

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	Delta Fire Limited
Address	Wendover Road, Rackheath Industrial Estate, Norwich, NR13 6LH, United Kingdom (UK)
Type	Fire Fighting - Self-Inducing Foam Branch Pipe/Foam Branch Pipe And Variable In-Line Foam Inductor
Description	Self Inducing Foam Branch Pipe - Type: "HV225S, HV450S & HV900S" and Foam Branchpipe and Variable In-Line Foam Inductor - Type: "HV225-Z225", "HV450- Z450" and "HV900-Z900"
Trade Name	HV225S, HV450S & HV900S and HV225-Z225, HV450-Z450 & HV900-Z900
Specified Standard	SOLAS 1974 (as amended) Performance Testing

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 EMEA of any modification or changes to the equipment in order to obtain a valid Certificate.

The Design Appraisal Document and its supplementary Type Approval Terms and Conditions form 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.

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Kingdom

Saji Abraham

Surveyor to Lloyd's Register EMEA
A member of the Lloyd's Register group

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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. LR2006612SF

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions, and this Design Appraisal Document forms part of the Certificate.

This Certificate is a replacement of previous Lloyd's Register EMEA Certificate of Fire Approval No: SAS F150118.

APPROVAL DOCUMENTATION

Marine Safety Agency Certificate of Inspection and Tests of a specimen of an HV 225 Foam Making Branchpipe and Z225 Inline variable Foam Inductor dated 19 January 1995.

Marine Safety Agency Certificate of Inspection and Tests of a specimen of an HV 225S Self Inducing Foam Making Branchpipe dated 20 January 1995.

LR Witness Certificate ABN1157173/1A, dated 6 December 2011.

CONDITIONS OF CERTIFICATION

1. Foam making branchpipes HV225, HV450 & HV900 and variable in-line foam inductors Z225, Z450 & Z900
 - 1.1 Instructions concerning the maintenance and operation are to be supplied.
 - 1.2 The branchpipe is to be supplied with foam compound from a portable tank containing at least 20 litres with an identical spare tank of foam compound provided.
 - 1.3 Sample performance for foam making branchpipe HV225 and variable in-line foam inductor Z225, Z450 & Z900;

Model Type	Foam	Inlet Pressure	Induction Rate	Expansion	Foam Solution	Range of Throw	Foam Rate
		(bar)	(%)	Ratio	(l/min)	(m)	(m ³ /min)
HV225	ATC 6% FC602	7.0	6.0	9.7	195	12	1.9
HV450	AFFF 6% DFC506	7.0	5.9	9.0	372	16	3.35
HV900	AFFF 6% DFC503	7.0	3.4	8.1	715	20	5.79

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2. Self inducing foam making branchpipe HV225S, HV450S & HV900S

- 2.1 The branch pipe is to be supplied complete with pick up tube.
- 2.2 Instructions concerning the maintenance and operation are to be supplied.
- 2.3 Sample performance for foam making branchpipe HV225S, HV450S & HV900S;

Model Type	Foam	Inlet Pressure	Induction Rate	Expansion	Foam Solution	Range of Throw	Foam Rate
		(bar)	(%)	Ratio	(l/min)	(m)	(m ³ /min)
HV225S	ATC 6% FC602	7.0	7.5	12	215	14.0	2.2
HV450S	AFFF 6% DFC506	7.0	6.3	10.9	449	25	4.89
HV900S	AFFF 6% DFC503	6.9	3.7	10.3	873	26	8.99

- 3. All foam concentrates to be separately approved for low expansion foam applications and final installation trials to be conducted for each installation.
- 4. 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.

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PLACE OF PRODUCTION

Delta Fire Limited
Wendover Road
Rackheath Industrial Estate
Norwich, NR13 6LH
United Kingdom (UK)



Saji Abraham
Senior Specialist
Fire & Safety, Statutory Discipline Team
UK&I Technical Support Office, Marine & Offshore
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).