

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Explosive atmospheres –

Part 37: Non-electrical equipment for explosive atmospheres – Non electrical type of protection constructional safety “c”, control of ignition source “b”, liquid immersion “k”

Atmosphères explosives –

Partie 37: Appareils non électriques destinés à être utilisés en atmosphères explosives – Mode de protection non électrique par sécurité de construction “c”, par contrôle de la source d'inflammation “b”, par immersion dans un liquide “k”



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INTERNATIONAL ELECTROTECHNICAL COMMISSION

EXPLOSIVE ATMOSPHERES –

**Part 37: Non-electrical equipment for explosive atmospheres –
Non electrical type of protection constructional safety “c”,
control of ignition source “b”, liquid immersion “k”**

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International Standard ISO 80079-37 has been prepared by IEC sub-committee 31M: Non-electrical equipment and protective systems for explosive atmospheres, of IEC 31: Equipment for explosive atmospheres.

The text of this standard is based on the following documents of the IEC:

FDIS	Report on voting
31M/104/FDIS	31M/110/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table. In ISO, the standard has been approved by 15 P members out of 20 having cast a vote.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

"A list of all parts in the IEC 60079 series, under the general title *Explosive atmospheres*, as well as the International Standard 80079 series, can be found on the IEC website."

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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EXPLOSIVE ATMOSPHERES –

Part 37: Non-electrical equipment for explosive atmospheres – Non electrical type of protection constructional safety “c”, control of ignition source “b”, liquid immersion “k”

1 Scope

This part of ISO/IEC 80079 specifies the requirements for the design and construction of non-electrical equipment, intended for use in explosive atmospheres, protected by the types of protection constructional safety “c”, control of ignition source “b” and liquid immersion “k”.

This part of ISO/IEC 80079 supplements and modifies the requirements in ISO 80079-36. Where a requirement of this standard conflicts with the requirement of ISO 80079-36 the requirement of this standard takes precedence.

Types of Protection “c”, “k” and “b” are not applicable for Group I, EPL Ma without additional protective precautions.

The types of ignition protection described in the standard can be used either on their own or in combination with each other to meet the requirements for equipment of Group I, Group II, and Group III depending on the ignition hazard assessment in ISO 80079-36.

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.

IEC 60079-0, *Explosive atmospheres – Part 0: Equipment – General requirements*

IEC TS 60079-32-1, *Explosive atmospheres – Part 32-1: Electrostatic hazards, Guidance*

IEC 60529, *Degrees of protection provided by enclosures (IP Code)*

ISO 281, *Rolling bearings – Dynamic load ratings and rating life*

ISO 1813, *Belt drives – V-ribbed belts, joined V-belts and V-belts including wide section belts and hexagonal belts – Electrical conductivity of antistatic belts: Characteristics and methods of test*

ISO 9563, *Belt drives – Electrical conductivity of antistatic endless synchronous belts – Characteristics and test method*

ISO 4413, *Hydraulic fluid power – General rules and safety requirements for systems and their components*

ISO 4414, *Pneumatic fluid power – General rules and safety requirements for systems and their components*

ISO 19353, *Safety of machinery – Fire prevention and protection*

ISO 80079-36: 2016, *Explosive atmospheres – Non-electrical equipment for explosive atmospheres – Part 1: Basic method and requirements*¹

EN 13237, *Potentially explosive atmospheres – Terms and definitions for equipment and protective systems intended for use in potentially explosive atmospheres*

EN 13501-1, *Fire classification of construction products and building elements – Part 1: Classification using data from reaction to fire tests*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 80079-36, IEC 60079-0 and the following apply.

3.1

constructional safety “c”

ignition protection where constructional measures are applied so as to protect against the possibility of ignition from hot surfaces, sparks and adiabatic compression generated by moving parts

3.2

mechanically generated sparks

sparks produced by mechanical impact or friction burning particles, as well as showers of particles, produced by impact or friction between two solid materials

3.3

control of ignition source “b”

ignition protection where mechanical or electrical devices are used in conjunction with non-electrical equipment to manually or automatically reduce the likelihood of a potential ignition source from becoming an effective ignition source

Note 1 to entry: This might for example be a level sensor used to indicate loss of oil, a temperature sensor to indicate a hot bearing or a speed sensor to indicate over-speed.

3.3.1

automatic control measure

action taken without manual intervention, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

3.3.2

manual control measure

action taken by a person as a result of a warning, indication, or alarm, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

3.3.3

ignition prevention devices/systems

arrangement that converts signals from one or more sensors into an action, or indication, to reduce the likelihood of a potential ignition source from becoming an effective ignition source

¹ To be published.