



CERTIFICATE OF FIRE APPROVAL

This is to certify that

The product detailed below will be accepted for compliance with the applicable Lloyd's Register Rules and Regulations and with the International Convention for the Safety of Life at Sea, (SOLAS), 1974, as amended, for use on ships and offshore installations classed with Lloyd's Register, and for use on ships and offshore installations when authorised by contracting governments to issue the relevant certificates, licences, permits etc.

Manufacturer Bete Fog Nozzle Inc

Address 50 Greenfield Street
Greenfield
MA, 01301
United States of America (USA)

Type WATER SPRAY SYSTEM COMPONENT

Description Fixed Fire Extinguishing System Component - Type: "N Series Open Water Spray Nozzles"

Specified Standard SOLAS 1974 (as amended), Chapter II-2, Regulation 10.4.1.1.3

The attached Design Appraisal Document forms part of this certificate.

This certificate remains valid unless cancelled or revoked, provided the conditions in the attached Design Appraisal Document are complied with and the equipment remains satisfactory in service.

Date of issue 1 May 2018

Expiry date 30 April 2023

Certificate No. SAS F180112

Signed

Sheet No 1 of 3

Name

B. McDonald
Surveyor to Lloyd's Register EMEA
A Member of the Lloyd's Register Group

Note:

This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

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DESIGN APPRAISAL DOCUMENT

Date 1 May 2018	Quote this reference on all future communications
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F180112

This Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Factory Mutual Research, Massachusetts, United States of America, Test Report ID: 3039960 dated 25 March 2013. Factory Mutual Research Revision Report 797-12217-268 dated 27 June 2013

CONDITIONS OF CERTIFICATION

1. For applications where the nozzles are used as an integral part of an approved fixed water spray fire extinguishing system, at an operating pressure of 1.7–5.2 bar
2. Application in each case to be approved by Lloyd's Register at the Design Stage
3. Approved nozzle type: "N series" open water-spray nozzles (N1, N2, N3, N4, N5, N6, N7, N8, N9 and N10)
4. Evaluation of the test results are given in Appendix 1 attached to this certificate
5. Production items are to be manufactured in accordance with a quality control system which shall be maintained to ensure that items are of the same standard as the approved prototype

PLACE OF PRODUCTION

Bete Fog Nozzle Inc.
50 Greenfield Street,
Greenfield, MA 01301
United States of America (USA)



Bruce McDonald
ATSO Manager
Statutory Fire and Safety
London Design Support Office
Lloyd's Register EMEA

Supplementary Type Approval Terms and Conditions

This certificate and Design Appraisal Document relates to type approval, it certifies that the prototype(s) of the product(s) referred to herein has/have been found to meet the applicable design criteria for the use specified herein, it does not mean or imply approval for any other use, nor approval of any products designed or manufactured otherwise than in strict conformity with the said prototype(s).



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APPENDIX 1

Model	Nominal K-Factor		Nominal Spray Angle (Degrees)	NPT (in.)	Finishes
	gpm/psi ^{1/2}	lpm/bar ^{1/2}			
N1	0.95	13.7	90, 120	1/2	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N2	1.68	24.2	90, 120	1/2	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N3	2.61	37.6	90, 120	1/2	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N4	3.81	54.9	90, 120	1/2	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N5	5.22	75.2	90, 120	1/2	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N6	6.64	95.7	90, 120	1/2, 1	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N7	10.6	153	90, 120	1	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N8	15.0	216	90, 120	1 1/2	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N9	20.4	293.8	90,120	1 1/2	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys
N10	26.7	384.5	90, 120	1 1/2	Brass, Bronze, Stainless Steels, Titanium and Cobalt, Copper, Nickel and Tantalum based Alloys