DNV·GL

Certificate No:
**TAF000018E**

# TYPE APPROVAL CERTIFICATE

## This is to certify:

**That the Sprinkler and spray heads**

with type designation(s)
**RD, MXD-RD21, MXD-SD, MXD-WD**

Issued to
**Minimax GmbH & Co. KG**
**Bad Oldesloe, Germany**

is found to comply with
**IMO MSC/Circ.1165, Appendix A, as amended**

## Application :

**Fixed water spraying (deluge) systems for cooling or extinguishing purposes with flow rates as required by DNVGL Rules.**

**Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.**

Issued at **Hamburg** on **2019-10-09**
This Certificate is valid until **2020-10-08** .
DNV GL local unit: **Hamburg CMC**

Approval Engineer: **Andrii Pishchanskyi**

for **DNV GL**

**Olaf Drews**
**Head of Section**

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.


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Job Id: **262.1-031520-1**
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## Product description

Types RD, MXD-RD21, MXD-SD and MXD-WD are open spray heads made of brass or stainless steel with working pressure range between 0.5 bar and 15 bar and K-factors as follows:

| **Type** | **K-factor** $\left[\frac{l}{min \cdot \sqrt{bar}}\right]$ |
|---|---|
| MXD-RD21 | 7, 14, 20, 28, 34, 40, 48, 57, 67, 80, 94, 115 |
| MXD-WD | 1.7, 16, 20, 25, 31.5, 40, 50, 63 |
| MXD-SD | 20, 28, 40, 57 |
| RD | 4.5, 7, 10, 13, 21, 26.5, 34, 42, 48, 53, 60, 67, 73, 85, 94, 108, 120, 138, 153, 170 |

## Application/Limitation

This Type Approval certificate is not valid for designs, components, equipment, systems or products which are subject to classification by DNV GL.

Spray heads are used in fixed water spraying (deluge) systems for cooling or extinguishing purposes with flow rates as required by DNVGL Rules. Typical application is a deluge system for:

- Cargo spaces as per SOLAS Ch. II-2, Reg.19, 3.1.3;
- External surfaces (e.g. cargo tanks) as per DNVGL-RU-SHIP Pt.5, Ch.7, 3.1.1;
- Paint stores as per SOLAS Ch. II-2, Reg.10, 6.3.1.3.

Not permitted for protection of machinery spaces, cargo pump-rooms and ro-ro, special category and vehicle spaces.

## Type Approval documentation

1. Technical documentation:
    a. Product sheet No. M2-01-15 Part 1 – nozzles MXD-RD21 dated 2013-01;
    b. Product sheet No. M2-01-16 Part 1 – nozzles MXD-WD dated 2006-08;
    c. Product sheet No. M2-01-17 Part 1 – nozzles MXD-SD dated 2013-01;
    d. Product sheet No. S3-14-01 Part 1 – nozzles RD dated 2011-01;
2. Component test reports:
    a. File EX26426, Project 47867284101 dated 2014-09-17 from UL;
    b. File EX26426, Project 4786755343 dated 2015-01-20 from UL;
    c. File EX26426, Project 4786898684 dated 2015-12-17 from UL;
    d. Water flow test reports of types RD, SD and WD witnessed by GL dated 1997-05-21.

## Tests carried out

Tested according to MSC/Circ.1165 as follows:

1) Type MXD-RD21, MXD-SD and RD:
    a) Dimensions check;
    b) Heat resistance test;
    c) Vibration test;
    d) Impact test;
    e) Clogging test;
    f) Stress corrosion test;
    g) Water flow test;
2) Type WD:
    a) Clogging test.

## Marking of product

The spray head is to be marked with type designation.

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## Periodical assessment

The DNVGL surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with the procedure described in the Class Program DNVGL-CP-0338, Section 4.
This certificate is only valid if required periodical assessments are carried out with satisfactory results. To check the validity of this certificate, please look it up in https://approvalfinder.dnvgl.com