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Explosion suppression systems

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This standard includes the English version of the European Standard.

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English Version

Explosion suppression systems

Systèmes de suppression d'explosion

Explosions-Unterdrückungssysteme

This European Standard was approved by CEN on 27 September 2021 and includes Amendment 1 approved by CEN on 29 December 2024.

EUROPEAN COMMITTEE FOR STANDARDIZATION
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European foreword

This document (EN 14373:2021+A1:2025) 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 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of an identical text or by endorsement, at the latest by August 2025, and conflicting national standards shall be withdrawn at the latest by August 2025.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 [A1] EN 14373:2021 [A1].

This document includes Amendment 1 approved by CEN on 29 December 2024.

The start and finish of text introduced or altered by amendment is indicated in the text by tags [A1] [A1].

The significant changes between this document and EN 14373:2005 are given in Annex D.

This document has been prepared under a standardization request addressed to CEN by the European Commission. The Standing Committee of the EFTA States subsequently approves these requests for its Member States.

For the relationship with EU Legislation, see informative Annex ZA, which is an integral part of this document.

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.

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.

1 Scope

This document describes the basic requirements for the design and application of explosion suppression systems. This document also specifies test methods for evaluating the effectiveness and the scaling up of explosion suppression systems against defined explosions. This document covers:

— general requirements for explosion suppression system parts;

— evaluating the effectiveness of an explosion suppression system;

— evaluating the scale up of an explosion suppression system to larger than tested volumes;

— development and evaluation of design tools for explosion suppression systems;

— installation, operation and maintenance instructions for an explosion suppression system.

This document is applicable only to explosion suppression systems intended for the protection of closed, or essentially closed, enclosures in which an explosion could result as a consequence of ignition of an explosible mixture, e.g. dust-air, gas(vapour)-air, dust-gas(vapour)-air and mist-air.

This document is not applicable for explosions of materials listed below, or for mixtures containing some of those materials:

— unstable materials that are liable to dissociate;

— explosive materials;

— pyrotechnic materials;

— pyrophoric materials.

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 1127-1:2019, *Explosive atmospheres - Explosion prevention and protection - Part 1: Basic concepts and methodology*

〚A1〛 EN 13237:2024, *Potentially explosive atmospheres - Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres* 〈A1〛

EN 15233:2007, *Methodology for functional safety assessment of protective systems for potentially explosive atmospheres*

〚A1〛 EN 15967:2022, *Determination of maximum explosion pressure and the maximum rate of pressure rise of gases and vapours* 〈A1〛

EN 14034-1:2004+A1:2011, *Determination of explosion characteristics of dust clouds - Part 1: Determination of the maximum explosion pressure p_{max} of dust clouds*

EN 14034-2:2006+A1:2011, *Determination of explosion characteristics of dust clouds - Part 2: Determination of the maximum rate of explosion pressure rise (d_p/d_t)max of dust clouds*

[A1] EN IEC 60079-0:2018,[1] *Explosive atmospheres - Part 0: Equipment - General requirements (IEC 60079-0:2017)* [A1]

[A1] EN IEC 60079-14:2024, *Explosive atmospheres - Part 14: Electrical installation design, selection and installation of equipment, including initial inspection (IEC 60079-14:2024)* [A1]

[A1] EN 60529:1991,[2] *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)* [A1]

[A1] EN ISO 80079-36:2016,[3] *Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic method and requirements (ISO 80079-36:2016)* [A1]

1 As impacted by EN IEC 60079-0:2018/AC:2020-02 and EN IEC 60079-0:2018/A11:2024.

2 As impacted by EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/AC:2016-12 and EN 60529:1991/A2:2013/AC:2019-02.

3 As impacted by EN ISO 80079-36:2016/AC:2019.