



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. F-19531

This is to certify that the
Foam Fire Extinguishing Liquid

with type designation(s)
Fomtec ARC 3x3

Manufactured by
Dafo Fomtec AB
TYRESÖ, Sweden

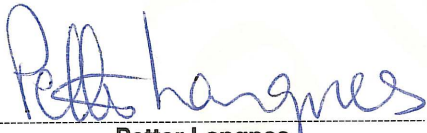
is found to comply with
Det Norske Veritas' Interpretation of SOLAS 1974 Convention as Amended
Det Norske Veritas' Rules for Classification of Ships
Det Norske Veritas' Offshore Standards

Application

Approved for use as a low expansion foam forming liquid in approved fixed and mobile fire extinguishing systems.
Minimum storage/usage temperature 2 °C

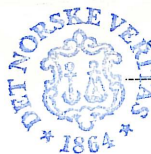
Høvik, 2010-09-03
for Det Norske Veritas AS


This Certificate is valid until
2012-06-30



Petter Langnes
Head of Section

DNV local office:
Stockholm





Patrick Aubert
Surveyor

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Certificate No.: F-19531
File No.: 474.65
Job Id.: 262.1-010261-1

Product description

"Fomtec ARC 3x3"

Low expansion aqueous film forming (AFFF) and alcohol resistant foam (AR) concentrate.

Application/Limitation

Fomtec ARC 3x3 concentrate is approved for use against hydrocarbon fires and alcohol fires (polar solvents).

Admixture to both sea- and freshwater is accepted.

Nominal mixing ratio: 3 % (both hydrocarbon fires and alcohol fires)

Minimum usage temperature: + 2 °C (35.6 F)

Maximum usage temperature: + 50 °C (122 F)

Storage: Stainless steel or plastic containers.

Manufactured: Dafo Fomtec AB, Mørsaregatan 19, Helsingborg, Sweden.

The validity of the certificate is dependent on the compliance of each manufactured product with the prototype which underwent the type approval tests and such compliance shall be stated by the manufacturer.

Each product is to be supplied with its manual for application, use, storage, transport and maintenance.

The storage facilities and piping arrangement onboard the vessel are to be designed and constructed with regard to seawater exposure (where applicable), and the minimum allowed temperature for the foam liquid.

This approval does not address the foam generating equipment, only the foam concentrate.

Periodical controls of foam concentrates stored on board

The foam liquid is to be delivered with a declaration of the main characteristics (sedimentation, pH-value, expansion ratio, drainage time and volumetric mass). The declaration will be the basis for the annual condition test (each year after 3 years). The annual condition test shall include a small scale fire test in accordance with IMO MSC.1/Circ.799.

Type Approval documentation

Certification in accordance with Standard for Certification No. 1.2, Type Approval, April 2009.

Test reports No. 2004/CS/01/5045 dated 15 December 2004, No. 2005/CS/01/3803/1 dated

30 September 2005 and No. 2005/CS/01/3803/2 dated 29 September 2005. All from Registro Italiano Navale (RINA), Genoa, Italy.

Tested according to IMO MSC/Circ.582, IMO MSC/Circ.799.

Certificate Retention Survey Report dated 21 July 2010 from DNV Malmø.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire-technical rating.

Certificate Retention Survey

Det Norske Veritas' surveyor is to be given permission to perform Certification Retention Surveys at any time during the validity period of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Standard for Certification No. 1.2 item 4.

