
Smernice za izbiro, namestitvev in uporabo plamenskih zapor

Guide for the selection, application and use of flame arresters

Richtlinie für die Auswahl, die Anwendung und den Einsatz von
Flammendurchschlagssicherungen

Guide pour la sélection, l'application et l'utilisation des arrête-flammes

Ta slovenski standard je istoveten z: prEN 16793

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23.060.40	Tlačni regulatorji	Pressure regulators

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Guide for the selection, application and use of flame arresters

Guide pour la sélection, l'application et l'utilisation des
arrête-flammes

Richtlinie für die Auswahl, die Anwendung und den
Einsatz von Flammendurchschlagssicherungen

This draft European Standard is submitted to CEN members for enquiry. It has been drawn up by the Technical Committee CEN/TC 305.

If this draft becomes a European Standard, 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.

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prEN 16793:2026 (E)**European foreword**

This document (prEN 16793:2026) has been prepared by Technical Committee CEN/TC 305 “Potentially explosive atmospheres – Explosion prevention and protection”, the secretariat of which is held by DIN.

This document will supersede CEN/TR 16793:2016.

This document prEN 16793:2026 includes the following significant technical changes with respect to CEN/TR 16793:2016:

- change from Technical Report to European Standard;
- change of references from EN ISO 16852 to EN ISO/IEC 80079-49;
- shortening of Clause 4;
- clarifications throughout the document.

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Introduction

The document provided is general in nature and for specific applications further expert advice should be sought.

In addition to the content of operating manuals from manufacturers, the local accident prevention regulations, environmental protection and general safety provisions for the devices' area of use, as well as relevant laws and national directives, this paper will support the user for a proper use of flame arresters.

In Europe, the "Directive 2014/34/EU on equipment and protective systems intended for use in potentially explosive atmospheres" (ATEX – Atmosphères Explosibles) is mandatory for the production and test intended for use of products in potentially explosive atmospheres. Flame arresters are defined as a Protective System.

Flame arresters should be tested according to EN ISO/IEC 80079-49, *Explosive atmospheres — Part 49: Flame arresters — Performance requirements, test methods and limits for use*, to fulfill the health and safety requirements of this directive.

Flame arresters are subjected to an EC type examination and are designed for use in areas at risk from explosion.

The Directive 1999/92/EC of the European Parliament and of the Council of 16 December 1999 on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres – gives the minimum requirements for the improvement of health protection and safety of employers who could be endangered by explosive atmospheres. The main issues are assessment of explosion risk, zone classification and the explosion protection documents (including requirements for personnel to do engineering, equipment selection, installation, maintenance, repair, etc.).

National regulations and/or codes relating to specific industries or applications can exist.

Flame arresters are required to protect against many types of explosion events within equipment.

The safety obtained depends heavily upon correct selection, installation and maintenance of the flame arrester. This cannot be achieved without responsible, informed management.

1 Scope

This document is aimed primarily at persons who are responsible for the safe design and operation of installations and equipment using flammable liquids, vapours or gases.

This document applies to both industrial and mining applications.

This document describes possible risks and gives proposals for the protection against these risks by the use of flame arresters.

This document gives some guidance for the selection and installation of flame arresters according to EN ISO/IEC 80079-49 for different common scenarios and it gives best practice for the installation and maintenance of these flame arresters.

This document is applicable to pressures ranging from 80 kPa to 160 kPa and temperatures ranging from -20 °C to $+200\text{ °C}$.

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 ISO/IEC 80079-49:2024, *Explosive atmospheres — Part 49: Flame arresters — Performance requirements, test methods and limits for use (ISO/IEC 80079-49:2024)*

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions given in EN ISO/IEC 80079-49 and the following 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/>

3.1.1

end-of-line flame arrester

flame arrester that is fitted with one pipe connection only

[SOURCE: EN ISO/IEC 80079-49:2024, 3.21]

3.1.2

explosion

abrupt oxidation or decomposition reaction producing an increase in temperature, pressure, or in both simultaneously

[SOURCE: ISO 8421-1:1987, 1.13]

3.1.3**explosion group
equipment group**

classification system of equipment related to the explosive atmosphere for which they are intended to be used

[SOURCE: EN ISO/IEC 80079-49:2024, 3.12.3]

Note 1 to entry: While in a large part of the safety equipment industry “explosion group” is used, the mandatory term to be used in the standards of IEC/TC 31 is “equipment group”.

3.1.4**explosion-pressure-resistant**

property of vessels and equipment designed to withstand the expected explosion pressure without becoming permanently deformed

[SOURCE: EN 13237:2024, 3.31.1]

3.1.5**explosion-pressure-shock resistant**

property of vessels and equipment designed to withstand the expected explosion pressure without rupturing, but allowing permanent deformation

[SOURCE: EN 13237:2024, 3.31.2]

3.1.6**deflagration**

explosion propagating at subsonic velocity

[SOURCE: ISO 8421-1:1987, 1.11]

3.1.7**detonation**

explosion propagating at supersonic velocity and characterized by a shock wave

[SOURCE: ISO 8421-1:1987, 1.12]

3.1.8**stable detonation**

detonation progressing through a confined system without significant variation of velocity and pressure characteristics

Note 1 to entry: For the atmospheric conditions, test mixtures and test procedures of this document, typical velocities range between 1 600 m/s and 2 200 m/s.

[SOURCE: EN ISO/IEC 80079-49:2024, 3.10]