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Flameless explosion venting devices

Einrichtungen zur flammenlosen Explosionsdruckentlastung

Dispositifs de décharge d'explosion sans flamme

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Contents

Page

Foreword

This document (EN 16009:2011) 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of an identical text or by endorsement, at the latest by January 2012, and conflicting national standards shall be withdrawn at the latest by January 2012.

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

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1 Scope

This European Standard specifies the requirements for flameless explosion venting devices used to protect enclosures against the major effects of internal explosions arising from the rapid burning of suspended dust, vapour or gas contained within. It includes the requirements for the design, inspection, testing, marking, documentation, and packaging. This standard is applicable to flameless explosion venting devices which are put on the market as autonomous protective systems.

Explosion venting devices are protective systems comprised of a pressure sensitive membrane fixed to, and forming part of, the structure that it protects. They are designed to intervene in the event of an explosion at a predetermined pressure, to immediately open a vent area sufficient to ensure that the maximum pressure attained by an explosion within the enclosure does not exceed the maximum pressure the structure is designed to withstand.

Flameless explosion venting devices typically consist of an explosion venting device in combination with a flame quenching element to avoid the transmission of flames into the surroundings. They are used to allow explosion venting in situations where otherwise the hazards of flames and pressure resulting from the venting would harm personnel or damage structures.

The application and specification of explosion venting devices is outlined for dust explosion protection in EN 14491 and for gas explosion protection in EN 14994.

This European Standard covers the flameless explosion venting of dust, vapour and gas explosions.

This European Standard does not cover details for the avoidance of ignition sources from detection devices or other parts of the flameless explosion venting devices.

2 Normative references

The following referenced 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 13237, *Potentially explosive atmospheres — Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres*

EN 14491, *Dust explosion venting protective systems*

EN 14797:2006, *Explosion venting devices*

EN 14994, *Gas explosion venting protective systems*

EN ISO 16852:2010, *Flame arresters — Performance requirements, test methods and limits for use (ISO 16852:2008, including Cor 1:2008 and Cor 2:2009)*

EN ISO/IEC 17025, *General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 13237, EN 14491, EN 14994, EN 14797 and the following apply.