



MARINE DIVISION

Certificate number: 20052/B0 BV

File number: ACI 2000/054/001

Product code: 5561D

This certificate is not valid when presented without the full attached schedule composed of 7 sections

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TYPE APPROVAL CERTIFICATE

This certificate is issued to

DESAUTEL - FOGMAKER INTERNATIONAL AB
MONTLUEL - FRANCE

for the type of product

WATER-BASED FIRE EXTINGUISHING SYSTEMS

FOGMAKER for machinery spaces up to 96 c.m.

Requirements:

Test protocol as per Desautel document "Fogmaker", version 3, dated 19.04.07.

This certificate is issued to attest that BUREAU VERITAS did undertake the relevant approval procedures for the product identified above which was found to comply with the relevant requirements mentioned above.

This certificate will expire on: 13 Apr 2018

For BUREAU VERITAS,

At BV LYON, on 13 Apr 2013,

Jean-Marc Cabuzel



This certificate remains valid until the date stated above, unless cancelled or revoked, provided the conditions indicated in the subsequent page(s) are complied with and the product remains satisfactory in service. This certificate will not be valid if the applicant makes any changes or modifications to the approved product, which have not been notified to, and agreed in writing with BUREAU VERITAS. Should the specified regulations or standards be amended during the validity of this certificate, the product(s) is/are to be re-approved prior to it/they being placed on board vessels to which the amended regulations or standards apply. This certificate is issued within the scope of the General Conditions of BUREAU VERITAS Marine Division available on the internet site www.veristar.com. Any Person not a party to the contract pursuant to which this document is delivered may not assert a claim against BUREAU VERITAS for any liability arising out of errors or omissions which may be contained in said document, or for errors of judgement, fault or negligence committed by personnel of the Society or of its Agents in establishment or issuance of this document, and in connection with any activities for which it may provide.

THE SCHEDULE OF APPROVAL

1. PRODUCT DESCRIPTION:

FOGMAKER is a manually operated water mist extinguishing system for machinery spaces with volumes not greater than tested (see below).

Composition of the FOGMAKER system:

- modules of one or more pressurized cylinders containing water as the extinguishing agent and nitrogen as the driving gas (105 bar at + 20°C);
- piping (copper, stainless steel) 6 mm internal diameter;
- nozzles (brass).

Main characteristics of the FOGMAKER system:

Maximum volume of protected space (c.m.)	39.5	96
Maximum enclosure height (m)	2.91	3
Quantity of extinguishing agent used for the volume tested (l)	47 (1.19 l/c.m)	78 (0.81 l/c.m)
Additive used	AFFF 3%	AFFF 3%
Nozzle type	Fogmaker nozzle "Dysa"	Fogmaker nozzle "Dysa"
Flow constant K	0.13	0.13
Horizontal spacing between nozzles (m)	0.3	0.3
Maximum number of nozzles per module (as per test)	12 nozzles for module 2 x 6.5 l 9 nozzles for module 2 x 4 l	14 nozzles for module 2 x 6.5 l

The system was tested as follow:

- On the ceiling, the branch of nozzles was centrally positioned, with nozzles pointing vertically downward;
- On bulkheads, the branches of nozzles were located half distance between top and bottom of the room, with nozzles pointing 40-45° toward the floor (test in the 39.5 c.m volume), 25-45° (test in the 96 c.m volume).

The maximum length of the piping associated to one module shall be as per test.

2. DOCUMENTS AND DRAWINGS:

Drawing/Documentation	Reference
Module components	N° 1042-11-Reservd
Cylinder Uni 66/2	N° 1062
Nozzle	N° 1502/1503
Manometre	N° 6200-10
Pressure release valve	N° 6035 (sheet 2/9)
Manual for installation, use and maintenance	Fogmaker, edition Septembre 2005

3. TEST REPORTS:

All tests have been carried out on the basis of Desautel test protocol, document "Fogmaker", version 3, dated 19.04.07 (IMO MSC/Cir.1165 has been partly used as a guideline to establish this test protocol).

- N°LN02213/N14466/0 dated August 22nd, 2007 (partly based on ISO 6988) issued by Laboratoires Pourquery, France;
- N°LN02213/N14467/0 dated August 22nd, 2007 issued by Laboratoires Pourquery, France;
- N°ST0817 dated July 10th, 2007 issued by SOPAVIB, France;
- N°3004246-ESS dated July 20th, 2007 issued by CETE APAVE SudEurope, France;
- N°RE3204 dated September 20th, 2007 issued by SOPAVIB, France.
- Tests reports n°PE 07 7469 dated October 17th, 2007 and PE 08 7651 dated March 25th, 2008 (partly based on CEN TS 14972) issued by CNPP Laboratories, France.

4. APPLICATION / LIMITATION:

4.1 - The installation of the system FOGMAKER on board a ship is subject to the authorization of the flag Administration for the ship concerned.

4.2 - Evidence of compliance of FOGMAKER cylinders with the pressure equipment directive 97/23 EC is to be submitted to the flag Administration for each ship application.

4.3 - This system is NOT intended for ships having to comply with SOLAS regulation.

4.4 - The arrangement of the system, capacity calculation, control means, etc. are to be submitted to the flag Administration for each ship application.

4.5 - The fitting aboard shall be the same as used for the test.

5. PRODUCTION SURVEY REQUIREMENTS:

5.1 - The FOGMAKER is to be supplied by **DESAUTEL - FOGMAKER INTERNATIONAL AB - Montluel** in accordance with the type described in this certificate.

5.2 - This type of product is within the category DBV of Bureau Veritas Rule Note NR320.

6. MARKING OF PRODUCT:

The product is to be marked with manufacturer name and designation.

7. OTHERS:

7.1 - This approval is given under the understanding that the Manufacturer will accept full responsibility for informing shipbuilders or their sub-contractors of the proper methods of fitting and general maintenance of the approved equipment and the conditions.

7.2 - This Certificate supersedes the Type Approval Certificate n° 20052/A0 BV issued on 26/05/2008 by the Society.

*** END OF CERTIFICATE ***