REPORT

issued by an Accredited Testing Laboratory

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Date 2011-11-01 | Reference PX13995-2 | Page 1 (1)

1002 ISO/IEC 17025

Dafo Fomtec AB
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Test of foam concentrate according to ISO 7203-2:2011

(1 appendix)

The department of Fire Technology at SP Swedish National Testing and Research Institute has on your request performed tests of foam concentrate according to ISO 7203-2:2011.

Designation of foam concentrate:	Fomtec LS EXP
Type of foam concentrate:	Synthetic High Expansion Foam
Samples:	8 x 25 L cans, batch No 113511
Manufactured by:	Dafo Fomtec AB
Date of arrival at SP:	September 8, 2011
Date of fire tests:	October 4, 2011

Total results

The foam concentrate denoted Fomtec LS EXP fulfil the technical requirements stated ISO 7203-2:2011 when tested with 2,4 % admixture as high expansion foam on petroleum fire.

SP Technical Research Institute of Sweden
Fire Technology - Fire Dynamics

Performed by

Magnus Bobert

Examined by

Tommy Hertzberg

Appendix

Test results

Appendix 1

Test results

Numbering according to corresponding clause in the standard.

4 Classification and uses of foam concentrates

According to the supplier the foam concentrate is intended for use with fresh and sea water for high expansion foam with an admixture ratio of 2,4 %.

Lowest temperature for use (LUT): ±5 °C

5 Tolerance of foam concentrate to freezing and thawing

According to the manufacturer the foam concentrate is not freeze protected. The foam concentrate was conditioned for 7 days at (60±2) °C without prior freezing and thawing.

6-10 Chemical-physical examination

Parameter	Clause in the standard	Before temperature conditioning	After temperature conditioning
Sedimentation, vol%	6.1-6.2	< 0,1*	--
Dispersible through 180-µm-sieve	6.1-6.2	Yes*	--
Viscosity, +20 °C, cSt	--	31,0	--
Viscosity, 5 °C (LUT), cSt	7.1	60,2	--
pH-value, +20 °C	8	6,8	6,6
Surface tension, 2,4 % admixture (Ts), mN/m	9	24,2	24,2
Interfacial tension, 2,4 % admixture (Ts), mN/m	10	4,2	4,3
Refractive index, + 20 °C	--	1,367	--

* Before and after ageing for 24 h at 60 °C.

-- Not included in the standard.

12.2 Expansion and drainage of foam (annex G)

For foam generation the following types of water were used:

Fresh water; tap water taken from the municipal waterworks of Borås.

Sea water has been prepared by tap water and additives as specified in the standard.

Test conditions: Ambient temperature: 18 °C-21°C

Premix temperature: 18 °C-20°C

High expansion foam (annex G)

	Fresh water before conditioning	Fresh water after conditioning	Sea water before conditioning	Sea water after conditioning
Expansion ratio	1015	964	921	855
Drainage 25 %, min:s	15:07	17:44	13:48	11:54
Drainage 50 %, min:s	26:56	30:53	23:18	21:16

Comments to the chemical- physical examination and the expansion and drainage tests

The pH value before and after conditioning is not less than 6,0 and not more than 8,5.

The pH value after conditioning is within ±1 pH unit of the value obtained before conditioning.

The surface tension and interfacial tension after conditioning is within 5% of the value obtained before conditioning.

The requirements for the chemical- physical properties are fulfilled in accordance with the standard.

The expansion ratio before and after conditioning is not less than 201.

The requirements for the expansion and drainage of foam are fulfilled in accordance to the standard.

The foam concentrate is not temperature sensitive.

13 Test fire performance ISO 7203-2:2011 (annex I)

All fire tests were conducted indoors in the fire hall of SP.

Designation	**Unit**	**Test No 1**	**Test No 2**
Type of foam, expansion grade		High	High
Date of test	y-m-d	2011-10-04	2011-10-04
Admixture	%	2,4	2,4
Type of water		Fresh water	Sea water
Foam generator	L min^{-1}	6.1	6.1
Air temp.	°C	20	18
Fuel temp.	°C	18	18
Water temp.	°C	19	18
Foam solution temp.	°C	18	20
Wind speed	m/s	< 1	< 1
Extinction			
Type of fuel		Heptane	Heptane
Preburn time	min	1	1
Start foam application	min:s	00:00	00:00
90 % control	min:s	01:25	00:42
99 % extinguished	min:s	01:54	00:52
Extinguished	min:s	01:58	00:56
Stop fan and foam application	min:s	02:00	02:00

Comments to the fire tests

The requirements for the test fire performance are fulfilled in accordance to the standard.

14.1 Marking

Marking of the containers shall be made according to clause 14.1 in the standard in order to fulfil the requirements.