National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 50284:1999

ICS 29.260.20

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SPECIAL REQUIREMENTS FOR CONSTRUCTION, TEST AND MARKING OF ELECTRICAL APPARATUS OF EQUIPMENT GROUP 11, CATEGORY 1 G

This Irish Standard was published under the authority of the National Standards Authority of Ireland and comes into effect on December 24, 1999

Price Code G

Údarás um Chaighdeáin Náisiúnta na hÉireann

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 50284

April 1999

ICS 29.260.20

English version

Special requirements for construction, test and marking of electrical apparatus of equipment group II, Category 1 G

Exigences spéciales pour la construction, l'essai et le marquage des matériels électriques des appareils du groupe II, catégorie 1 G

Spezielle Anforderungen an Konstruktion, Prüfung und Kennzeichnung elektrischer Betriebsmittel der Gerätegruppe II, Kategorie 1 G

This European Standard was approved by CENELEC on 1998-10-01. CENELEC 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 Central Secretariat or to any CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Ref. No. EN 50284:1999 E

Foreword

This European Standard has been prepared by the Technical Committee CENELEC TC 31, Electrical apparatus for explosive atmospheres.

This standard has been prepared for electrical apparatus of equipment group II, Category 1 G under the mandate of the European Commission and EFTA. This apparatus is described in Annex 1, clause 2 a) of the European Directive 94/9/EC, concerning equipment and protective systems, which are intended for use in potentially explosive atmospheres.

The equipment of Category 1 G is intended for use in areas, in which explosive atmospheres caused by mixtures of air and gases, vapours or mists are present continuously, for long periods or frequently. The Directive contains requirements for this equipment, which can be used in accordance with the operational parameters stated by the manufacturer and which ensures a very high level of safety with respect to explosion protection. This equipment must be designed and constructed in such a way, that sources of ignition do not occur even in the event of rare or two independent faults related to the equipment.

Observing the requirements of this standard the applicable Essential Safety Requirements of Annex 2 clause 2.1.1 of the Directive are covered.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50284 on 1998-10-01.

The following dates have been fixed:

- latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	1999-11-01
- latest date by which national standards conflicting with the EN have to be withdrawn	(dow)	2003-06-30

This European Standard is to be read in conjunction with EN 50014:1997 and the related European Standards for specific types of protection listed in the scope of this standard. It does not apply in conjunction with the first or second editions of those standards and their amendments published before 1997.

Contents

1 Scope

This European Standard specifies the particular requirements for construction, testing and marking of electrical apparatus of equipment group II, conformity Category 1 G as defined in EN 50014:1997. Such apparatus comprises equipment designed to be capable of functioning in conformity with the operational parameters established by the manufacturer and ensuring a very high level of protection.

Category 1 G apparatus is intended for use in hazardous areas, in which potentially explosive atmospheres caused by mixtures of air and gases, vapours or mists under normal atmospheric conditions (temperature = -20 °C to +60 °C, pressure = 0,8 bar to 1,1 bar) are present continuously, for long periods or frequently. This standard also applies to apparatus mounted across the boundary between hazardous and less hazardous areas where Category 1 and Category 2 equipment may normally be installed, respectively, for example in the wall of a storage vessel. This standard also makes provision for apparatus installed outside the hazardous area, but electrically connected to apparatus of Category 1 within the hazardous area (associated apparatus).

This standard supplements the requirements of EN 50014 to EN 50020 and EN 50028 to adapt the level of safety provided by those standards to the very high level of risk.

NOTE: In designing apparatus for operation in a potentially explosive atmosphere under conditions other than the atmospheric conditions given above, this standard may be used as a guide. However, additional testing is recommended related specifically to the intended conditions of use. This is particularly important when the types of protection "Flameproof enclosure" (EN 50018) and "Intrinsic safety" (EN 50020) are applied.

2 Normative references

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

EN 1127-1		Explosive atmospheres - Explosion prevention and protection Part 1: Basic concepts and methodology
EN 50014	1997	Electrical apparatus for potentially explosive atmospheres General requirements
EN 50015		Electrical apparatus for potentially explosive atmospheres Oil immersion "o"
EN 50016		Electrical apparatus for potentially explosive atmosphere Pressurized apparatus "p"
EN 50017		Electrical apparatus for potentially explosive atmospheres Powder filling "q"
EN 50018		Electrical apparatus for potentially explosive atmospheres Flameproof enclosure "d"