

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.

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|---------------------------|---|
| Manufacturer | Göpfert AG |
| Address | Industriestraße, 25795 Weddingstedt, Germany |
| Type | Fire Fighting Foam Monitor |
| Description | Fire Fighting Foam Monitor – Type: “MX 2000, DN 65, DN 80, DN 100 and DN 150” |
| Trade Name | MX 2000, DN 65, DN 80, DN 100 and DN 150 |
| Specified Standard | SOLAS 1974 as amended and IMO Fire Safety Systems Code, Chapter 14, Performance Testing |

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 EMEA 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.



Saji Abraham

Surveyor to Lloyd's Register EMEA
A member of the Lloyd's Register group

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ATTACHMENT TO CERTIFICATE OF FIRE APPROVAL No. LR2056581SF

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 of previous Lloyd's Register Certificate of Fire Approval No: SAS F150330.

APPROVAL DOCUMENTATION

Minimax, Fire Protection Research Centre, Bad Oldesloe, Germany, Acceptance Test Report, Version 1, dated 12 December 2003. Tests witnessed by surveyors from Lloyd's Register EMEA, Hamburg, China Classification Society and Bureau Veritas, Hamburg.

Minimax Drawing Nos. 89 8340, Rev. 5; 89 8351, Rev. 5; 84 2348, Rev. 0; 84 2349, Rev. 0; 87 9864, Rev. 5; 87 8976, Rev. 5; 84 2350, Rev. 0; 84 2351, Rev 0; 87 9669, Rev. 5; 87 9670, Rev. 5; 89 8983, Rev. 5; 89 8995, Rev. 5; 89 9008, Rev. 5; 89 9914, Rev. 5; 84 1062, Rev. 4 and 84 1061, Rev. 3.

CONDITIONS OF CERTIFICATION

1. Materials of construction to be of an approved type
2. When used for a tanker deck foam system the capacity of the monitor discharge shall not be less than 1250 l/min
3. When used with the following accessories: Foam/Water jet pipe SWR DN 65, 80, 100 and 150; Water jet pipe WR DN 65, 80, 100 and 150; Multi-purpose nozzle MZ 2800, MZ 3000, MZ 4000, DN 65, 80 and 100. Sample performance test results were as follows:

| <u>Foam water pipe SWR</u> | <u>Water Flow (l/min)</u> | <u>Water Throw (m)</u> | <u>Foam Flow (l/m)</u> | <u>Foam Throw (m)</u> |
|-----------------------------------|----------------------------------|-------------------------------|-------------------------------|------------------------------|
| DN 65 (5 bar) | 1070 | 38 | 1070 | 40 |
| DN 65 (8 bar) | 1360 | 48 | 1360 | 47 |
| DN 80 (5 bar) | 1800 | 45 | | |
| DN 80 (8 bar) | 2300 | 50 | | |
| DN 100 (5 bar) | 3850 | 50 | | |
| DN 100 (7.5 bar) | 4740 | 65 | | |
| DN 150 (5 bar) | 7540 | 55 | | |
| DN 150 (7.5 bar) | 9100 | 65 | | |

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|-----------------------|------|----|------|----|
| Water pipe WR | | | | |
| DN 80 (5 bar) | 1850 | 42 | | |
| DN 80 (8 bar) | 2370 | 50 | | |
| DN 100 (5 bar) | 3810 | 52 | | |
| DN 100 (7.5 bar) | 4720 | 59 | | |
| DN 150 (5 bar) | 3780 | 45 | | |
| DN 150 (8 bar) | 4830 | 60 | | |
| Nozzle MZ 2800 | | | | |
| 5 bar | 2180 | 43 | 2180 | 42 |
| 8 bar | 2790 | 48 | | |
| Nozzle MZ 3000 | | | | |
| 5 bar | 2800 | 54 | | |
| 8 bar | 3480 | 64 | | |
| Nozzle MZ 4000 | | | | |
| 5 bar | 2940 | 50 | | |
| 8 bar | 3750 | 62 | | |

4. 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.

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PLACES OF PRODUCTION

Göpfert AG
Industriestraße
25795 Weddingstedt
Germany



Saji Abraham
Senior Specialist
Fire & Safety, Statutory Discipline Team
UK&I Technical Support Office, 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).