DNV·GL

Certificate No:
MEDB00005DH

EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Application of: Directive 2014/90/EU of 23 July 2014 on marine equipment (MED), issued as "Forskrift om Skipsutstyr" by the Norwegian Maritime Authority. This Certificate is issued by DNV GL AS under the authority of the Government of Norway.

This is to certify:

That the Helicopter facility foam fire-fighting appliances

with type designation(s)
M-FOI Foam Inductor

Issued to
Matre Maskin AS
Rubbestadneset, Norway

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2019/1397,**
item No. MED/3.67. SOLAS 74 as amended, Regulation II-2/18 and IMO MSC.1/Circ.1431

Further details of the equipment and conditions for certification are given overleaf.

This Certificate is valid until **2025-05-07**.
Issued at **Høvik** on **2020-05-08**

DNV GL local station:
Norway CMC, West

Approval Engineer:
Helge Bjørnarå

Notified Body
No.: **0575**

for **DNV GL AS**

Roald Vårheim
Head of Notified Body

NORWEGIAN ACCREDITATION PROD 019

The mark of conformity may only be affixed to the above type approved equipment and a Manufacturer's Declaration of Conformity issued when the production-surveillance module (D, E or F) of Annex B of the MED is fully complied with and controlled by a written inspection agreement with a Notified Body. The product liability rests with the manufacturer or his representative in accordance with Directive 2014/90/EU.
This certificate is valid for equipment, which is conform to the approved type. The manufacturer shall inform DNV GL AS of any changes to the approved equipment. This certificate remains valid unless suspended, withdrawn, recalled or cancelled.
Should the specified regulations or standards be amended during the validity of this certificate, the product is to be re-approved before being placed on board a vessel to which the amended regulations or standards apply.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV GL AS, its parent companies and subsidiaries as well as their officers, directors and employees ("DNV GL") 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.

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Product description

"M-FOI Foam Inductor",
The foam inductor come in five sizes (FOI15, FOI20, FOI30, FOI40 and FOI60) and two insertion rates (1% and 3%). Pressure loss over the proportioner ranges from 25-60%.

The proportioners are manufactured at the premises of Matre Maskin AS, Rubbestadneset, Norway.

Application/Limitation

Approved for use as a foam proportioner in fire fighting systems.

Type	Insertion rate	k-factor	Flow range [l/min]	Inlet pressure* [bar]
FOI15	1% and 3%	80 - 170	179 - 589	5 - 12
FOI20	1% and 3%	135 - 350	302 - 1212	5 - 12
FOI30	1% and 3%	150 - 700	335 - 2425	5 - 12
FOI40	1% and 3%	300 - 1150	671 - 3984	5 - 12
FOI60	1% and 3%	700 - 3050	1365 - 10566	5 - 12

* Rated pressure is 16 bar

Location and use of foam proportioners are subject to case by case approval. Final acceptance of the foam system, including foam proportioner, is to be made based on full-scale test of the entire foam system.

The housing of each foam proportioner shall be subjected to a hydrostatic pressure test at minimum 1.5 times the design pressure. No leakage is permitted.

Each product supplied is to be accompanied works certificate for the proportioner including materials used in the body, indicating mechanical and chemical properties and heat treatment.

Each product supplied with it manual for installation, use and maintenance.

Site test
Function testing of each foam proportioner shall be performed for each installation. The mixing ratio shall be as specified in each application and within a range of -0% to +30% of this (if the specified mixing ratio is 3.0%, test results between 3.0 and 3.9% will be accepted).

For foam proportioners using foam concentrates of Newtonian type with kinematic viscosity equal to or less than 100 cSt @ 0 °C and density equal to or less than 1.1 kg/dm3, this test can be performed with water instead of foam concentrate. In all other cases, foam and water shall be applied.

The flow used in the test shall be representative for application and within the approved flow range.

Type Examination documentation

Test Report No. 9F010819 dated 14 June 2019 from RISE, Borås, Sweden.

Test procedure doc. No. D2018002-KA-002, Rev.02, dated 20 March 2020 from maker and corresponding test records witnessed by DNV GL.

Dwg. No. M-FOI15-12345, Rev.02 dated 28 February 2020 from maker.
Dwg. No. M-FOI20-12112, Rev.03 dated 05 May 2020 from maker.
Dwg. No. M-FOI30-12346, Rev.02 dated 18 February 2020 from maker.
Dwg. No. M-FOI40-13155, Rev.01 dated 05 May 2020 from maker.
Dwg. No. M-FOI60-12349, Rev.01 dated 14 March 2019 from maker.

Tests carried out

The proportioners are tested as proportioners according to EN 13565-1 (2003) including A1 (2007); Discharge, Accuracy, Corrosion, Leak and Mechanical tests.

Marking of product

The product or packing is to be marked according to EN 13565 (2003) + A.1 (2007) Section 11 and the MED Mark of Conformity.