SLOVENSKI STANDARD
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Prenosni aerosolni razpršilniki za gašenje požara

Portable aerosol dispensers for fire extinguishing purposes

Löschspraydosen

Générateur d'aérosol portatif à fonction extinctrice

Ta slovenski standard je istoveten z: **EN 16856:2020**

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Portable aerosol dispensers for fire extinguishing purposes

Générateur d'aérosol portatif à fonction extinctrice

Feuerlöschsprays

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (EN 16856:2020) has been prepared by Technical Committee CEN/TC 70 “Manual means of firefighting equipment”, the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by October 2020, and conflicting national standards shall be withdrawn at the latest by October 2020.

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Introduction

This document has been written with the aim of producing a specification for small disposable, aerosol dispensers for fire extinguishing purposes with an acceptable level of performance. This type of product is intended for domestic 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. These products are not intended to supplant extinguishers that comply with EN 3.

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

It supplements the characteristics, performance and test methods for extinguishing aerosol dispensers for fire extinguishing purposes, in addition to the requirements of the Directive 75/324/EEC. Requirements in this document 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 I for extinguishing test fires of type A, type B and type F classes of EN 2, as appropriate.

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

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2, *Classification of fires*

EN 3 (all parts), *Portable Fire Extinguishers*

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

EN 1568-3, *Fire extinguishing media - Foam concentrates - Part 3: Specification for low expansion foam concentrates for surface application to water-immiscible liquids*

EN 1568-4, *Fire extinguishing media - Foam concentrates - Part 4: Specification for low expansion foam concentrates for surface application to water-miscible liquids*

EN 14848, *Aerosol containers - Metal containers with 25,4 mm aperture - Dimensions of valve cups*

EN 14850, *Aerosol containers - Metal containers with 25,4 mm aperture - Measurement of contact height*

EN 15006, *Metal aerosol containers - Aluminium containers - Dimensions of the 25,4 mm aperture*

EN 15008, *Aerosol containers - Aluminium containers - Dimensions of one-piece cans with 25,4 mm aperture*

EN ISO 9227, *Corrosion tests in artificial atmospheres - Salt spray tests (ISO 9227:2017)*

ISO 657-1, *Hot-rolled steel sections — Part 1: Equal-leg angles — Dimensions*

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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1
fire extinguishing aerosol dispenser
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

3.2
batch
definite quantity of products or components produced at one time under uniform condition

3.3
body
metallic container of the extinguishing aerosol dispenser not fitted with its accessories, such as valves

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

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

3.6
maximum pressure at maximum operating temperature
$\boldsymbol{P(T_{max})}$
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 T_{max}

3.7
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

3.8
extinguishing media
substance including any additive, such as corrosion inhibitor, freezing point depressant or foaming agent, contained in the extinguishing aerosol dispenser that causes extinction of a fire

3.9
protective cap
cover over the valve of the extinguishing aerosol dispenser

Note 1 to entry: if fitted, the protective cap may be the safety device.

3.10
propellant
compressed gas held in the container, which provides the required pressure for the discharge of the extinguishing media

3.11
fire rating
designation of the largest test fire that has been extinguished when tested in accordance with 7.5.2, 7.5.3 and 7.5.4

3.12
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

3.13
safety device
part that needs to be broken or removed before the extinguishing aerosol dispenser, and can be activated to prevent inadvertent operation

3.14
security seal
part that is broken when removing the safety device and once broken cannot be replaced

3.15
minimum operating temperature
T_{min}
minimum temperature declared by the manufacturer at which the extinguishing aerosol dispenser will operate

3.16
maximum operating temperature
T_{max}
maximum temperature declared by the manufacturer

4 Contents of the extinguishing aerosol dispenser

4.1 Extinguishing media

The extinguishing media shall be one of the following:

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

— powder conforming to EN 615.

For products containing AFFF, use EN 1568-3 or EN 1568-4; and for those containing powder use EN 615.

Where an EN or ISO standard applies, it should be used.

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 be possible to operate the valve by one single action after having removed the safety device. 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 5.1.6 and 5.1.7.

5.1.3 The design of the extinguishing aerosol dispenser shall allow visual identification if the extinguishing aerosol dispenser has been unsealed.

5.1.4 If during visual inspection the seal is found to be broken the extinguishing aerosol dispenser shall be discarded.

5.1.5 The extinguishing aerosol dispenser shall be used with the valve upright.

5.1.6 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.

5.1.7 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 5 N and 50 N, see Annex F. This security seal shall not be re-usable.

5.1.8 The extinguishing aerosol dispenser shall incorporate a valve to enable the discharge to be started. The force required to actuate the device shall be between 5 N and 50 N. This valve shall be self-closing enabling the discharge to be interrupted, 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, and if in aluminium shall be in accordance with EN 15006 and EN 15008.

Seamless steel containers are allowed.

5.2.2 Closure

The closure shall be crimped under the neck ring of the body, in accordance with EN 14848 and EN 14850.

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 corrosion or other chemical degradation likely to impair its operation or safety, and shall fulfill the following requirements:

— the force required to release the safety device shall be as specified in 5.1.7;

— the force required to actuate the extinguishing aerosol dispenser shall be as specified in 5.1.8;

— when the extinguishing aerosol dispenser is tested in accordance with G.1 each duration of operation at (20 ± 10) °C shall be within ± 25 % with a maximum deviation of 5 s of the average value determined in 7.2;

— the extinguishing aerosol dispenser shall fulfil requirement of 5.7;

— the rate of pressure loss shall not exceed 5 % of the working pressure per annum.

5.3.2 Internal corrosion

After testing in accordance with B.2, the extinguishing aerosol dispenser shall fulfill the following requirements:

— the rate of pressure loss shall not exceed 5 % of the working pressure per annum;

— when the extinguishing aerosol dispenser is tested in accordance with G.1 each duration of operation at (20 ± 10) °C shall be within ± 25 % with a maximum deviation of 5 s of the average value determined in 7.2;

— the extinguishing aerosol dispenser shall fulfill the requirements of 5.7.

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

After being subjected to testing in accordance with Annex C, the extinguishing aerosol dispenser (with safety device) 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. To ensure any leak does not affect the performance of the extinguishing aerosol dispenser, it shall operate as intended and be tested after 5 min of being subjected to the tests in Annex C. The discharge time shall be ± 25 % with a maximum deviation of 5 s 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

After being subjected to testing in accordance with Annex D, the extinguishing aerosol dispenser (with safety device) shall operate as intended i.e. the discharge time shall be ± 25 % with a maximum deviation of 5 s of the average effective discharge 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 permanent deformation and no increase in volume greater than 1 % when tested in accordance with E.2.

5.7 Burst pressure

The minimum burst pressure of the assembly, 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.3.

The assembly shall not fragment or eject any parts.

5.8 Life of product

The extinguishing aerosol dispenser has a maximum expiry date of 39 months from the date of manufacture.

Extinguishing aerosol dispensers are intended to be discarded after any use and are not to be refilled.

NOTE Disposal might be controlled by National laws and regulations.

5.9 Dielectric test

5.9.1 General

The dielectric test is designed to determine the electrical conductivity of the water based extinguishing aerosol dispenser discharge stream during the test when performed in accordance with Annex J.

5.9.2 Required performance

When the extinguishing aerosol dispenser is in operation and the metallic plate is live, the current between the aerosol dispenser 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.