

**TYPE APPROVAL CERTIFICATE**  
No. FPE287507CS

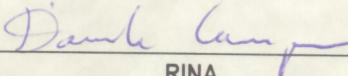


**This is to certify** that the product identified below is in compliance with the regulations herewith specified

|                             |   |
|-----------------------------|---|
| <i>Description</i>          | <b>Fixed water-based fire-extinguishing systems in machinery spaces</b>   |
| <i>Type</i>                 | <b>FOGMAKER UNIVERSAL</b>   |
| <i>Applicant</i>            | <b>OFIRA ITALIANA SPA<br/>VIA ERITREA, 20/F<br/>25126 BRESCIA (BS)<br/>ITALY</b>  |
| <i>Manufacturer</i>         | <b>FOGMAKER INTERNATIONAL AB</b>  |
| <i>Place of manufacture</i> | <b>UTTERVAEGEN 6<br/>SE 35245 VAEXJOE<br/>SWEDEN</b>  |
| <i>Reference standards</i>  | <b>Rules for the type approval of fixed water-based fire-extinguishing systems in machinery spaces; ISO 9094-1:2003 ; ISO 9094-2:2002</b> |

Issued in **Genoa** on **February 5, 2007**. This Certificate is valid until **February 4, 2012**



  
RINA

✕ *Franca Parisi*

This certificate consists of this page and 1 enclosure

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### Reference documents

- File n° 2006CS012875
- FOGMAKER TECHNICAL SPECIFICATION filed with n° FPE9775.
- FOGMAKER User Manuals filed with n° FPE9778; FPE 9781; FPE 9780.
- FOGMAKER drawings filed with n° FPE9779 and FPE 9776.

### System description and main components

The system is a fixed water-based fire-extinguishing system for machinery spaces produced by FOGMAKER UNIVERSAL AB Uttervaegen, Sweden. The system consists in modules of one or more cylinders, release valves, piping, nozzles. Each cylinder contains 6.5 l of extinguishing medium pressurised at 100 bar using nitrogen as driving gas.

The extinguishing medium consists in a mixture of the following components:

- 3% of Sthamex AFFF
- 3% of antifreezing liquid DOWCAL 20
- Fresh water

The activation of the system is combined manual and automatic, manual activation is achieved by means of a steel wire, automatic activation is achieved by means of a pressurised pipe which activates the system at the temperature of 120°C.

Details of all system components according to FOGMAKER User Manual filed with n° FPE9778.

### Fields of application

A and B Class fires in unmanned machinery spaces of all vessels having a length not exceeding 24 m and machinery spaces with a gross volume not exceeding 37 m<sup>3</sup> to which Directive 96/98/EC as amended is not applicable.

### Installation requirements and system design

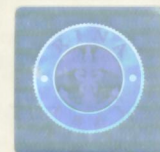
- Nozzle type M6 Fogmaker
- Maximum nozzles spacing 0.9 m
- Maximum distance from bulkheads 0.45 m
- Maximum piping length 29.9 m
- Average nozzle flow 1.2 l/min

| Gross Volume to be protected<br>[m <sup>3</sup> ] | Maximum number of nozzles<br>allowed | Minimum number of cylinders<br>required |
|---|--------------------------------------|---|
| $15 < V \leq 37$                                  | 22                                   | 4 x 6.5 l                               |
| $5 < V \leq 15$                                   | 12                                   | 2 x 6.5 l                               |
| $V \leq 5$  | 5                                    | 1 x 6.5 l                               |

For spaces having a volume exceeding 15 m<sup>3</sup> at least 10 nozzles are to be installed at ceiling height.

For spaces having a volume of  $10 \leq V \leq 15$  m<sup>3</sup> at least 8 nozzles are to be installed at ceiling height.

For what is not specified in this certificate the installation is to be carried out following the instructions of the manufacturer as in the "Fogmaker User Manual" filed with FPE 9778, to be supplied with the system.



Handwritten signature or mark.

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**Remarks**

For vessels classed by RINA :

- a. The system is to be capable of being released from the main steering position;
- b. If the main steering position is more than 5 m away from the space to be protected, means of local activation shall be provided close to such a space;
- c. ~~The release device shall be readily accessible and operable;~~
- d. A visual indication of discharge shall be provided;
- e. Ventilation openings serving the protected space shall be provided with means of closure operable from outside the protected space.
- f. Installation of automatic systems is acceptable for spaces having a volume not exceeding 15 m<sup>3</sup>.
- g. Copy of the "Fogmaker User Manual" is to be delivered with the system.

For vessels certified in accordance with Directive 94/25/EC:

- h. In lieu of what in the above items a) to g) the systems shall be installed in compliance with the requirements contained in ISO 9094-1 ISO 9094-2.
- i. Copy of the user installation and maintenance manuals are to be delivered with the system.

Mass produced articles of the aforesaid material are to be marked or labelled with the trade name and the data of the Company to whom this Certificate is addressed. The validity of this Certificate is dependent on the compliance of each manufactured product with the prototype which underwent the type approval tests and such compliance shall be stated by the manufacturer. Moreover, the Company is fully responsible for ensuring compliance by performing all the necessary checks also in respect of its sub-suppliers. Notwithstanding the above, RINA reserves the right to make any checks it deems appropriate during production. The validity of this Certificate ceases in the case of amendments to the rules on the basis of which the Certificate was issued.

**Genoa 05/02/2007**



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