



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 Dafo Fomtec AB

Address P.O. Box 683
SE - 135 26 Tyresö
Sweden

Type FOAM CONCENTRATE

Equipment Description Fire Extinguishing 'Type B' Protein based Low Expansion Foam Concentrate -
Types: "P3% & P6%" for use on hydrocarbon fires

Specified Standard IMO MSC.1/Circular 1312 and MSC.1/Circular 1312/Corr.1

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 7 August 2017

Expiry date 6 August 2022

Certificate No. SAS F170172

Signed

Sheet No 1 of 3

Name

S. Abraham

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 7 August 2017	Quote this reference on all future communications SOUTSO/SFS/TA/KT/SA/WP28673804
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ATTACHMENT TO CERTIFICATE OF TYPE APPROVAL No. SAS F170172

This Design Appraisal Document forms part of the Certificate.

APPROVAL DOCUMENTATION

Lloyds Register Helsingborg Witness Certificates; HBG 1210047/1, dated 21 June 2012 for testing conducted at the Falck Nutek Test Facility, Esbjerg, Denmark.

Lloyds Register Helsingborg Witness Certificates; HBG 1210047/2, dated 29 June 2012 for testing conducted at the Falck Nutek Test Facility, Esbjerg, Denmark.

CONDITIONS OF CERTIFICATION

1. Foam concentrate type "P": When used in 3% minimum and 6% maximum concentration and an tested expansion ratio of 5:1, 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)
P 3%	Protein Foam	-17	-16 to 49
P 6%		-17	-16 to 49

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 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



Lloyd's
Register

Lloyd's Register EMEA

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PLACES OF PRODUCTION

Dafo Fomtec AB
Garnisonsgatan 47A
254 66 Helsingborg
Sweden


Lloyd's Register EMEA

Saji Abraham
Senior Specialist
Statutory Fire & Safety
Southampton 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).