



SLOVENSKI STANDARD

SIST EN 13237:2024

01-december-2024

Potencialno eksplozivne atmosfere - Izrazi in definicije za opremo in zaščitne sisteme, namenjene za uporabo v potencialno eksplozivnih atmosferah

Potentially explosive atmospheres - Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres

Explosionsgefährdete Bereiche - Begriffe für Geräte und Schutzsysteme zur Verwendung in explosionsgefährdeten Bereichen

Atmosphères explosibles - Termes et définitions pour les appareils et systèmes de protection destinés à être utilisés en atmosphères explosibles

Ta slovenski standard je istoveten z: EN 13237:2024

[SIST EN 13237:2024](https://standards.slovenski-institut.si/standards/sist/0107074/0107074242/0203001725/standard-en-13237-2024)

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EUROPEAN STANDARD

EN 13237

NORME EUROPÉENNE

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English Version

Potentially explosive atmospheres - Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres

Atmosphères explosibles - Termes et définitions pour
les appareils et systèmes de protection destinés à être
utilisés en atmosphères explosibles

Explosionsgefährdete Bereiche - Begriffe für Geräte
und Schutzsysteme zur Verwendung in
explosionsgefährdeten Bereichen

This European Standard was approved by CEN on 12 August 2024.

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.

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[SIST EN 13237:2024](https://standards.iteh.ai/catalog/standards/sist/8fc97c74-a904-4b70-92f5-82838017231a/sist-en-13237-2024)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
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 13237:2024) 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 April 2025, and conflicting national standards shall be withdrawn at the latest by April 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 13237:2012.

The significant technical changes between this document and EN 13237:2012 are given in Annex B, Table B.1.

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 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.

EN 13237:2024 (E)**Introduction**

This document has been produced to assist designers, manufacturers and other interested parties to use harmonized terms and definitions (vocabulary) for equipment and protective systems intended for use in potentially explosive atmospheres. It describes the vocabulary to be used to give all standards in this area an overall uniformity of terminology. Throughout this document, the only hazard considered is the explosion of an explosive atmosphere.

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1 Scope

This document specifies terms and definitions (vocabulary) to be used in suitable standards dealing with equipment and protective systems intended for use in potentially explosive atmospheres within the scope of Directive 2014/34/EU.

NOTE Terms and definitions avoid misunderstandings that are important in relation to the essential health and safety requirements of Directive 2014/34/EU.

2 Normative references

There are no normative references in this document.

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:

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

3.1

air flow velocity

volume of air [m³] which flows through a defined surface [m²] per unit time [s]

[SOURCE: EN 17077:2018, 3.1]

3.2

ambient atmosphere

normal atmosphere surrounding the equipment and protective system

3.3

ambient temperature

temperature of the air or other media, in the immediate vicinity of the equipment or component

[SOURCE: EN IEC 60079-0:2018¹, 3.1, modified – Note 1 to entry, Note 2 to entry and Note 3 to entry have been removed]

3.4

atmospheric conditions

conditions with pressures ranging from 80 kPa to 110 kPa and temperatures ranging from –20°C to +60°C

[SOURCE: EN ISO 16852:2016, 3.25]

Note 1 to entry: EN ISO 16852 will be replaced by EN ISO/IEC 80079-49².

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

² To be published. Stage at the time of publication: FprEN ISO/IEC 80079-49.

EN 13237:2024 (E)**3.5****combustible dust**

finely divided solid particles, 500 µm or less in nominal size, which can form explosive mixtures with air at standard atmospheric pressure and temperatures

Note 1 to entry: This includes dust and grit as defined in ISO 4225:2020.

Note 2 to entry: The term “solid particles” is intended to address particles in the solid phase but does not preclude a hollow particle.

[SOURCE: EN ISO/IEC 80079-20-2:2016³, 3.1, modified — “may” has been replaced with “can”; reference date in Note 1 to entry has been updated]

3.5.1**conductive dust**

combustible metal dusts and other combustible dusts with electrical resistivity equal to or less than $1 \times 10^3 \Omega \text{ m}$

Note 1 to entry: Metal dust is treated as conductive dust because it is assumed that surface oxidation cannot be depended upon to always ensure electrical resistivity greater than $1 \times 10^3 \Omega \text{ m}$

[SOURCE: EN ISO/IEC 80079-20-2:2016³, 3.1.1]

3.5.2**non-conductive dust**

combustible dust with electrical resistivity greater than $1 \times 10^3 \Omega \text{ m}$

[SOURCE: EN ISO/IEC 80079-20-2:2016³, 3.1.2]

3.6**combustible flyings**

solid particles, including fibres, where one dimension is greater than 500 µm in nominal size, which may form an explosive mixture with air at standard atmospheric pressure and temperature

Note 1 to entry: The ratio of length to width is 3 or more.

Note 2 to entry: Examples of flyings include carbon fibre, rayon, cotton (including cotton linters and cotton waste), sisal, jute, hemp, cocoa fibre, oakum and baled waste kapok.

[SOURCE: EN ISO/IEC 80079-20-2:2016³, 3.2]

3.7**constructional safety “c”**

ignition protection where constructional measures are applied so as to protect against the possibility of ignition from hot surfaces, sparks and adiabatic compression generated by moving parts

[SOURCE: EN ISO 80079-37:2016, 3.1]

³ As impacted by EN ISO/IEC 80079-20-2:2016/AC:2017.

3.8**control of ignition source “b”**

ignition protection where mechanical or electrical devices are used in conjunction with nonelectrical equipment to manually or automatically reduce the likelihood of a potential ignition source from becoming an effective ignition source

Note 1 to entry: This might for example be a level sensor used to indicate loss of oil, a temperature sensor to indicate a hot bearing or a speed sensor to indicate over-speed.

[SOURCE: EN ISO 80079-37:2016, 3.3]

3.9**control measure****3.9.1****automatic control measure**

action taken without manual intervention, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

[SOURCE: EN ISO 80079-37:2016, 3.3.1]

3.9.2**manual control measure**

action taken by a person as a result of a warning, indication, or alarm, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

[SOURCE: EN ISO 80079-37:2016, 3.3.2]

3.10**ignition prevention device****ignition prevention system**

arrangement that converts signals from one or more sensors into an action, or indication, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

[SOURCE: EN ISO 80079-37:2016, 3.3.3, modified – “ignition prevention devices/systems” has been replaced with “ignition prevention device” and “ignition prevention system”]

3.11**safety device**

device intended for use inside or outside explosive atmospheres but required for or contributing to the safe functioning of equipment and protective systems with respect to the risks of explosion

[SOURCE: EN ISO 80079-37:2016, 3.3.4, modified – “devices” has been replaced with “device” (twice)]

3.12**continuous grade of release**

release which is continuous or is expected to occur frequently or for long periods

[SOURCE: EN IEC 60079-10-1:2021, 3.4.2, modified – Note 1 to entry has been deleted]

EN 13237:2024 (E)**3.13****deflagration**

explosion propagating at subsonic velocity

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

3.14**degree of protection**

extent of protection provided by an enclosure against access to hazardous parts, against ingress of solid foreign objects and/or ingress of water and verified by standardised test methods

[SOURCE: EN 60529:1991⁴, 3.3]

3.15**detonation**

explosion propagating at supersonic velocity and characterised by a shock wave

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

3.16**dust**

small solid particles in the atmosphere which settle out under their own weight, but which may remain suspended in air for some time

Note 1 to entry: Generally combustible dusts with a median value of the particle diameter below 500 µm may form explosible dust/air-mixtures.

[SOURCE: EN 14034-1:2004+A1:2011, 3.1, modified — Note 1 to entry has been changed]

3.17**electrical equipment**

items applied as a whole or in part for the utilisation of electrical energy

Note 1 to entry: These include, among others, items for the generation, transmission, distribution, storage, measurement, regulation, conversion and consumption of electrical energy and items for telecommunications.

[SOURCE: EN IEC 60079-0:2018¹, 3.31.1]

3.18**electrostatic leakage resistance**

electrical resistance measured between an object and earth

[SOURCE: EN 14983:2007, 3.1]

3.19**enclosure (of equipment or protective system)**

all the walls including doors, covers, cable entries, rods, spindles and shafts which contribute to the type of protection and/or their degree of protection (IP)

⁴ As impacted by EN 60529:1991/A1:2000, EN 60529:1991/A2:2013, EN 60529:1991/AC:2016-12 and EN 60529:1991/corrigendum May 1993.

3.20**equipment grouping**

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

[SOURCE: EN IEC 60079-0:2018¹, 3.32, modified – Note 1 to entry deleted]

3.21**Ex Component**

part of Ex Equipment or a module, marked with the symbol “U”, which is not intended to be used alone and requires additional consideration when incorporated into Ex Equipment or systems for use in explosive atmospheres

[SOURCE: EN ISO 80079-36:2016⁵, 3.9]

3.22**Ex Equipment**

equipment where measures have been applied to ensure that effective ignition sources are mitigated as required by the Equipment Protection Level (EPL)

Note 1 to entry: This includes the ignition hazard assessment and/or protective measures in accordance with EN ISO 80079 36:2016.

[SOURCE: EN ISO 80079-36:2016⁵, 3.11, modified – in the Note 1 to entry “this standard” has been replaced with the standard reference]

3.23**explosion**

sudden increase of pressure and temperature, due to oxidation or other exothermic reaction

[SOURCE: EN ISO/IEC 80079-38:2016⁶, 3.6]

3.24**explosion region**

area inside the boundary curve formed by the explosion limits of a flammable substance in various mixtures with air and inert gas

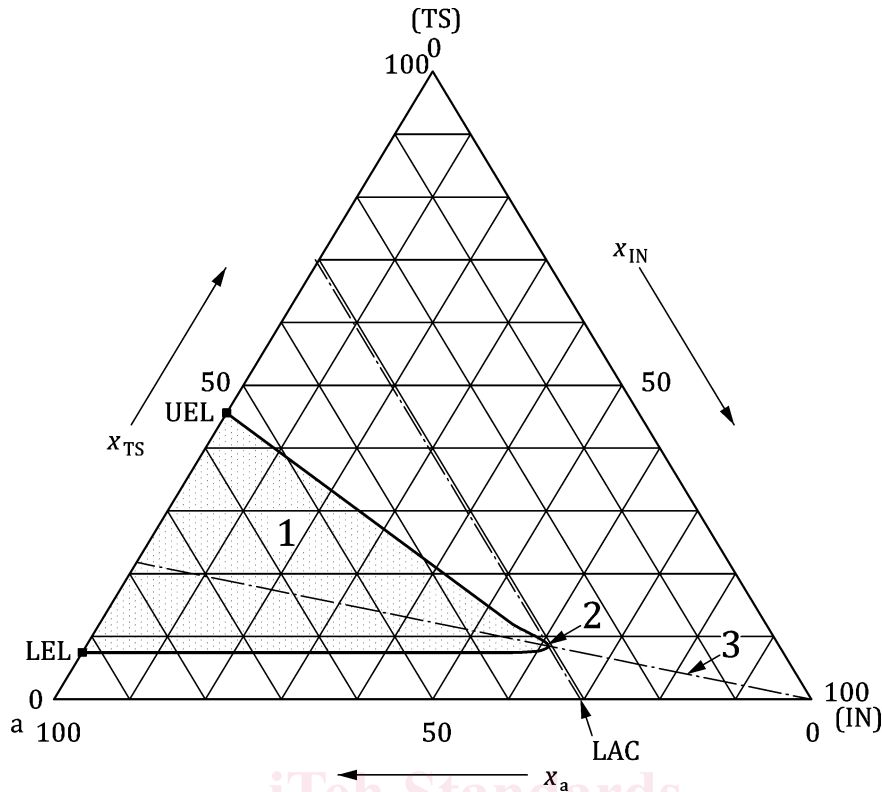
Note 1 to entry: In many cases the air concentration at the apex of the boundary curve corresponds to the limiting air concentration, LAC.

Note 2 to entry: In many cases this is also called explosion range.

⁵ As impacted by EN ISO 80079-36:2016/AC:2019.

⁶ As impacted by EN ISO/IEC 80079-38:2016/A1:2018.

EN 13237:2024 (E)

**Key**

- 1 explosion region
- 2 apex
- 3 stoichiometric line
- x molar fraction in %
- IN inert gas
- TS test substance
- a air
- LAC Limiting air concentration
- LEL Lower explosion limit
- UEL Upper explosion limit

Figure 1 — Explosion region for a ternary system of test substance, air and inert gas

3.25**explosion diverter**

passive device typically installed in a duct preventing flame jet ignition, pressure piling and reducing the probability of flame transmission into connected equipment

3.26**explosion isolation flap valve**

valve containing a flap which is fixed to the housing on an axis perpendicular to the flow direction, kept open by the process flow and able to stop explosions from propagating through pipelines in the direction opposite to the normal process flow through the valve

[SOURCE: EN 16447:2014, 3.1, modified — Note 1 to entry has been deleted]