SLOVENSKI STANDARD
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Prenosni aerosolni razpršilnik za gašenje požarov

Portable aerosol dispenser for fire extinguishing purposes

Löschspraydose

Générateur d'aérosol portatif pour l'extinction d'un incendie

Ta slovenski standard je istoveten z: **prEN 16856**

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Portable aerosol dispenser for fire extinguishing purposes

Générateur aérosol à fonction extinctrice

Löschspraydose

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COMITÉ EUROPÉEN DE NORMALISATION
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Foreword

This document (prEN 16856:2015) has been prepared by Technical Committee CEN/TC 70 “Manual means of fire fighting equipment”, the secretariat of which is held by AFNOR.

This document is currently submitted to the CEN Enquiry.

It specifies the requirements for non-refillable portable aerosol dispensers for fire extinguishing purposes.

This draft standard has been written with the aim of producing a specification for relatively inexpensive small disposable, aerosol dispensers for fire extinguishing purposes with an acceptable minimum level of performance. This type of product is intended for use only in situations where fires of limited proportions are anticipated because of the nature of some process or activity, where the possibility of fire spreading to other materials is remote, or where people are present at the likely times of risk. The standard therefore is unlikely to meet the requirements of the various specifying authorities for more comprehensive protection. These products are not intended to supplant extinguishers that comply with EN 3 (all parts), which should still be regarded as the principal type to meet the needs of various authorities.

Special attention is drawn to Directive 75/324/EEC of 20 May 1975, on the approximation of the laws of the member states relating to Aerosol Dispensers, Directive 2008/47/EC and Commission Directive 94/1/EC of 6 January 1994 adapting some technicalities of Council Directive 75/324/EEC on the approximation of the laws of the Member States relating to aerosol dispensers.

1 Scope

This draft European Standard specifies the characteristics, performance and test methods for extinguishing aerosol dispensers, in accordance with Directive 75/324/EEC for fire extinguishing purposes. Requirements in this draft Standard are specified for products containing less than 1 kg or 1 l of extinguishing media, which can be expelled by the action of internal pressure and are intended to extinguish test fires of type A + B, or type A + F, or type A + B + F classes of EN 2. These extinguishing aerosol dispensers are intended to be used by untrained persons for domestic applications. They are not intended to be used on gas fires (class C) and metal fires (class D).

Requirements are specified for minimum performance in Annex H for extinguishing test fires of type A, type B and type F classes of EN 2, as appropriate.

Annex A gives the conditioning treatment to be applied to extinguishing aerosol dispensers prior to testing as described in Annex B to Annex K.

2 Normative references

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

EN 615, *Fire protection — Fire extinguishing media — Specifications for powders (other than class D powders)*

EN ISO 9227, *Corrosion tests in artificial atmospheres — Salt spray tests (ISO 9227)*

ISO 657-14, *Hot-rolled steel sections — Part 14: Hot-finished structural hollow sections — Dimensions and sectional properties*

ISO 4470, *Sawn timber — Determination of the average moisture content of a lot*

3 Terms and definitions

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

3.1
aerosol dispenser for fire extinguishing purposes
non-refillable metallic container intended for a single use, which holds a compressed gas and liquid, paste or powder extinguishing media, equipped with a valve allowing a controlled discharge of the contents

Note 1 to entry: Extinguishing aerosol dispensers are designed to be discarded after any use and are bound not to be refilled.

3.2
batch
definite quantity of products or components produced at one time under conditions that are presumed uniform

Note 1 to entry: The circumstances under which the conditions can be presumed cannot be generally stated; for example, a change in the material or tool used in an interruption in the manufacturing process can give rise to different conditions, see ISO 3534-2.

3.3
body
seamless metallic container of the extinguishing aerosol dispenser not fitted with its accessories, such as valves, having a maximum total capacity of 1 000 ml

3.4
valve
self-closing release device allowing the discharge of the extinguishing media to be discontinuous

3.5
charge of an extinguishing aerosol dispenser
mass or volume of the extinguishing medium contained in the extinguishing aerosol dispenser

3.6
maximum pressure at maximum operating temperature $P_{T_{max}}$
pressure within the extinguishing aerosol dispenser when filled with the quantity of solid, liquid and gaseous content to the maximum upper tolerance specified under production conditions, at a temperature of 50 °C

3.7
burst pressure
maximum pressure achieved during a burst test

3.8
test pressure
pressure, when applied, shows no visible permanent deformation

3.9
working pressure
pressure declared by the manufacturer as the pressure within the extinguishing aerosol dispenser, when filled with quantities of solid, liquid and gaseous content at 20 °C

3.10
extinguishing medium
substance including any additive, such as corrosion inhibitor, freezing point depressant or blowing agent, contained in the extinguishing aerosol dispenser that causes extinction of a fire

3.11
protective cap
cover over the valve of the extinguishing aerosol dispenser

3.12
propellant
compressed gas held in the container, which allows the required pressure for the discharge of the extinguishing medium

3.13
fire rating
designation of the largest test fire that has been extinguished when tested in accordance with 7.6.2, 7.6.3 and 7.6.4

3.14
domestic
premises occupied as a private dwelling, including any garden, yard, garage, outhouse, or appurtenance of such premises, which is not used in common by the occupants of more than one such dwelling

3.15
safety device
part that needs to be broken or removed before the extinguishing aerosol dispenser, and be activated

3.16
security seal
part that is broken when removing the safety device and once broken cannot be replaced

3.17
minimum operating temperature
T_{min}
minimum temperature declared by the manufacturer at which the extinguishing aerosol dispenser will operate

4 Contents of the extinguishing aerosol dispenser

4.1 Extinguishing medium

The extinguishing medium shall be one of the following:

— water based, including additives conforming to the physical characteristics declared by the manufacturer;

— powder conforming to EN 615.

4.2 Propellant

Only propellants listed in Table 1 or mixtures thereof shall be used. The maximum water content shall be as specified in Table 1, except when used in a water-based extinguishing aerosol dispenser. Tracers may be added to the propellant to facilitate leakage detection, but the content shall not exceed a mass fraction of 10 % of the propellant content.

Table 1 — Permitted propellants

Propellant	Maximum water content mass fraction, %
Air	0,006
Argon	0,006
Helium	0,006
Nitrogen	0,006

5 Construction, design and prototype testing

5.1 Operation

5.1.1 The extinguishing aerosol dispenser shall be operated by activating the valve. The method of activation shall be readily apparent. It shall not be necessary for any movement of the actuating mechanism to be repeated in order to initiate discharge.

5.1.2 The construction of the extinguishing aerosol dispenser shall ensure no parts can be removed, excluding items in 5.1.5 and 5.1.6.

5.1.3 The design of the extinguishing aerosol dispenser shall allow rapid identification of whether or not it has been used.

5.1.4 The extinguishing aerosol dispenser shall operate without inversion.

5.1.5 The extinguishing aerosol dispenser shall incorporate a safety device to prevent inadvertent operation, which shall be so constructed that any unaided manual attempt to initiate discharge will not deform or break any part in a way that would prevent the subsequent discharge of the extinguishing aerosol dispenser.

5.1.6 The extinguishing aerosol dispenser shall have a security seal, which shall be broken by the removal of the safety device. The force required to remove the safety device and break the security seal shall be between 20 and 100 N, see Annex F. This security seal shall be such that it will not be broken or damaged in normal service and cannot be replaced after operation.

5.1.7 The extinguishing aerosol dispenser shall incorporate a valve to enable the discharge to be interrupted. The force required to actuate the device shall not exceed 75 N, see Annex F.

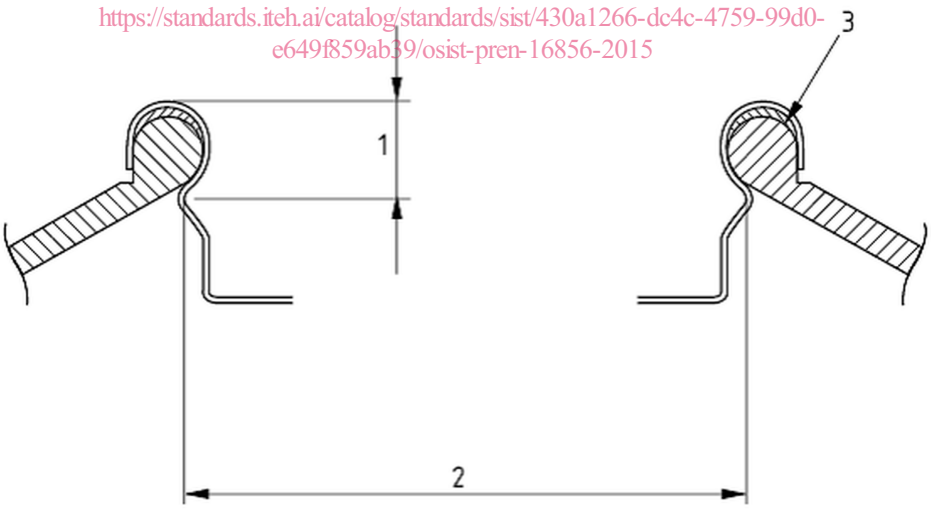
5.2 Body and closure

5.2.1 Body

The body shall be a metallic seamless container and shall have a maximum total capacity of 1000 ml.

5.2.2 Closure

The closure shall be crimped under the neck ring of the body. The crimping diameter and the crimping depth shall be determined by the manufacturer, see Figure 1.



Key

1 crimp depth

2 crimp diameter

3 neck ring

Figure 1 — Crimp diameter and depth

5.3 Corrosion resistance

5.3.1 External corrosion

After testing in accordance with B.1, the extinguishing aerosol dispenser shall show no signs of progressive corrosion or other chemical degradation, no pressure shall be released and shall operate as intended. The discharge time shall be equal to or greater than the manufacturer's specified minimum.

5.3.2 Internal corrosion

After storage in accordance with B.2, the extinguishing aerosol dispenser shall operate as intended. The discharge time shall be equal to or greater than the manufacturer's specified minimum. After being discharged, the extinguishing aerosol dispenser shall be checked internally for corrosion. There shall be no signs of progressive corrosion, however uniform oxidation may occur.

5.3.3 Chemical and pressure stability

The contents shall not generate pressure by reacting with the body or any lining. The complete assembly shall be chemically stable. Small increases are permitted, but the total pressure may increase by a maximum of 10 % of the working pressure during the test, but shall be stable by the end of the test. It shall be tested in accordance with Annex K.

5.4 Impact resistance

The extinguishing aerosol dispenser (with protective cap if used) correctly charged and equipped with all the fittings that are subject to internal pressure in normal operation, may leak but the body shall not rupture, when tested in accordance with Annex C. To ensure any leak does not affect the performance of the extinguishing aerosol dispenser, it shall operate as intended and be tested within 5 min of being subjected to the tests in Annex C. The discharge time shall be + 15 % of the actual time measured in 7.2 and the minimum discharge shall be in accordance with 7.3.

5.5 Resistance to shock and mechanical damage

The extinguishing aerosol dispenser shall show no detectable leakage resulting in loss of pressure when tested in accordance with Annex D. The extinguishing aerosol dispenser shall operate as intended. The discharge time shall be + 15 % of the actual time measured in 7.2 and the minimum discharge shall be in accordance with 7.3.

5.6 Test pressure

The body shall withstand an internal pressure of 10 bar or 1,5 times the $P(T_{max})$, whichever is the greater, without visible permanent deformation when tested in accordance with E.1.

5.7 Burst pressure

The minimum burst pressure of the body, fitted with all pressure retaining parts, shall be 18 bar or at least 1,2 times test pressure, whichever is the greater, when tested in accordance with E.2. The body shall not fragment or eject any parts.

5.8 Life

An extinguishing aerosol dispenser has a maximum life of 39 months from the date of manufacture.

5.9 Dielectric test

5.9.1 General

The dielectric test is designed to determine the electrical conductivity of the extinguishing aerosol dispenser during the test when performed in accordance with Annex G.

5.9.2 Required performance

When the extinguishing aerosol dispenser is in operation and the metallic plate is live, the current between the handle and earth, and between the nozzle and earth, shall not be more than 0,5 mA at any time during the complete discharge of the extinguishing aerosol dispenser. The test shall be carried out in accordance with Annex J.

6 Filling requirements

6.1 Media tolerance

The filling tolerance of the gross contents shall be + 5 % for powder extinguishing media and + 0/-3 % for all other extinguishing media.

The filling tolerance for each individual constituent of the gross content shall be + 2 %.

6.2 Filling pressure

The filling pressure shall be + 0,5 bar of the working pressure at 20 °C.

6.3 $P(T_{max})$

The filling pressure, when filled to the upper tolerance, shall be such that the maximum developed pressure at 50 °C shall not exceed 13,2 bar.

7 Performance

7.1 Delay on operation

Not more than 2 s shall elapse between activation of the valve and commencement of the discharge when tested in accordance with G.1.

7.2 Duration of discharge

The duration of effective discharge shall be not less than 6 s when tested in accordance with G.1 (continuous discharge).

7.3 Minimum discharge of contents

The extinguishing aerosol dispenser, when operated in its normal working position, shall discharge not less that 85 % of the nominal charge, when tested in accordance with G.1 (continuous discharge) and G.2 (intermittent discharge).

7.4 Leakage rate

The rate of leakage before and after storage, in accordance with Annex B and Annex D, shall not exceed a rate of loss of pressure equivalent to 5 % of the working pressure per annum.

7.5 Retention of charge following partial discharge

The second pressure shall not be less than 80 % of the first, when the extinguishing aerosol dispenser is tested in accordance with Annex H.

7.6 Fire extinguishing performance rating — Ratings

7.6.1 General

The extinguishing aerosol dispenser shall fulfil the requirements of (7.6.2 + 7.6.3) or (7.6.2 + 7.6.4) or (7.6.2 + 7.6.3 + 7.6.4).

7.6.2 Class A rating

The class A rating of the extinguishing aerosol dispenser shall be determined by the test method described in I.3.

7.6.3 Class B rating

The class B rating of the extinguishing aerosol dispenser shall be determined by the test method described in I.4.

7.6.4 Class F rating

The class F rating of the extinguishing aerosol dispenser shall be determined by the test method described in I.5.

7.7 Effective throw

No more 25 % of the extinguishing media shall be collected when tested to G.3.

8 Production tests

8.1 General

In addition to any other scheme of quality control, extinguishing aerosol dispensers shall be tested according to the production testing schemes of this sub clause.

8.2 Final inspection of filled extinguishing aerosol dispensers

8.2.1 General

The integrity of each extinguishing aerosol dispenser shall be verified by one of the following methods.