



SLOVENSKI STANDARD

SIST EN 12416-1:2024

01-september-2024

Vgrajeni gasilni sistemi - Sistemi s praškom - 1. del: Zahteve in preskusne metode za sestavne dele

Fixed firefighting systems - Powder systems - Part 1: Requirements and test methods for components

Ortsfeste Brandbekämpfungsanlagen - Pulverlöschanlagen - Teil 1: Anforderungen und Prüfverfahren für Bauteile

Installations fixes de lutte contre l'incendie - Systèmes d'extinction à poudre - Partie 1: Exigences et méthodes d'essais des éléments constitutifs

Ta slovenski standard je istoveten z: **EN 12416-1:2024**

[SIST EN 12416-1:2024](https://standards.iteh.ai/catalog/standards/sist/275c169c-5c17-4839-a79b-722d2c030010/sist-en-12416-1-2024)

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ICS:

13.220.10 Gašenje požara Fire-fighting

SIST EN 12416-1:2024

en,fr,de

EUROPEAN STANDARD

EN 12416-1

NORME EUROPÉENNE

EUROPÄISCHE NORM

July 2024

ICS 13.220.20

Supersedes EN 12416-1:2001+A2:2007

English Version

Fixed firefighting systems - Powder systems - Part 1: Requirements and test methods for components

Installations fixes de lutte contre l'incendie - Systèmes
d'extinction à poudre - Partie 1 : Exigences et
méthodes d'essai des éléments constitutifs

Ortsfeste Brandbekämpfungsanlagen -
Pulverlöschanlagen - Teil 1: Anforderungen und
Prüfverfahren für Bauteile

This European Standard was approved by CEN on 24 June 2024.

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COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

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European foreword

This document (EN 12416-1:2024) 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of an identical text or by endorsement, at the latest by January 2025, and conflicting national standards shall be withdrawn at the latest by January 2025.

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

This document supersedes EN 12416-1:2001+A2:2007.

The main changes compared with EN 12416-1:2001+A2:2007 are as follows:

- revision of the normative references;
- revision of Clause 6;
- revision of Annexes D, F, G and N;
- deletion of the former Annexes H and I;
- extension of the bibliography.

This European Standard has the general title “Fixed firefighting systems — Powder systems” and consists of the following two parts:

- Part 1: Requirements and test methods for components;

- Part 2: Design, construction and maintenance.

This document is included in a series of European Standards planned to cover also:

- a) gas extinguishing components and systems (the EN 12094 series and the EN 15004 series);
- b) sprinkler components and systems (the EN 12259 series and the EN 12845 series);
- c) smoke control systems (the EN 12101 series);
- d) explosion protection systems;
- e) foam systems (the EN 13565 series);
- f) hose systems (the EN 671 series);
- g) water spray systems (CEN/TS 14816);
- h) water mist components and systems (the EN 17450 series and the EN 14972 series).

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

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

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Introduction

It has been assumed in the preparation of this document that the execution of its provisions is entrusted to appropriately qualified and experienced people.

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EN 12416-1:2024 (E)**1 Scope**

This document specifies requirements and test methods for materials, construction and performance of components intended for use in powder firefighting systems complying with EN 12416-2:2001+A1:2007.

The components covered are as follows:

- powder containers;
- expellant gas container assemblies;
- pressure regulators and gauges;
- actuators;
- main isolating valves and selector valves;
- nozzles.

The components are suitable for powder firefighting systems for general use in buildings and other construction works. In areas with a risk of explosion, earthquake zones, extreme environmental conditions, e.g. marine, offshore, mining or aircraft additional considerations apply.

This document covers components for use in powder extinguishing systems complying with EN 12416-2:2001+A1:2007. It does not cover, for example, pipes and fittings which are covered by more general standards for which requirements and recommendations are given in EN 12416-2:2001+A1:2007. Nor does it cover fire detectors or electrical control and indicating equipment.

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 286-1:1998, *Simple unfired pressure vessels designed to contain air or nitrogen — Part 1: Pressure vessels for general purposes*

EN 1964-3, *Transportable gas cylinders — Specification for the design and construction of refillable transportable seamless steel gas cylinders of water capacities from 0,5 litre up to and including 150 litres — Part 3: Cylinders made of seamless stainless steel with an Rm value of less than 1100 MPa*

EN 12094-4, *Fixed firefighting systems — Components for gas extinguishing systems — Part 4: Requirements and test methods for container valve assemblies and their actuators*

EN 12094-5, *Fixed firefighting systems — Components for gas extinguishing systems — Part 5: Requirements and test methods for high and low pressure selector valves and their actuators*

EN 12094-8, *Fixed firefighting systems — Components for gas extinguishing systems — Part 8: Requirements and test methods for connectors*

EN 12094-13, *Fixed firefighting systems — Components for gas extinguishing systems — Part 13: Requirements and test methods for check valves and non-return valves*

EN 12416-2:2001+A1:2007, *Fixed firefighting systems — Powder systems — Part 2: Design, construction and maintenance*

EN 60529, *Degrees of protection provided by enclosures (IP Code) (IEC 60529)*

EN ISO 4126-1, *Safety devices for protection against excessive pressure — Part 1: Safety valves (ISO 4126-1)*

EN ISO 4126-2, *Safety devices for protection against excessive pressure — Part 2: Bursting disc safety devices (ISO 4126-2)*

EN ISO 9809-1, *Gas cylinders — Design, construction and testing of refillable seamless steel gas cylinders and tubes — Part 1: Quenched and tempered steel cylinders and tubes with tensile strength less than 1 100 MPa (ISO 9809-1)*

EN ISO 9809-2, *Gas cylinders — Design, construction and testing of refillable seamless steel gas cylinders and tubes — Part 2: Quenched and tempered steel cylinders and tubes with tensile strength greater than or equal to 1 100 MPa (ISO 9809-2)*

EN ISO 10297, *Gas cylinders — Cylinder valves — Specification and type testing (ISO 10297)*

EN ISO 17871, *Gas cylinders — Quick-release cylinder valves — Specification and type testing (ISO 17871)*

ISO 3864-1, *Graphical symbols — Safety colours and safety signs — Part 1: Design principles for safety signs and safety markings*

3 Terms and definitions

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

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

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

<https://standards.iteh.ai/catalog/standards/sist/275c1c9e-5cf7-4b59-a79b-722d2c03001c/sist-en-12416-1-2024>

3.1

actuator

component which when receiving a signal operates another component

3.2

bursting disc

diaphragm designed to burst at a predetermined pressure difference

3.3

calculation zone

zone for which the design quantity of the extinguishing media required is calculated separately

3.4

diptube

tube through which powder from the lower part of the container is transported into the piping

3.5

equipment fire

fire of three dimensional objects, also subject to leakage, dripping or splashing

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- 3.6
expellant gas container**
high pressure container to store the expellant gas
- 3.7
expellant gas container valve**
valve which retains the expellant gas in the expellant gas container, and which releases it when actuated
- 3.8
fill ratio**
mass of an expellant gas relative to the net capacity of the expellant gas container, expressed in kilograms per litre (kg/l)
- 3.9
flooding zone**
zone comprising all calculation zones to be flooded simultaneously with the extinguishing media via one selector valve
- 3.10
local application system**
system to protect separate objects
- 3.11
maximum working pressure**
pressure (at a temperature of 50 °C) at which the system or the component can still work and may be operated
- 3.12
minimum release energy**
energy which is needed for the operation of a component
- 3.13
minimum working pressure**
pressure (at a temperature of -20 °C) at which the system or the component can still be operated
- 3.14
non-return valve**
component permitting flow only in one direction
- 3.15
nozzle**
component to achieve determined performance characteristics and a uniform distribution into or at a protected zone
- 3.16
pilot container**
power source for a pneumatic alarm device and for actuation of the expellant gas container