SLOVENSKI STANDARD
SIST EN 615:1997

01-december-1997

Požarna zaščita - Gasila - Specifikacije za praške (razen za praške razreda D)

Fire protection - Fire extinguishing media - Specification for powders (other than class D powders)

Brandschutz - Löschmittel - Anforderungen an Löschpulver (nicht für Löschpulver der Brandklasse D)

Protection contre l'incendie - Agents extincteurs - Prescriptions pour les poudres (autres que les poudres pour classe D)

Ta slovenski standard je istoveten z: EN 615:1994

ICS:

13.220.20 Požarna zaščita Fire protection

SIST EN 615:1997 **en**

EUROPEAN STANDARD **EN 615**

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Descriptors: Fire fighting, fire protection, extinguishing agents, powdery materials, specifications, physical properties, density (mass volume), grain size analysis, chemical properties, chemical composition, fire tests, marking, packing

English version

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This European Standard was approved by CEN on 1994-12-05. 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 Central Secretariat or to any CEN member.

The European Standards exist 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 Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Contents

Foreword

This European Standard has been prepared by the 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of an identical text or by endorsement, at the latest by June 1995, and conflicting national standards shall be withdrawn at the latest by June 1995.

This European Standard is one of a series giving specifications for fire extinguishing media in common use and which are in need of specification for firefighting purposes. The other standards, published or in preparation, are

EN 25 923	**Fire protection - Fire extinguishing media - Carbon dioxide**
EN 27 201	**Fire protection - Fire extinguishing media - Halogenated hydrocarbons** **Part 1 Specifications for halon 1211 and halon 1301** **Part 2 Code of practice for safe handling and transfer procedures**
prEN 1568	**Fire extinguishing media - Foam concentrates** **Part 1 Medium expansion foam** **Part 2 High expansion foam** **Part 3 Low expansion foam for surface application to water-immiscible liquids** **Part 4 Low expansion foam for surface application to water-miscible liquids**

The specifications are designed to establish that the medium in question has at least a minimum useful fire extinguishing capability and can therefore be reasonably used for fire extinguishing purposes.

Annexes A, B, C, D and E are normative.

Annexes F, H, J, K and L provide important information on, and give recommendations relating to the use and testing of extinguishing powders and are informative.

<u>Product certification.</u> Users of this European Standard are advised to consider the desirability of independent certification of product conformity with this European Standard based on testing and continuing surveillance, which may be coupled with assessment of a supplier's quality system against EN 29001, En 29002, and/or EN 29003 as appropriate.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

1 Scope

This European Standard is applicable to fire extinguishig powders for fire classes A, B and C. It specifies, by means of defined test methods, minimum requirements for the chemical and physical properties and minimum extinguishing capabilities. Requirements are also specified for the information and data to be given by the supplier.

This European Standard is not applicable to powders for class D fires.

NOTE 1: The classification of fires is given in EN 2.

NOTE 2: Some countries have national standards for class D powders

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 2	1992	Classification of fires
EN 3-1	1993	Portable fire extinguishers Part 1 : Description, Duration of operation; Test fires for classes A and B
EN 3-4	1993	Portable fire extinguishers Part 4 : Charges – Minimum fire performances
ISO 3310-1	1990	Test sieves - Technical requirements and testing - Part 1 : Test sieves of metal wire cloth
ISO 4788	1980	Laboratory glassware - Graduated measuring cylinders

3 Definitions

For the purposes of this European Standard, the following definitions apply.

3.1 (extinguishing) powder: Extinguishing medium composed of finely divided solid chemical products consisting of one or more principal components, which are combined with additives to improve its characteristics.

NOTE 1: In North America and some other countries, the term "dry powder" is used to denote special metal fire extinguishing agents and the term "dry chemical extinguishing agent" is used to denote the extinguishing medium specified in this European Standard.

NOTE 2: When it is useful to indicate the class of fire for which a powder is designed, capital letters may be added before the term. The letters used in this European Standard are those defined in EN 2.

Example: BC powder is designed to extinguish class B (liquids or liquefiable solids) and class C (gases) fires; ABC powder is designed to extinguish class A (solids which form glowing embers), class B and class C fires.

3.2 batch: Single charge of powder in the processing equipment that has been made homogeneous by subjection to the same unit and physical processing.

3.3 lot: One or more batches, but not more than 25 t of powder, manufactured to the same formulation by the same manufacturing process and under the same environmental conditions.

NOTE: Any substantial change in manufacturing process, source of raw materials, or change in environmental conditions may justify identifying the material as a different lot.

3.4 characteristic values: Values declared by the supplier for the chemical and physical properties for the powder.

3.5 supplier: Party, e.g. manufacturer, distributor, importer, responsible for the powder and able to ensure that quality assurance is exercised.

4 Sampling

4.1 Samples for testing shall be taken using a method which will provide a representative sample. In order to avoid any risk of condensation, it is essential that the temperature of the powder in its original container is not lower than the ambient air temperature when the sample is being taken.

4.2 Samples shall be stored in individual, clean, dry, airtight, non-reactive and suitably identified containers.

4.3 Sample containers should not be opened until temperature equilibrium with the laboratory has been reached.

NOTE 1: One suitable method of sampling is suggested in annex F.

NOTE 2: Unless otherwise specified, all tests on samples are carried out at (20 ± 5) °C.

5 Bulk density

The bulk density shall be within ± 0,07 g/ml of the characteristic value when tested in accordance with annex A.

6 Sieve analysis

The cumulative percentages oversize on the 40 µm sieve and on the 63 µm sieve shall not differ from the characteristic values by more than ± 8 % of the total mass of the sample, and the cumulative percentage oversize on the 125 µm sieve shall not differ from the characteristic value by more than ± 5 % of the total mass of the sample when the powder is tested in accordance with one of the methods of annex B.

NOTE: Annex G describes one of the methods of analysis technique which gives more detailed information on particle size.

7 Chemical content

Characteristic values for chemical content shall be expressed as percentages (*m/m*) of the total content.

The characteristic values for chemical content shall include all constituents present in the powder at a concentration representing 10 % or more of the total content. The sum of the characteristic values for chemical content shall be 90 % or more of the total content.

Each constituent given a characteristic value shall be identified by its chemical name, or as the reaction product of a chemical process between reactants identified by their chemical names. In the latter case the chemical process shall be specified, for example by reference to a published patent.

The content of a declared constituent shall be as follows;

- within ± 1,0 % of the total chemical content for constituents of characteristic value more than 10 % but not more than 15 %;
- within ± 1,5 % of the total chemical content for constituents of characteristic value more than 15 % but not more than 25 %;
- within ± 2,0 % of the total chemical content for constituents of characteristic value more than 25 % but not more than 65 %;
- within ± 3,0 % of the total chemical content for constituents of characteristic value more than 65 % and above.

NOTE 1: For example, a constituent with a characteristic value of 20 % has tolerance limits of 18, 5 % and 21,5 % and a constituent with a characteristic value of 80 % has tolerance limits of 77 % and 83 %.

NOTE 2: WARNING
It is important that under normal conditions of use the various materials and additives used to produce powders be generally recognized as being non-toxic to humans. In some countries there may be a legal obligation to disclose to designated authorities the complete chemical content, and any proposed changes of chemical content, with documented details of non-toxicity.

NOTE 3: The compatibility of the powder with foam (see annex H) depends on chemical content.

8 Fire test performance

8.1 General

A 6 kg or 9 kg stored pressure or cartridge extinguisher may be used to test conformity to this clause, but the same model of extinguisher shall be used for class A rating (if applicable), class B rating and to test conformity with clause 9.

NOTE: 8.2 and 8.3 specify minimum performance requirements. Annex J gives information on the importance of other performance testing.

8.2 Class A powders

A powder claimed by the supplier to be suitable for class A fires when tested using either a 6 kg or 9 kg extinguisher recommended by the powder supplier, shall conform to the fire performance requirements of EN 3-4.

8.3 Class B powders

A powder claimed by the supplier to be suitable for class B fires when tested using either a 6 kg or 9 kg extinguisher recommended by the powder supplier, shall conform to the fire performance requirements of EN 3-4.

8.4 Class C powders

A powder claimed by the supplier to be suitable for class C fires shall conform to 8.3.

9 Residual mass after discharge

When tested in the 6 kg or 9 kg extinguisher model recommended by the powder supplier and used to test conformity to clause 8, the residual mass of powder shall conform to the requirements of EN 3-1.

NOTE: Annex K describes a technique for conducting discharge performance tests which give more detailed information than that necessary to establish conformity to EN 3-1.

10 Resistance to caking and lumping

Any lumps formed shall not be retained on the 425 µm sieve when the powder is tested in accordance with annex C.

11 Water repellency

There shall be no absorption of the water droplets when the powder is tested in accordance with annex D.

12 Moisture content

The moisture content shall not exceed 0,25 % (*m*/*m*) when determined in accordance with annex E.