



Certificate No:
TAF00001MY

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Sprinkler and spray heads

with type designation(s)

HyFEx 07, HyFEx 11, HyFEx 15, HyFEx 18, HyFEx 22

Issued to

ENGIE Axima Germany GmbH
Hamburg, Germany

is found to comply with

DNV GL rules for classification – Naval vessels

Application :

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

Issued at **Hamburg** on **2022-01-17**

This Certificate is valid until **2027-01-16**.

for **DNV**

DNV local station: **Hamburg – CMC North/East**

Approval Engineer: **Andrii Pishchanskyi**

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2021-03

www.dnv.com

Page 1 of 2

Product description

Spraying nozzles of type HyFEx. Their main characteristics are as follows:

Characteristic	Value
Body material	Stainless steel grade 1.4571
Working pressure range	From 5 up to 9 bar
Spray angle	130°

Size	Flow rate at 5 bar [l/min]	Data sheet No.
No. 07	7	R 01.18.01.01
No. 11	11	R 01.18.01.02
No. 15	15	R 01.18.01.03
No. 18	18	R 01.18.01.04
No. 22	22	R 01.18.01.05

Application/Limitation

Spraying nozzles are type approved for use in foam/water drencher system (FDS) of type "HyFEx-System" as per DNVGL-RU-NAVAL Pt.3 Ch.5 Sec.9 §10.1.3.8 7). Refer to DNV Type Approval Certificate No. TAF00001N0 for Type Approval of foam/water drencher system (FDS) of type HyFEx-System.

Type Approval documentation

1. Systembeschreibung DSA-Anlage No. 530-DSA dated 2021-08-20;
2. WIS Type Approval Certificate No. 3/2002 dated 2002;
3. Supplement to WIS Type Approval Certificate No. 3/2002 dated 2008-06-19;
4. Telefax dated 1999-06-10 for Approval No. 613299 from WIS in Munster, Germany;
5. Clogging test reports dated 1999-06-28.

Tests carried out

1. Fire testing scope commensurate with MSC.1 Circ.1165 Appendix B;
2. Sulphur dioxide corrosion test;
3. Salt spray corrosion test;
4. Clogging test.

Marking of product

The components shall be marked for traceability to the Type Approval.

Periodical assessment

For retention of the Type Approval, a periodical assessment as per DNV-CP-0338 Sec.4 shall be performed by a DNV Surveyor in order to verify that the conditions for the Type Approval are complied with.

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>.