BRITISH STANDARD

BS EN
13463-1:2009

Non-electrical equipment for use in potentially explosive atmospheres

Part 1: Basic method and requirements

ICS 13.230

BSI
British Standards

National foreword

This British Standard is the UK implementation of EN 13463-1:2009. It supersedes BS EN 13463-1:2001 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee FSH/23, Fire precautions in industrial and chemical plant.

A list of organizations represented on this committee can be obtained on request to its secretary.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

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Non-electrical equipment for use in potentially explosive atmospheres - Part 1: Basic method and requirements

Appareils non électriques destinés à être utilisés en atmosphères explosibles - Partie 1: Prescriptions et méthodologie

Nicht-elektrische Geräte für den Einsatz in explosionsgefährdeten Bereichen - Teil 1: Grundlagen und Anforderungen

This European Standard was approved by CEN on 29 November 2008.

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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 Management Centre has the same status as the official versions.

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Foreword

This document (EN 13463-1:2009) 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of an identical text or by endorsement, at the latest by July 2009, and conflicting national standards shall be withdrawn at the latest by July 2009.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 supersedes EN 13463-1:2001.

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.

Annex H provides details of significant technical changes between this European Standard and the previous edition: EN 13463-1:2001.

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.

Introduction

Non-electrical equipment in accordance with this European Standard means mainly mechanical equipment. The extent of explosion protection and prevention measures applied to mechanical equipment differ from those applied to electrical equipment.

Whereas common electrical equipment working within its design parameters often contains effective ignition sources, this is not true for most mechanical equipment. In most cases, the normal operation of mechanical equipment within its design parameters will not lead to ignition of an explosive atmosphere. In other words, most mechanical equipment performing its designed duty without malfunctions and with proper maintenance will not produce ignition sources in normal operation. Thus, additional protective measures that are commonly used for electrical explosion protected equipment (e.g. enclosures) are not needed.

Even where malfunctions have to be considered, much mechanical equipment can meet the requirements for category 2 equipment by a proper choice of well-tried constructional measures that would reduce failures causing ignition sources to an acceptably low level.

Essential to this decision is the use of the ignition hazard assessment to evaluate the potential ignition sources of mechanical equipment and under which conditions they will become effective. This is the fundamental difference to standards for electrical equipment.

1 Scope

This European Standard specifies the basic method and requirements for design, construction, testing and marking of non-electrical equipment intended for use in potentially explosive atmospheres in air of gas, vapour, mist and dusts. Such atmospheres can also exist inside the equipment. In addition, the external atmosphere can be drawn inside the equipment by natural breathing produced as a result of fluctuations in the equipment's internal operating pressure, and/or temperature.

This European Standard is valid for atmospheres having pressures ranging from 0,8 bar to 1,1 bar and temperatures ranging from - 20 °C to + 60 °C., i.e. equipment built to this European Standard will be satisfactory to any service conditions within this range unless otherwise specified.

NOTE 1 The requirements of this European Standard can also be helpful for the design, construction, testing and marking of equipment intended for use in atmospheres outside the validity range stated above. In this case however, the ignition hazard assessment, ignition protection provided, additional testing (if necessary), manufacturer's technical documentation and instructions to the user, should clearly demonstrate and indicate the equipment's suitability for the conditions it may encounter. It should also be recognized that changes in temperature and pressure can have a significant influence on ignitability.

This European Standard does not cover additional marking for equipment intended for use outside the scope of its validity such as an oxygen-enriched atmosphere.

This European Standard is also applicable for the design, construction, testing and marking of components, protective systems, devices and assemblies of these products which have possible ignition sources and are intended for use in potentially explosive atmospheres.

It specifies the requirements for the design and construction of equipment, intended for use in potentially explosive atmospheres in conformity with all categories of Group I and II. This European Standard can be supplemented by European Standards concerning the specific types of ignition protection.

NOTE 2 These are given below:

EN 13463-2,	Non-electrical equipment for use in potentially explosive atmospheres – Protection by flow restricting enclosure (fr)
EN 13463-3,	Non-electrical equipment for use in potentially explosive atmospheres – Protection by flameproof enclosure (d)
EN 13463-5,	Non-electrical equipment for use in potentially explosive atmospheres – Protection by constructional safety (c)
EN 13463-6,	Non-electrical equipment for use in potentially explosive atmospheres – Protection by control of ignition sources (b)
EN 60079-2,	Electrical apparatus for explosive gas atmospheres – Pressurised enclosures "p" (Protection by pressurization described in EN 60079-2 can also be used for non-electrical equipment.)
EN 13463-8,	Non-electrical equipment for use in potentially explosive atmospheres – Protection by liquid immersion (k)
EN 50303,	Group I, category M1 equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust.

NOTE 3 Equipment designed and constructed in accordance with this European Standard for a particular category may be used in areas requiring a category with a higher level of safety by the application of additional explosion prevention and/or protection methods. Such applications are not covered in this standard.

NOTE 4 Such explosion prevention and/or protection measures include for example inerting, suppression, venting or containment as described in EN 1127-1, for Group II equipment or for example by dilution, drainage, monitoring and shut-down as described in EN 1127-2 for Group I equipment. Such explosion protection methods are outside the scope of this European Standard.