



National Standards Authority of Ireland

IRISH STANDARD

**I.S. EN 1834-2:2000**

ICS 13.230  
27.020

**RECIPROCATING INTERNAL COMBUSTION  
ENGINES - SAFETY REQUIREMENTS FOR  
DESIGN AND CONSTRUCTION OF ENGINES  
FOR USE IN POTENTIALLY EXPLOSIVE  
ATMOSPHERES - PART 2: GROUP 1 ENGINES  
FOR USE IN UNDERGROUND WORKINGS  
SUSCEPTIBLE TO FIREDAMP AND/OR  
COMBUSTIBLE DUST**

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EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

**EN 1834-2**

January 2000

ICS 13.230; 27.020

English version

**Reciprocating internal combustion engines - Safety  
requirements for design and construction of engines for use in  
potentially explosive atmospheres - Part 2: Group I engines for  
use in underground workings susceptible to firedamp and/or  
combustible dust**

Moteurs alternatifs à combustion interne - Prescriptions de  
sécurité pour la conception et la construction des moteurs  
fonctionnant en atmosphère explosible - Partie 2: Moteurs  
du groupe I utilisés dans des travaux souterrains dans des  
atmosphères grisouteuses avec ou sans poussières  
inflammables

Hubkolben-Verbrennungsmotoren -  
Sicherheitsanforderungen für die Konstruktion und den Bau  
von Motoren zur Verwendung in explosionsgefährdeten  
Bereichen - Teil 2: Motoren der Gruppe I zur Verwendung  
in untertägigen Bergwerken, die durch Grubengas und/oder  
brennbare Stäube gefährdet werden können

This European Standard was approved by CEN on 8 July 1999.

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 Central Secretariat or to any CEN 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 CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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



EUROPEAN COMMITTEE FOR STANDARDIZATION  
COMITÉ EUROPÉEN DE NORMALISATION  
EUROPÄISCHES KOMITEE FÜR NORMUNG

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## Foreword

This European Standard has been prepared by Technical Committee CEN/TC 270 "Internal combustion engines", 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 2000, and conflicting national standards shall be withdrawn at the latest by July 2000.

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

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

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

Normative and informative annexes to this standard are indicated in the contents list. General Safety requirements for Internal Combustion Engines are given in EN 1679-1:1998.

## 0 Introduction

This European standard has been prepared to be a harmonised standard to provide one means of conforming with the essential safety requirements of the Machinery (98/37/EEC) and ATEX (94/9/EEC) Directives and associated EFTA regulations.

This European Standard is a type C standard as defined in EN 292:1991.

The extent to which hazards are covered is indicated in the scope of this standard. In addition, machinery shall comply as appropriate with parts 1 and 2 of EN 292:1991 for hazards which are not covered by this standard.

The requirements of this standard apply to designers, manufacturers, suppliers and importers of reciprocating internal combustion engines.

This standard also contains the information to be provided by the manufacturer of reciprocating internal combustion engines to the user.

## 1 Scope

This European standard specifies the safety requirements and/or measures to remove the hazards and limit the risks on reciprocating internal combustion compression ignition engines of group I category M 2 for use in underground workings susceptible to firedamp and/or combustible dust hereinafter referred to as engines.

The standard does not define requirements relating to the driven machinery. These requirements can be found in the appropriate application standard.

This standard does not apply to engines of category M 1 which require special considerations. This standard does not apply to engines used in premises for the processing, manufacture or storage of explosives.

The safety requirements for engines for use in flammable gas and vapour atmospheres are given in EN 1834-1:2000.

The safety requirements for engines for use in explosive atmospheres with combustible dust are given in EN 1834-3:2000.

This standard does not apply to spark ignition engines.

The hazards applicable are listed in 4 and relate to the additional hazards of operation in an atmosphere that may become explosive. The tests which the engine and its ancillary fittings are required to undergo to verify compliance with this specification are detailed in this standard. General safety requirements i.e. those common to all the RIC engines, are covered in EN 1679-1:1998.

This European standard is applicable to engines which are manufactured after the date of issue of this standard.

## 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.

EN 292-1	1991	Safety of machinery - Basic concepts, general principles for design - Part 1: Basic terminology, methodology
EN 292-2:1991/+A1:1995		Safety of machinery - Basic concepts, general principles for design - Part 2: Technical principles and specifications
EN 1050	1996	Safety of machinery – Principles for risk assessment
EN 1127-1	1997	Explosive atmospheres – Explosion, prevention and protection – Part 1: Basic concepts and methodology
EN 1679-1	1998	Reciprocating internal combustion engines - Safety - Part 1: Compression ignition engines
EN 1834-1	2000	Reciprocating internal combustion engines - Safety requirements for design and construction of engines for use in potentially explosive atmospheres - Part 1: Group II engines for use in flammable gas and vapour atmospheres
EN 1834-3	2000	Reciprocating internal combustion engines - Safety requirements for design and construction of engines for use in potentially explosive atmospheres - Part 3: Group II engines for use in flammable dust atmospheres
EN 50014	1997	Electrical apparatus for potentially explosive atmospheres – General requirements
EN 50015	1994	Electrical apparatus for potentially explosive atmospheres – Oil immersion "o"

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