



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

Client: RKG

Office: Liverpool

Clients Order Number: -

Date: 20.05.02.

Order Status: Complete

Inspection Dates

First: 29.04.02.

Final: 17.05.02.

This certificate is issued to Dafo Fomtec AB, to certify that the undersigned Surveyor to this Society did select samples of FOMTEC ARC 3x3 F, 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 manufacturers 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 (24 hours at 60°C)	=	< 0.1%

Viscosity at 20°C	=	1000 mPa.s (Brookfield)
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pH of the concentrate at 20°C	=	7.0
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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	16.5	3.8	+4.7
After conditioning at - -30°C for 24 hrs followed by 48 hrs at 20°C (four cycles)			
Top Sample	16.2	3.5	+5.3
Bottom Sample	16.3	3.5	+5.2
After conditioning at - 60°C for 7 days followed by 2 days at 20°C			
Top Sample	16.4	3.5	+5.1
Bottom Sample	16.2	4.0	+4.8

Expansion and Drainage (Annex G)

Before conditioning of the sample	Fresh		Sea	
Expansion =	7.1		6.8	
25% Drainage time =	6'20"		6'25"	
After conditioning of the sample in accordance with Annex E	Fresh		Sea	
Expansion =	7.4	7.1	6.7	6.6
25% Drainage time =	5'06"	5'07"	5'12"	5'15"

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

Preburn time	60 seconds
Foam application	180 seconds
Wait after foam application	300 seconds
Fire tray	144B (4.5m ²)
Fuel	Commercial Heptane on water bed
Foam Concentration	3%

	Fresh Water		Sea Water
90% Control	49"	48"	48"
99% Control	70"	68"	64"
100% Extinction	110"	124"	97"
25% Burnback time	16'41"	12'29"	14'54"
Air Temp	11.0 °C	19.0 °C	14.0 °C
Water Temp	15.0 °C	15.0 °C	15.0 °C
Fuel Temp	15.0 °C	16.0 °C	15.0 °C
Foam Temp	15.0 °C	16.0 °C	15.0 °C
Wind Speed (m/sec.)	< 1.0	< 1.0	< 1.0

Fire Tests (Annex H) in accordance with EN 1568-4
 Fire Tests carried out in accordance with Annex H using:-

Fresh water and sea water

Preburn time	120 seconds
Foam application	180 seconds
Wait after foam application	300 seconds
Fire tray	55B (1.73m ²)
Fuel	Acetone
Foam Concentration	3%

	Fresh Water		Sea Water
90% Control	100"	58"	70"
99% Control	120"	76"	85"
100% Extinction	146"	101"	100"
25% Burnback time	7'03"	7'39"	7'42"
Air Temp	11.0 °C	14.0 °C	11.0 °C
Water Temp	15.0 °C	15.0 °C	15.0 °C
Fuel Temp	15.0 °C	16.0 °C	15.0 °C
Foam Temp	16.0 °C	15.0 °C	16.0 °C
Wind Speed (m/sec.)	< 1.0	< 1.0	< 1.0

From the above test results it is confirmed that FOMTEC ARC 3x3 F is a film forming foam concentrate suitable for use with fresh and sea water. FOMTEC ARC 3x3 F has tolerance to freezing and thawing (Annex E) and is suitable for storage above -30°C. The fire extinguishing performance class is 1 and the burnback resistance level is A using fresh and sea water for Hydrocarbon fuel. The fire extinguishing performance class is 1 and the burnback resistance level is C using fresh and sea water for Polar solvent fuel.

Performance level achieved:

Extinguishment class 1 for Hydrocarbon & Polar fuel

Burnback resistance level A for Hydrocarbon fuel and level C for Polar fuel.



The image shows a red rectangular stamp from Lloyd's Register EMEA Liverpool Office. It contains a handwritten signature in black ink that reads 'M. Williams'. To the right of the signature is the Lloyd's Register logo, which consists of the words 'Lloyd's Register' in a stylized font inside a red-bordered box.

M. Williams
 Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group