PLAHVATUSE SUMMUTAMISE SÜSTEEMID

Explosion suppression systems

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN 14373:2021 sisaldab Euroopa standardi EN 14373:2021 ingliskeelset teksti.	This Estonian standard EVS-EN 14373:2021 consists of the English text of the European standard EN 14373:2021.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 03.11.2021.	Date of Availability of the European standard is 03.11.2021.
Standard on kättesaadav Eesti Standardimis- ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

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EUROPEAN STANDARD
NORME EUROPÉENNE
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EN 14373

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Supersedes EN 14373:2005

English Version

Explosion suppression systems

Systèmes de suppression d'explosion

Explosions-Unterdrückungssysteme

This European Standard was approved by CEN on 27 September 2021.

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. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN members are the national standards bodies of 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, Turkey and United Kingdom.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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European foreword

This document (EN 14373:2021) 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 May 2022, and conflicting national standards shall be withdrawn at the latest by November 2022.

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 14373:2005.

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

This document has been prepared under a Standardization Request given to CEN by the European Commission and the European Free Trade Association, and supports essential requirements of EU Directive(s).

For relationship with EU Directive(s), 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, Turkey 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*

EN 13237:2012, *Potentially explosive atmospheres - Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres*

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

EN 15967:2011, *Determination of maximum explosion pressure and the maximum rate of pressure rise of gases and vapours*

EN 14034-1:2004+A1:2011, *Determination of explosion characteristics of dust clouds - Part 1: Determination of the maximum explosion pressure pmax 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 (dp/dt)max of dust clouds*

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

EN 60079-14:2014, *Explosive atmospheres - Part 14: Electrical installations design, selection and erection (IEC 60079-14:2013)*

EN 60529:1991,[1] *Degrees of protection provided by enclosures (IP Code) (IEC 60529:1989)*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 1127-1:2019 and EN 13237:2012 and the following apply.

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

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

3.1
high rate discharge suppressor
HRD-suppressor
vessel with opening mechanism, which upon activation discharges an explosion suppressant at a high rate

3.2
suppressant
substance contained in the HRD-suppressor which, when dispersed into an enclosure to be protected, can arrest and mitigate a developing explosion in that enclosure

3.2.1
powder suppressant
powder with recognised flame extinguishing properties such as products based on monoammonium phosphate, potassium bicarbonate or sodium bicarbonate

3.2.2
liquid suppressant
substance stored as a liquid with recognised flame extinguishing properties such as cold or hot water

3.3
dispersion pressure
p_s
pressure in HRD-suppressor to disperse the suppressant, which is provided by gas, chemical reaction or the application of heat

[1] As impacted by amendments EN 60529:1991/A1:2000 and EN 60529:1991/A2:2013.