



Project: Fire Extinguishing Media to EN 1558-1 Specification  
for Medium Expansion Foam Concentrates for Surface  
Application to Water in Miscible Liquids

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 MB5, for the purpose of confirming that the properties were within the technical specifications and were in accordance with EN 1568-1.

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 1568-1

**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%

<b>Viscosity at 20 C</b>	=	3.0 m.Pa.s (Brookfield)
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<b>pH of the concentrate at 20 C</b>	=	7.1
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Form 1123Local (2005.02)

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

	Surface Tension Dynes/cm	Interfacial Tension Dynes/cm	Spreading Coefficient Dynes/cm
Before conditioning:	28.0	N/A	N/A
After Conditioning at -30 C for 24 hours followed by 48 hours at 20 C (four cycles)			
Top Sample:	27.6	N/A	N/A
Bottom Sample:	27.2	N/A	N/A
After Conditioning at 60 C for 7 days followed by 2 days at 20 °C			
Top Sample:	28.1	N/A	N/A
Bottom Sample:	27.2	N/A	N/A

**Expansion and Drainage (Annex G)**

	Using Fresh Water	
Before conditioning of the sample		
Medium Expansion at 3%:	89.5	
25% Drainage Time:	3'40"	
50% Drainage Time:	6'23"	
After conditioning of the sample (Annex E)	Top	Bottom
Medium Expansion at 3%:	83.0	84.5
25% Drainage Time:	4'00"	4'02"
50% Drainage Time:	7'34"	7'30"

**Fire Tests (Annex H)**

Foam Application in accordance with EN 1568-1  
Fire tests carried out in accordance with Annex H1 and H2 using Fresh Water

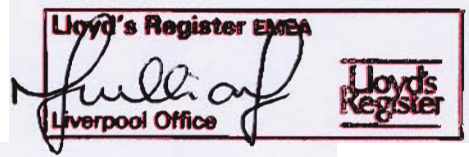
Preburn Time            60 seconds  
Foam Application        120 seconds  
Fire Tray                55B (1.73m<sup>2</sup>)  
Fuel                        Commercial Heptane on water bed

90% Control	15"	15"
99% Control	30"	31"
100% Extinction	68"	77"
1% Burnback Time	140"	106"
25% Burnback Time	151"	133"

Air Temp (°C)	15	15
Water Temp (°C)	16	16
Fuel Temp (°C)	16	16
Foam Temp(°C)	16	16
Wind Speed (m/sec)	2.0	2.0

From the above test results it is confirmed the FOMTEC MB5 is suitable for use at 3% concentration with use on hydrocarbon fuel with fresh water. FOMTEC MB5 has tolerance to freezing and thawing (Annex E). The product is suitable for storage above -30.

Performance achieved:  
Meets the requirements of EN 1568-1



M. Williams  
Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group

Project: Fire Extinguishing Media to EN 1568-3  
Specification

Client: Dafo Fomtec AB

Office: Liverpool

Clients Order Number:

Date: 17 April 2003

Order Status: Complete

Inspection Dates

First: 10 April 2003

Final: 17 April 2003

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 MB5, manufactured for the purpose on confirming that the properties were within the technical specifications and were in accordance with EN1568-3

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 EN1568-3.

#### 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	=	2.0 cSt
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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	+27.8	N / A	N / A
After Conditioning - -30°C for 24 hrs followed by 48 hrs at 20°C (four cycles)			
Top Sample	+27.0	N / A	N / A
Bottom Sample	+27.7	N / A	N / A
After conditioning - 60°C for 7 days followed by 2 days at 20°C			
Top Sample	+27.8	N / A	N / A
Bottom Sample	+28.0	N / A	N / A

**Expansion and Drainage (Annex G)**

	Fresh		Sea	
Before conditioning of the sample				
Expansion =	10.0		8.0	
25% Drainage time =	7'02"		3'02"	
After conditioning of the sample				
In accordance with Annex E				
Expansion =	Top 9.7	Bottom 10.0	Top 7.8	Bottom 8.2
25% Drainage time =	6'49"	7'11"	2'52"	3'08"

**Fire Tests (Annex H)**

**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 (4.52 m<sup>2</sup>)

Fuel

Commercial Heptane on water bed

	Fresh Water	Sea Water	
90% Control	35"	46"	40"
99% Control	55"	80"	70"
100% Extinction	138"	217"	200"
25% Burnback time	16'05"	11'21"	10'15"
Air Temp (°C)	10.5	10.0	9.0
Water Temp (°C)	13.6	13.5	13.0
Fuel Temp (°C)	13.6	14.5	14.0
Foam Temp (°C)	14.0	14.0	14.0
Wind Speed (m/sec)	<0.5	<0.5	<0.5

From the above test results it has been confirmed that FOMTEC MB5 is a foam concentrate suitable for use at 6% concentration with fresh and sea water. FOMTEC MB5 has tolerance to freezing and thawing (Annex E). The product is suitable for storage above -30°C. The fire extinguishing performance class is 3 with fresh and sea water and the burnback resistance level is B using fresh water and C using sea water.

Performance level achieved:

Extinguishment class 3 with fresh and sea water

Burnback resistance level B with fresh water and level C with sea water.



M. Williams

Surveyor to Lloyd's Register EMEA

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