

**TULEKUSTUTUSAINED. VAHUAINED. OSA 4:
MADALKORDSED VAHUAINED VEEGA SEGUNEVATE
PÕLEVVEDELIKE KUSTUTAMISEKS**

**Fire extinguishing media - Foam concentrates - Part 4:
Specification for low expansion foam concentrates for
surface application to water-miscible liquids**

EESTI STANDARDI EESSÕNA**NATIONAL FOREWORD**

See Eesti standard EVS-EN 1568-4:2008 sisaldab Euroopa standardi EN 1568-4:2008 ingliskeelset teksti.	This Estonian standard EVS-EN 1568-4:2008 consists of the English text of the European standard EN 1568-4:2008.
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English Version

**Fire extinguishing media - Foam concentrates - Part 4:
Specification for low expansion foam concentrates for surface
application to water-miscible liquids**

Agents extincteurs - Emulseurs - Partie 4: Spécifications
pour les émulseurs bas foisonnement destinés à une
application à la surface des liquides ayant une affinité pour
l'eau

Feuerlöschmittel - Schaummittel - Teil 4: Anforderungen an
Schaummittel zur Erzeugung von Schwertschaum zum
Aufgeben auf polare (mit Wasser mischbare) Flüssigkeiten

This European Standard was approved by CEN on 5 January 2008.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN Management Centre has the same status as the official versions.

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Foreword

This document (EN 1568-4:2008) 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of an identical text or by endorsement, at the latest by September 2008, and conflicting national standards shall be withdrawn at the latest by September 2008.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 1568-4:2000.

This European Standard is one of the 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 4 of EN 1568 which has the general title "Fire extinguishing media — Foam concentrates". The other parts are:

- Part 1 — Specification for medium expansion foam concentrates for surface application to water-immiscible liquids.
- 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.

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 manufacture 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 version 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.

1 Scope

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

IMPORTANT — In this part of the document, the fire performance is tested using acetone and isopropanol as the fuel, which also forms the basis for the performance classification. However, there are a large number of water-miscible liquids, which have more or less different properties to acetone and isopropanol. It has been shown by tests using other fuels that the performance of various foams can differ considerably. Examples of such fuel is Methyl Ethyl Ketone (MEK). It is therefore essential that the user checks for any unfavourable or unacceptable loss of efficiency when the foam is used against fires in any other water-miscible fuels than acetone and isopropanol respectively. The fire test conditions and procedure given in J.2 can be used in order to achieve results comparative with acetone and isopropanol respectively and related requirements.

It is also essential for the user to note, that other fuel depths and methods of application than those specified in I.2, can cause considerable loss of efficiency and these matters should be carefully considered by the user when assessing the suitability for particular applications.

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 medium 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