



Test Report - Fire Extinguishing Media to EN 1568-3:2008 Specification

Office: **Helsingborg**

Date: **20 December 2010**

This certificate is issued to **DAFO Fomtec AB, Helsingborg, Sweden**

to certify that at their request the undersigned Surveyor to this society did attend their premises at Garnisonsgatan 47A and the test site of "if Skadesenter" at Hobøl, Norway for the purpose of selecting samples of FOMTEC AFFF 3% Ultra LT to confirm that the properties were within the technical specifications and were in accordance with EN 1568-3: 2008(E) .

The necessary tests were witnessed and the results obtained were all within the limits given in the manufacturer's specification, and the requirements of EN 1568-3:2008(E).

Report:

Tolerance to Freezing and thawing (Annex E)

No stratification or non-homogeneity could be detected in the sample;

Sediment (Annex C)

Before ageing of the sample = 0%
 After ageing of the sample (24 hours at 60 °C) = 0%

Viscosity at 20 °C = 6.4 mPa.s

pH of the concentrate at 20 °C = 7.6

Surface Tension, Interfacial Tension and spreading coefficient (Annex F)

	<u>Surface Tension</u> Dynes/cm	<u>Interfacial Tension</u> Dynes/cm	<u>Spreading Coefficient</u> Dynes/cm
Before Conditioning	19.2	2.0	3.8
After Conditioning			
Top Sample	19.5	1.2	4.3
Bottom Sample	19.0	1.6	4.4
at -30 °C for 4 x 24 hr followed by 48 hrs at 20 °C and at 60 °C for 7 days followed by 2 days at 20 °C			

Expansion and Drainage (Annex G)

	Fresh water		Sea water	
	Expansion	Drainage time	Expansion	Drainage time
Before Conditioning of the sample	7.8	3' 22"	8.5	3' 41"
25% drainage time	3' 22"		3' 41"	
50% drainage time	5' 46"		6' 00"	
After Conditioning of the sample	Fresh Water		Sea Water	
In accordance with Annex E	Top	Bottom	Top	Bottom
Expansion	8.8	8.0	8.3	8.2
25% drainage time	3' 33"	3' 20"	3' 39"	3' 59"
50% drainage time	5' 50"	5' 33"	6' 00"	6' 10"

Lloyd's Register, its affiliates and subsidiaries and their respective officers, employees or agents are, individually and collectively, referred to in this clause as the 'Lloyd's Register Group'. The Lloyd's Register Group assumes no responsibility and shall not be liable to any person for any loss, damage or expense caused by reliance on the information or advice in this document or howsoever provided, unless that person has signed a contract with the relevant Lloyd's Register Group entity for the provision of this information or advice and in that case any responsibility or liability is exclusively on the terms and conditions set out in that contract.

Fire Tests (Annex H)

A) Forceful application in accordance with EN 1568-3

Fire Tests carried out in accordance with Annex H1 and H3 using:-

Fresh water and Sea water

Pre burn time	60 seconds
Foam application	180 seconds
Wait after foam application	300 seconds
Fire try	144B (4.5 m ²)
Fuel	Commercial Heptane on water bed
Air Temperature (°C)	15 °C
Water Temperature (°C)	15 °C
Fuel Temperature (°C)	15 °C
Foam Temperature (°C)	15 °C
Wind speed (m/sec.)	0

	<u>Fresh water</u>	<u>Sea water</u>
90% Control	1' 10"	1' 05"
99% Control	1' 40"	1' 55"
100% Extinction	2' 00"	3' 00"
25% Burnback time	N/A	N/A

B) Gentle application in accordance with EN 1568-3

Fire Tests carried out in accordance with Annex H1 and H2 using:-

Fresh water and Sea water

Pre burn time	60 seconds
Foam application	300 seconds
Wait after foam application	300 seconds
Fire try	144B (4.5 m ²)
Fuel	Commercial Heptane on water bed
Air Temperature (°C)	15 °C
Water Temperature (°C)	15 °C
Fuel Temperature (°C)	15 °C
Foam Temperature (°C)	15 °C
Wind speed (m/sec.)	0

	<u>Fresh water</u>	<u>Sea water</u>	<u>Fresh water</u>
90% Control	1' 10"	0' 55"	0' 50"
99% Control	1' 55"	1' 20"	1' 35"
100% Extinction	5' 00"	2' 20"	3' 15"
25% Burnback time	>15'	>15'	>15'

From the above test results it is confirmed that FOMTEC AFFF 3% Ultra LT is a film forming foam concentrate suitable for use at 3% concentration with potable and sea water.

Fomtec AFFF 3% Ultra LT has tolerance to freezing and thawing (annex E). The product is suitable for storage above -30 °C. The fire extinguishing performance is Class I and the burnback level is B using potable water and sea water.

Performance level achieved:

Extinguishment Class I

Burnback resistance level B.

Client: Dafo Fomtec AB
Helsingborg, Sweden



Gerhard A Kucer
Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group