DNV·GL

Certificate No:
MEDB00006KS

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 Fixed water-based fire-fighting systems for ro-ro spaces, vehicle spaces and special category spaces: Performance-based systems as per IMO MSC.1/1430 Rev.1

with type designation(s)
Ultra Fog Ro-Ro Sprinkler System

Issued to
ULTRA FOG S.R.L.
VIAREGGIO, LU, Italy

is found to comply with the requirements in the following Regulations/Standards:
Regulation **(EU) 2020/1170,**
item No. MED/3.49b. SOLAS 74 as amended Regulation II-2/19, II-2/20 & X/3, 2000 HSC Code 7 and FSS Code 7, IMO Circ.1430 Clause 5

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

This Certificate is valid until **2025-09-02**.
Issued at **Høvik** on **2020-09-03**

DNV GL local station:
Italy/Malta CMC

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 This certificate remains valid unless suspended, withdrawn, recalled or cancelled.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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **344.1-010536-1**
Certificate No: **MEDB00006KS**

Product description

"Ultra Fog Ro-Ro Sprinkler System",
is a water mist system of sprinkler type. The system consists of sprinkler heads, stainless steel piping, section valves, control systems, and sprinkler pump(s).

The system is to be designed in accordance with the "Principal Requirements" of IMO MSC.1/Circ.1430 for performance based-systems.

Only sprinkler heads are type approved by this certificate. Other components are to be approved and/or certified case by case.

Application/Limitation

Approved for use as a fixed water-based fire-fighting systems for ro-ro spaces and special category spaces (performance based-system).

System design and installation shall be in accordance with principal requirements and performance-based system requirements of IMO MSC.1/Circ.1430 Ch.3 and 5 and following limitations:

System type	Sprinkler type	Max. spacing [1] [m]	Min. pres. at nozzles [bar]	Min. coverage area [m^2]
Deck height up to 2.5 m				
Sprinkler	603-300-035-B	5	100	See note [3]
Deck height up to 5.0 m [2]				
Sprinkler	603-260-160-B	4	100	See note [3]

Note
1) Distance to bulkheads should be half spacing.
2) Installations with height above 5 m will be considered case by case.
3) According to Principal Requirements of IMO MSC.1/Circ.1430 for type B or type C systems (as applicable).

Sprinkler information:

Sprinkler type	k-factor [$lpm/bar^{1/2}$]	Flow [lpm]	Pressure [bar]	Dwg. No.
603-300-035-B	3.35	33.5	100	20110810-603
603-260-160-B	4.20	42.0	100	20110810-603
Sprinkler heads are to be made of naval brass or stainless steel. Sprinkler heads are to be installed in a pendant (downward) position.				

For all applications:

A. Maximum system working pressure is 165 bar, while the minimum working pressure at the sprinkler heads is 100 bar for all application.
B. The pumps (or pump unit) shall be delivered with product certificate, whereas other system components are to be certified or inspected in accordance with class rules (or equivalent standard as specified by the Flag Administration).
C. Redundant pump arrangement is to be approved on a case by case basis.
D. Restrictions apply to use of this system on open ro-ro and open special category spaces (see IMO MSC.1/Circ.1430).
E. Only stainless steel piping or equivalent corrosion resistant pipes are to be applied (to avoid clogging of sprinklers). Primary water supply shall be fresh water of potable quality.
F. Pipes, couplings and other components are regarded as "Class I" piping.
G. The pump unit and section valves shall be installed in a room having ambient temperature between 4 °C and 45 °C.

The following documents are to be approved and filed by the Flag State Administration for each project:

a. System arrangement plans including routing of pipes, location of sprinkler heads, sections valves, release stations and pump unit.
b. Documentation of power supply and control system.
c. Specification of pipes, section valves, pumps, including drivers and associated components.

d. Pressure drop calculations and water mist capacity calculations.
e. Design, installation, operation and maintenance manual.

Installation
- Water to be in accordance with manufacturer's specification for water quality. No chemicals shall be added to the water, for the purpose of e.g. cleaning, bacterial control, corrosion inhibition, etc., without the acceptance from the Manufacturer.

Installation testing:
- Not less than 2 sprinkler heads shall be tested.
- Automatic start and stop of pumps.
- Alarms at the manned control station(s) shall be tested.
- Other tests as required by class 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:
- The testing shall comply with instructions from flag administration, statutory interpretations and maker's maintenance manual.
- Not less than 2 sprinkler heads shall be tested annually. Further testing will be required in case of failure(s) or for systems older than 5 years.

Technical Installation Manual No. NST Manual IMO Res. 265(84).doc from manufacturer.

Fire test reports:
Test report No. 01.16351.01.003 dated 8 May 2012 from SwRI, San Antonio, USA.

Component test reports:
Test report No. Ex5204 dated 23 July 1999 from UL, Northbrook, USA.
Test report No. 01.16351.01.011 dated 11 December 2012 from SwRI, San Antonio, USA.
Statement to component test No. 20130416.01, dated 16 April 2013 from manufacturer.

Drawings:
20110810-603, 940610-068, 940808-005, 950606-030, 950606-031, 950606-034, 950801-001 from manufacturer.

Tests carried out
Fire performance test in accordance with IMO MSC.1/Circ.1272.

Component tests in accordance with relevant parts of IMO Res.A.800(19), and in compliance with IMO MSC.1/Circ.1272.

Marking of product
The sprinkler heads are to be marked with type designation, the MED Mark of Conformity, Notified Body No. and the year of manufacturing (see first page) whereas the pump unit is to be marked with name and address of manufacturer and type designation.