Lloyd's Register

Project:	Fire Extinguishing Media to EN 1568-3 Specifications	*Certificate Number:*	MCH 0032867/05A
Client:	Dafo Fomtec AB PO Box 683 135 26 Tyresö Sweden	*Office:*	Liverpool
Client's Order Number:		*Date:*	10 May 2001
		Order Status:	Complete
Inspection Dates *First:*	26.04.00	*Final:*	19.05.00

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 AFFF 3%F, for the purpose of confirming that the properties were within the technical specifications and were in accordance with EN 1568-3.

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.

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 = 4.2 c.st

pH of the concentrate at 20°C = 8.1

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

		Surface Tension Dynes/cm	Interfacial Tension Dynes/cm	Spreading Coefficient Dynes/cm
Before conditioning		17.0	2.1	+5.9
After conditioning at -				
-30°C for 24 hrs followed by 48hrs at 20°C				
(four cycles)	Top Sample	17.4	2.3	+5.3
	Bottom Sample	17.2	2.1	+5.7
After conditioning at -				
60°C for 7 days followed by 2 days at 20°C				
	Top Sample	17.3	2.1	+5.6
	Bottom Sample	17.2	2.0	+5.8

Expansion and Drainage (Annex G)

	Fresh	Sea
Before conditioning of the sample		
Expansion =	8.7	8.6
25% Drainage time =	3'22"	3'38"

	Fresh		Sea	
After conditioning of the sample in accordance with Annex E	Top	Bottom	Top	Bottom
Expansion =	8.5	8.8	8.5	8.7
25% Drainage time =	3'26"	3'30"	3.40"	3.44"

Fire Tests (Annex H)
A) Forceful Application in accordance with EN 1568-3

Fire tests carried out in accordance with Annex H1 and H2 using:-
Fresh water and Sea water

Preburn time	60 seconds
Foam application	180 seconds
Wait after foam application	300 seconds
Fire tray	144B (4.5m²)
Fuel	Commercial Heptane on water bed

	Fresh Water		Sea Water
90% Control	37"	39"	37"
99% Control	56"	58"	55"
100% Extinction	138"	158"	123"
25% Burnback time	N/A	N/A	N/A

Air Temp	20.5	12.5	11.0
Water Temp	16.5	15.0	15.0
Fuel Temp	17.2	15.5	15.5
Foam Temp	16.8	15.0	18.5
Wind Speed (m/sec.)	Nil	Nil	Nil

B) Gentle 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	300 seconds
Wait after foam application	300 seconds
Fire tray	144B (4.52m²)
Fuel	Commercial Heptane on water bed

	Fresh Water	Sea Water	
90% Control	38″	38″	35″
99% Control	73″	65″	62″
100% Extinction	161″	Flicker	200″
25% Burnback time	17′4″	10′59″	14′ 35″
Air Temp (°C)	15.4	14.3	12.5
Water Temp (°C)	15.5	15.5	15.5
Fuel Temp (°C)	15.5	15.5	16.0
Foam Temp (°C)	17.0	18.0	18.0
Wind Speed (m/sec.)	<1.0	<2.0	<0.5

From the above test results it is confirmed that FOMTEC AFFF 3%F is a film forming foam concentrate suitable for use at 6% concentration with fresh and sea water. FOMTEC AFFF 3%F has tolerance to freezing and thawing (Annex E). The product 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.

Performance level achieved:
Extinguishment class 1 with fresh and sea water
Burnback resistance level A with fresh and sea water

for .....
M. Firth
Senior Surveyor