EC-TYPE EXAMINATION CERTIFICATE (MODULE B)

Certificate No:
MEDB0000193

Application of: Council Directive 96/98/EC of 20 December 1996 on Marine Equipment as amended by directive (EU) 2015/559, 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 the Kingdom of Norway.

This is to certify:

That the Galley exhaust duct fixed fire extinguishing systems components
with type designation(s)
HI-FOG Duct Systems for protection of Galley Ducts with cross sectional area not exceeding 1.15 m2
Issued to

Marioff Corporation Oy

VANTAA, Finland

is found to comply with the requirements in the following Regulations/Standards:
Annex A.1, item No. A.1/3.68 and Annex B, Module B in the Directive; SOLAS 74 as amended, Regulation II-2/9
Further details of the equipment and conditions for certification are given overleaf.
This Certificate is valid until **2021-08-17**.

Issued at **Høvik** on **2016-08-18**

DNV GL local station:
Helsinki
Approval Engineer:
Piotr Orzechowski

Notified Body
No.: **0575**

for **DNV GL AS**

Vidar Dolonen
Head of Notified Body

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Product description

"HI-FOG Duct Systems for protection of Galley Ducts with cross sectional area not exceeding 1.15 m2" is a water mist system for protection of galley extract ducts. The system is composed of spray heads, stainless steel piping, section valves and electric pump(s). Operation is manual. The system may be used to protect other ducts, such as laundry extract ducts.
The spray head is manufactured by Marioff Corp. Oy, Vantaa, Finland.

Application/Limitation

The spray heads are to be installed in the ducts according to the following specifications:

Spray heads in ducts	
Maximum horizontal spacing[1)]:	10.0 m
Maximum duct dimentions[2)]:	1.440 x 0.8 m (W x H) (1.15 m^2)
Minimum pressure at spray head:	50 bar
Spray head type:	DPF-01-0-30-A
Notes: 1) The spray heads are to be installed perpendicular to the duct wall. 2) Larger ducts can be assessed case by case (reduced spacing).	

Spray head information

Spray head	k-factor ($Q = k \times p^{1/2}$)	Rated flow	Drawing no.
DPF-01-0-30-A	2.35 lpm/$bar^{1/2}$	16.6 lpm at 50 bar	C-0011165 B
Spray heads are to be made of brass. Maximum operating pressure is 140 bar.			

For all systems:

1. Only stainless steel piping, or equivalent corrosion resistant pipes, is to be applied (to avoid clogging of sprinklers). Primary water supply shall be fresh water of potable quality.
2. The pump(s) or the pump unit is to be delivered with a product certificate whereas system components are to be inspected in accordance with the DNV GL Rules for ships (or equivalent standard as specified by the Flag Administration). The piping shall be regarded as class I.
3. Ambient room temperature for pump unit should be between +4 °C and +45 °C

The following items are to be submitted for approval for each project:

- System arrangement plans including location of spray heads, sections valves, release stations and pump unit (including water supply)
- Documentation of power supply and control system
- Specification of pipes, electrical motor, valves, pumps and associated components
- Pressure drop calculations and water capacity calculations
- Manual with operating, test and maintenance instructions

Installation testing:

- At least one section should be tested with full flow through the spray heads
- Pressure testing of water pipe system to at least 1,5 times maximum working pressure;
- Other tests as required by DNV GL Rules (pressure testing of piping, etc.) or a similar standard acceptable to the Flag Administration and according to maker's manual shall be carried out.

Periodical testing:

- Periodical control and inspection to be in accordance with makers test manual

Each product is to be supplied with its manual for installation/application, use and maintenance.

Type Examination documentation

Tests carried out

Tested according to ISO 15371(2009) (fire test) and IMO Res. A.800(19) (component test).

Marking of product

The spray nozzle is to be marked with type designation whereas control unit is to be marked with name of manufacturer and type designation and Mark of Conformity.