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Explosion isolation systems

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English Version

Explosion isolation systems

Système d'isolation d'explosion

Explosions-Entkopplungssysteme

This European Standard was approved by CEN on 7 February 2009.

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 Management Centre or to any CEN member.

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Foreword

This document (EN 15089:2009) 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of an identical text or by endorsement, at the latest by September 2009, and conflicting national standards shall be withdrawn at the latest by September 2009.

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

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

For relationship with EC Directive(s), see informative Annex ZA, which is an integral part of this document.

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

1 Scope

This European Standard describes the general requirements for explosion isolation systems. An explosion isolation system is a protective system, which prevents an explosion pressure wave and a flame or only a flame from propagating via connecting pipes or ducts into other parts of apparatus or plant areas. This European Standard specifies methods for evaluating the efficacy of the various explosion isolation systems, and methods for evaluating design tools for such explosion isolation systems when applying these in practice.

This European Standard also sets out the criteria for alternative test methods and interpretation means to validate the efficacy of explosion isolations.

It covers e.g.:

- a) general requirements for the explosion isolation components;
- b) evaluating the effectiveness of an explosion isolation system;
- c) evaluating design tools for explosion isolation systems.

This European Standard is applicable only to the use of explosion isolation systems that are intended for avoiding explosion propagation between interconnected enclosures, in which an explosion may result as a consequence of ignition of an explosive mixtures e.g., dust-air mixtures, gas-(vapour-)air mixtures, dust-, gas-(vapour-)air mixtures and mists.

In general explosion isolation systems are not designed to prevent the transmission of fire or burning powder either of which can initiate an explosion in downstream plant items. It is necessary to take this situation into account in risk assessments.

This European Standard is only applicable for gas and dust explosions of chemically stable substances and mixtures of these (flame propagating at subsonic velocity).

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

- i) chemically unstable substances that are liable to decompose;
- ii) explosive substances;
- iii) pyrotechnic substances.

This European Standard does not cover flame arresters. For these devices refer to EN 12874.

2 Normative references

The following reference documents are indispensable for the application 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 12874:2001, *Flame arresters – Performance requirements, test methods and limits for use*

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

EN 13673-1, *Determination of the maximum explosion pressure and the maximum rate of pressure rise of gases and vapours – Part 1: Determination of the maximum explosion pressure*

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