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Guide for the selection, application and use of flame arresters

Táto technická normalizačná informácia obsahuje anglickú verziu CEN/TR 16793:2016.
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English Version

Guide for the selection, application and use of flame arresters

Guide pour la sélection, l'application et l'utilisation des arrête-flammes

Richtlinie für die Auswahl, die Anwendung und den Einsatz von Flammendurchschlagssicherungen

This Technical Report was approved by CEN on 22 December 2014. It has been drawn up by the Technical Committee CEN/TC 305.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
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European foreword

This document (CEN/TR 16793:2016) 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 document has been prepared under a mandate given to CEN by the European Commission and the European Free Trade Association.

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Introduction

The document provided is general in nature and for specific applications further expert advice should be sought.

In addition to the content of operating manuals from manufacturers, the local accident prevention regulations, environmental protection and general safety provisions for the devices' area of use, as well as relevant laws and national directives, this paper will support the user for a proper use of flame arresters.

In Europe, the "Directive 2014/34/EU on equipment and protective systems intended for use in potentially explosive atmospheres" (ATEX – Atmosphères Explosibles) is mandatory for the production and test intended for use of products in potentially explosive atmospheres. Flame arresters are defined as a Protective System.

Flame arresters should be tested according to EN ISO 16852, *Flame arresters – Performance requirements, test methods and limits for use,* to fulfill the health and safety requirements of this directive.

Flame arresters are subjected to an EC type examination and are designed for use in areas at risk from explosion.

The Directive 1999/92/EC of the European Parliament and of the Council of 16 December 1999 on minimum requirements for improving the safety and health protection of workers potentially at risk from explosive atmospheres - gives the minimum requirements for the improvement of health protection and safety of employers who could be endangered by explosive atmospheres. The main issues are assessment of explosion risk, zone classification and the explosion protection documents (including requirements for personnel to do engineering, equipment selection, installation, maintenance, repair, etc.).

National regulations and/or codes relating to specific industries or applications may exist which have to followed.

Flame arresters are required to protect against many types of explosion events within equipment.

The safety obtained depends heavily upon correct choice, installation and maintenance of the flame arrester. This cannot be achieved without responsible, informed management.

1 Scope

This Technical Report is aimed primarily at persons who are responsible for the safe design and operation of installations and equipment using flammable liquids, vapours or gases.

This document applies to both industrial and mining applications

This document describes possible risks and gives proposals for the protection against these risks by the use of flame arresters.

This document gives some guidance to choice of flame arresters according to EN ISO 16852 for different common scenarios and it gives best practice for the installation and maintenance of these flame arresters.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 60079-20-1, *Explosive atmospheres — Part 20-1: Material characteristics for gas and vapour classification — Test methods and data (IEC 60079-20-1)*

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 28300:2008, *Petroleum, petrochemical and natural gas industries — Venting of atmospheric and low-pressure storage tanks (ISO 28300:2008)*