



## EC TYPE EXAMINATION (MODULE B) CERTIFICATE


This is to certify that:

LLOYD'S REGISTER VERIFICATION LIMITED (LRV), designated as a "notified body" under the terms of the Merchant Shipping (Marine Equipment) Regulations 2016 (S.I. 2016 No.1025), did undertake the relevant type approval procedures for the equipment identified below which was found to be in compliance with the essential Fire protection equipment requirements of Marine Equipment Directive (MED) 2014/90/EU and Commission Implementing Regulation (EU) 2017/306 indicating design, construction and performance requirements and testing standards for marine equipment, subject to any conditions in the Design Appraisal Document attached hereto.

<b>Manufacturer (Applicant)</b>	Dafo Fomtec AB
<b>Address</b>	P.O. Box 683 SE - 135 26 Tyresö Sweden
<b>Reference</b>	<b>Regulation 2017/306</b>
<b>Regulation Item (No &amp; Item designation)</b>	<b>MED/3.58 - FIXED LOW EXPANSION FOAM FIRE EXTINGUISHING SYSTEMS COMPONENTS FOR MACHINERY SPACES &amp; TANKER DECK PROTECTION</b>
<b>Product Type</b>	<b>FOAM CONCENTRATE</b>
<b>Product Description</b>	Fire Extinguishing "Type B" Synthetic Low Expansion Foam Concentrate – Types: "AFFF 1%F, 3% & 6%" for use on hydrocarbon fires
<b>Specified Standard</b>	IMO MSC.1/Circular 1312

The attached Design Appraisal Document (schedule) forms part of this certificate.

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

Date of issue	7 August 2017	Expiry date	6 August 2022
Certificate No.	MED 1750147	Signed	
Sheet No.	1 of 3	Name	S. Abraham For and on behalf of Lloyd's Register Verification LRV EC Distinguishing No. 0038

**Note:**

This certificate is issued under the authority of the MCA.

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 the notified body named on this certificate of any modification or changes to the equipment in order to obtain a valid Certificate.

Lloyd's Register Verification Limited (Reg. no. 4929226) is a limited company registered in England and Wales. Registered office: 71 Fenchurch Street, London, EC3M 4BS, UK. A subsidiary of Lloyd's Register Group Limited.

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Lloyd's  
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Issue number 1

**DESIGN APPRAISAL DOCUMENT**

Date 7 August 2017	Quote this reference on all future communications SOUTSO/SFS/TA/KT/SA/WP28673804
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**ATTACHMENT TO EC TYPE EXAMINATION (MODULE B) CERTIFICATE No. MED 1750147**

The undernoted documents have been appraised for compliance with the relevant requirements of International Conventions and European Union legislation for the EC Type Examination of Marine Equipment for use on Merchant Ships Registered in the European Economic Area.

This Design Appraisal Document (schedule) forms part of the Certificate.

**APPROVAL DOCUMENTATION**

Lloyds Register Helsingborg Witness Certificates; HBG 1210047/3, HBG 1210047/4 and HBG 1210047/5, all dated 29 June 2012 for testing conducted at the Falck Nutek Test Facility, Esbjerg, Denmark.

**CONDITIONS OF CERTIFICATION**

1. Foam concentrate type "AFFF": When used in 1%, 3% and 6% maximum concentration and as-tested expansion ratios of 7:1, 7:1 and 8:1 respectively, in suitable equipment for Class B hydrocarbon fires in machinery spaces and tanker deck protection
2. The foam concentrates should be stored above their freezing temperature as per the following:

Foam Type	Foam Concentrate	Freezing Temperature (°C)	Storage Temperature Range (°C)
AFFF 1%	Synthetic Film	-15	-14 to 55
AFFF 3%	Forming Foam	-5	-4 to 55
AFFF 6%		-3	-2 to 55

3. The storage container should be compatible with the foam concentrates throughout the service life of the foam
4. Periodical testing of foam concentrates for hydrocarbon fires should be carried out in accordance with Annex 4 and 5 of IMO MSC.1/Circ.1312, not more than 3 years after being supplied to the ship and after that, every year, by independent laboratories or authorised service suppliers acceptable to the Administration
5. Production items of the subject equipment are to be manufactured in accordance with either an approved Production Quality Assurance system (Module D), a Product-Quality assurance system (Module E) or a Product Verification Process (Module F). The wheelmark cannot be affixed to the product until a conformity assessment module is in place
6. Each item, batch or lot of the equipment is to be issued with a "Declaration of Conformity" and have the "Mark of Conformity" affixed after a conformity assessment module is in place



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##### PLACE OF PRODUCTION

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Southampton Technical Support Office, Marine & Offshore  
For and on behalf of Lloyd's Register Verification  
LRV EC Distinguishing No. 0038