



Project: Fire Extinguishing Media to EN 1558-3 & EN 1568-4 Specifications

Client: Dafo Fomtec AB
Tyreso,
Sweden

Office: Liverpool

Clients Order Number:

Date: 18 May 2005

Order Status: Complete

Inspection Dates

First: 12 April 2005

Final: 27 April 2005

This certificate is issued to Dafo Fomtec AB, to certify that at their request, the undersigned Surveyor to this Society did select samples of FOMTEC ARC 1x1 (Newtonian), for the purpose of confirming that the properties were within the technical specifications and were in accordance with EN 1568-3 and EN 1568-4.

The necessary tests were witnessed by the Surveyor and the results obtained were all within the limits given in the manufacturer's specification, and the requirements of EN 1568-3 and EN 1568-4

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 = 0.1%

After ageing of the sample = 0.1%

(24 hours at 60 C)

Viscosity at 20 C = 28.0 m.Pa.s (Brookfield)

pH of the concentrate at 20 C = 7.18

Surface Tension, Interfacial Tension and Spreading Coefficient (Annex F)

	Surface Tension Dynes/cm	Interfacial Tension Dynes/cm	Spreading Coefficient Dynes/cm
Before conditioning:	18.2	3.0	+3.8
After Conditioning at -30 C for 24 hours followed by 48 hours at 20 C (four cycles)			
Top Sample:	18.4	3.0	+3.6
Bottom Sample:	18.0	3.1	+3.9
After Conditioning at 60 C for 7 days followed by 2 days at 20 °C			
Top Sample:	18.5	3.0	+3.5
Bottom Sample:	18.2	2.9	+3.9

Expansion and Drainage (Annex G)

	Using Fresh Water		Using Sea Water	
Before conditioning of the sample				
Expansion at 1%:	7.62		9.34	
25% Drainage Time:	4'00"		3'50"	
50% Drainage Time:	5'33"		6'25"	
After conditioning of the sample (Annex E)	Top	Bottom	Top	Bottom
Expansion at 1%:	7.8	7.6	8.25	8.30
25% Drainage Time:	4'00"	4'08"	3'18"	3'20"
50% Drainage Time:	5'30"	5'30"	5'41"	5'40"

Fire Tests (Annex H)

A) Application (Forceful) in accordance with EN 1568-3

Fire tests carried out in accordance with Annex H1 and H3 using Fresh Water and Sea Water

Preburn Time	60 seconds
Foam Application	180 seconds
Wait after foam application	300 seconds
Fire Tray	144B (4.54 m ²)
Fuel	Commercial Heptane on water bed

	Fresh Water	Sea Water	Fresh Water
90% Control	28"	29"	34"
99% Control	37"	38"	45"
100% Extinction	51"	45"	77"
25% Burnback Time	10'31"	13'23"	11'32"
Air Temp (°C)	16	16	16
Water Temp (°C)	16.5	16.5	16.5
Fuel Temp (°C)	17	17	17
Foam Temp(°C)	16.5	16.5	16.5
Wind Speed (m/sec)	< 3.0	< 3.0	< 3.0

B) Application in accordance with EN 1568-4 (Annex H)

Preburn Time 120 seconds
 Foam Application 180 seconds
 Wait after foam application 300 seconds
 Fire Tray 55B (1.73 m²)
 Fuel Acetone

	Fresh Water	Sea Water	Sea Water
90% Control	27"	15"	21"
99% Control	44"	40"	41"
100% Extinction	65"	70"	91"
25% Burnback Time	17'11"	13'35"	10'45"
Air Temp (°C)	15	17	17
Water Temp (°C)	16.5	16.0	16.5
Fuel Temp (°C)	17	17	17
Foam Temp(°C)	16.5	16.0	16.5
Wind Speed (m/sec)	< 3.0	< 3.0	< 3.0

From the above test results it is confirmed the FOMTEC ARC 1x1 (Newtonian) is a film forming foam concentrate suitable for use with fresh and sea water. FOMTEC ARC 1x1 (Newtonian) has tolerance to freezing and thawing (Annex E). The product is suitable for storage above -30. The fire extinguishing performance class is 1 and the burnback resistance level is A using fresh and sea water used at 1% concentration for Hydrocarbon fuel. The fire extinguishing performance class is 1 and the burnback resistance level is A using fresh water and B with sea water used at 1% concentration for Polar Solvent fuel.

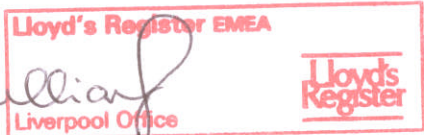
Performance level achieved:

Extinguishing Class 1 for Hydrocarbon and Polar Solvent Fuel

Burnback Resistance level is A for Hydrocarbon Fuel with fresh and sea water

Burnback Resistance level is A for Polar Solvent Fuel with fresh water and B for Polar Solvent Fuel with sea water

M. Williams
 M. Williams
 Surveyor to Lloyd's Register EMEA



A member of the Lloyd's Register Group