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# Fire extinguishing media - Foam concentrates - Part 1: Specification for medium expansion foam concentrates for surface application to water-immiscible liquids

EESTI STANDARDIKESKUS
ESTONIAN CENTRE FOR STANDARDISATION

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EUROPEAN STANDARD

NORME EUROPÉENNE

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# Fire extinguishing media - Foam concentrates - Part 1: Specification for medium expansion foam concentrates for surface application to water-immiscible liquids

Agents extincteurs - Emulseurs - Partie 1: Spécifications pour les émulseurs moyen foisonnement destinés à une application à la surface de liquides n'ayant pas d'affinité pour l'eau

Feuerlöschmittel - Schaummittel - Teil 1: Anforderungen an Schaummittel zur Erzeugung von Mittelschaum zum Aufgeben auf nicht-polare (mit Wasser nicht mischbare) Flüssigkeiten

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# Foreword

This document (EN 1568-1:2008) has been prepared by Technical Committee CEN/TC 191 “Fixed firefighting systems”, the secretariat of which is held by BSI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes EN 1568-1:2000.

This European Standard is one of a series specifying requirements for fire extinguishing media in common use. This series includes the following:

EN 25923, Fire protection — Fire extinguishing media — Carbon dioxide (ISO 5923:1989)

EN 27201-1, Fire protection — Fire extinguishing media — Halogenated hydrocarbons — Part 1: Specifications for halon 1211 and halon 1301 (ISO 7201-1:1989)

EN 27201-2, Fire protection — Fire extinguishing media - Halogenated hydrocarbons — Part 2: Code of practice for safe handling and transfer procedures (ISO 7201-2:1991)

EN 615, Fire protection — Fire extinguishing media — Specification for powders (other than Class D powders)

This standard is Part 1 of EN 1568 which has the general title "*Fire extinguishing media - Foam concentrates*". The other parts are:

— Part 2: Specification for high expansion foam concentrates for surface application to water-immiscible liquids.

— Part 3: Specification for low expansion foam concentrates for surface application to water-immiscible liquids

— Part 4: Specification for low expansion foam concentrates for surface application to water-miscible liquids.

As fire fighting foams are chemical agents or chemical preparations EC directives 1967/548/EEC, 1999/45/EEC, Regulation (EC) 1907/2006 (REACH) and 2006/60/EEC apply and should be taken into account.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

# Introduction

Classes of fire are defined in EN 2 as follows:

— Class A: fires involving solid materials, usually of an organic nature, in which combustion normally takes place with the formation of glowing embers;

— Class B: fires involving liquids or liquefiable solids;

— Class C: fires involving gases;

— Class D: fires involving metals;

— Class F: fires involving cooking media (vegetable or animal oils and fats) in cooking appliances.

Fire fighting foams are widely used to control and extinguish Class B fires and to inhibit re-ignition. These foams can also be used for prevention of ignition of flammable liquids and, in certain conditions, to extinguish Class A fires.

Foams can be used in combination with other extinguishing media, particularly gaseous media and powders, which are the subject of other European Standards (see Foreword).

These specifications have been designed to ensure that fire extinguishing media have the minimum useful fire fighting capability. The user should ensure that the foam concentrates are used accurately at the concentration recommended by the manufacturer. Fire performances indicated by this standard cannot replicate practical fire situations.

Foam concentrates of different types and manufacturers should not be mixed.

It should be noted that some combinations of extinguishing powder and foam can lead to unacceptable loss of efficiency, caused by unfavourable interaction of the chosen media when applied simultaneously or successively to the fire.

It is extremely important that the foam concentrate after dilution with water to the recommended concentration should not in normal usage present a significant toxic hazard to life in relation to the environment. The current versions of EC directives 67/548/EEC, 2006/60/EEC, 1999/45/EEC and Regulation (EC) 1907/2006 apply when considering the testing of ecotoxicological properties and safety in the work environment.

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# 1 Scope

This document specifies requirements for chemical and physical properties, and minimum performance requirements of medium expansion foams suitable for surface application to water-immiscible liquids. Requirements are also given for marking.

NOTE Some concentrates conforming to this part of EN 1568 can also conform to other parts and therefore can also be suitable for application as low and/or high expansion foams.

# 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN ISO 3104, *Petroleum products — Transparent and opaque liquids — Determination of kinematic viscosity and calculation of dynamic viscosity (ISO 3104:1994)*

EN ISO 3219, *Plastics - Polymers/resins in the liquid state or as emulsions or dispersions - Determination of viscosity using a rotational viscometer with defined shear rate (ISO 3219:1993)*

EN ISO 3696, *Water for analytical laboratory use - Specification and test methods (ISO 3696:1987)*

ISO 304, *Surface active agents — Determination of surface tension by drawing up liquid films*

ISO 3310-1, *Test sieves — Technical requirements and testing — Part 1: Test sieves of metal wire cloth*

# 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

**3.1**
**25 %/50 % drainage time**
time taken for 25 %/50 % of the volume of the original foam solution to drain out of the generated foam

**3.2**
**expansion**
**expansion value**
**expansion ratio**
ratio of the volume of foam to the volume of the foam solution from which it was made

**3.3**
**low expansion foam**
foam which has an expansion ratio less than 20

**3.4**
**medium expansion foam**
foam which has an expansion ratio greater than or equal to 20 but less than 200

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