. 2, 1060195 Rev. 2 |
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200          | <b>H-120</b>                       | Multi Steel Pipe              | 28mm                                    | insulation arrangement on penetration: min. 100mm thick <u>on fire hazard side</u> , insulation arrangement as on drawing 1060185 Rev. 2  |
| RGP 50 S, RGP 50L, RGP 70, RGP 100, RGP 125, RGP 150, RGP 200          | <b>H-120</b>                       | Multi Copper Pipe             | 20mm                                    | <u>both side</u> insulation arrangement on penetration: min. 350mm thick on fire hazard side and min. 350mm thick on non-hazard side, insulation arrangement as on drawing 1060192 Rev. 2                 |

- 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.

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3. EMP (Electro Magnetic Pulse) Types also accepted.
4. Pipe Penetration installation arrangements must be as tested in accordance with manufacturer's specifications and to the satisfaction of the attending project surveyor.
5. 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.
6. 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**

RGP Single and Multipipe penetration transit when tested according to IEC 60529:2013 achieved IP 65 degree of protection, as described in Intertek Laboratory, Sweden, Test Report No. 1817883STO-002.

**PLACE OF PRODUCTION**

**MCT Brattberg AB**  
SE-37 192 Karlskrona  
Sweden

Bruce McDonald  
Technical Authority-Statutory  
Lloyd's Register Americas

**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)*

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