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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC  
OF CHINA

# 中华人民共和国国家标准

GB 3836.15-2000

eqv IEC 60079-14: 1996

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**Electrical apparatus for explosive gas atmospheres—Part 15:  
Electrical installations in hazardous areas (other than mines)**

**爆炸性气体环境用电气设备**

**第 15 部分：危险场所电气安装  
(煤矿除外)**

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## Preface

This Standard is a compulsory national standard.

It adopts in equivalent the IEC60079-14:1996, *Electrical Apparatus for Explosive Gas Atmospheres—Part 14: Electrical Installations in Hazardous Areas (other than mines)*.

In accordance with Chinese regulations for the use of international standard, any inconsistency with IEC60079-14 shall be given a note for explanation.

The main difference between This Standard and IEC60079-14 is that: compared with IEC60079-14:1996, this Standard, based on the practice and specific situations of China in the past years, puts forward a more strict limitation on the types of safety-increasing “e” electrical installations selected for Zone 1, and the allowable surface temperature for common or simple electrical apparatus without explosion-proof inspection selected for Zone 2 so as to ensure the safety use of electrical installations in explosive hazardous areas.

GB 3836 “*Electrical Apparatus for Explosive Gas Atmospheres*” consists of many individual standards, such as:

- GB3836.1—2000 Electrical Apparatus for Explosive Gas Atmospheres  
-Part 1: General Requirements (eqv IEC60079-0: 1998)
- GB3836.2—2000 Electrical Apparatus for Explosive Gas Atmospheres  
-Part 2: Structure and Test of Explosion-Proof Enclosure of Electrical Apparatus (eqv IEC 60079-1:1990)
- GB3836.3—2000 Electrical Apparatus for Explosive Gas Atmospheres  
-Part 3: Safety-increasing Type “e” ( eqv IEC 60079-7:1990)
- GB3836.4—2000 Electrical Apparatus for Explosive Gas Atmospheres  
-Part 4: Intrinsic-Safety Type “i” (eqv IEC60079-11: 1999)
- GB3836.14—2000 Electrical Apparatus for Explosive Gas Atmospheres  
-Part 14: Classification of Hazardous Areas (idt IEC60079-10: 1995)
- GB3836.15—2000 Electrical Apparatus for Explosive Gas Atmospheres  
-Part 15: Electrical Installations in Hazardous Areas (other than mines)  
(eqv IEC60079-14:1996)

Appendix A is the appendix to This Standard, Appendix B to the prompt of This Standard.

This Standard proposed by the State Machinery Bureau is placed under the management of

the National Standardization Technical Committee of Explosion-proof Electrical Apparatus. It is prepared jointly by Nanyang Research Institute for Explosion-Proof Electrical Apparatus, China Huanqiu Chemical Engineering Corp., Tianjing Chemical Research Institute under the Ministry of Chemical Industry, Sinopec Beijing Design Institute, Shenyang Electrical Transmission Research Institute and Zhejiang Nibo Zhenghai Refinery Co., etc., with the participation of Li Hede, Liu Hanyu, Xugang, Jiang Gongwang, Zhengqi, Wangjun and Shen Xunpeng.

This Standard will be initially issued in the year 2000.

The National Standardization Technical Committee of Explosion-proof Electrical Apparatus is responsible for the concrete explanation thereof.

## IEC Preface

- 1) The International Electrotechnical Commission (IEC), the leading organization for international standards, is composed of various IEC National Committees. The IEC aims at promoting international cooperation on all questions of standardization in the Electrotechnical field, for which IEC publishes international standards in addition to other activities. The formulation of standards is entrusted to the individual technical committee, with the participation of any IEC National Committee who is interested in such subject and the organizations in relation with IEC, international, governmental or non-governmental. At the terms as agreed upon between the two organizations, IEC keeps in close cooperation with the International Standardization Organization (ISO).
- 2) Any IEC official resolution with regard to technical issues is prepared by the technical committee, with the participation of the representative from the IEC National Committee interested in such subject. Therefore, the resolution and protocol for such subject represents, to the maximum extent, the consistent comments internationally.
- 3) As recommended internationally, such resolution and protocol are generally issued in the form of standard, technical report or guideline and accepted in this sense by IEC National Committee.
- 4) In order to promote the unification of standards worldwide, IEC National Committee agrees to adopt IEC international standard to the maximum extent as allowed by the national and regional standard. Any unconformity between IEC standard and the respective national or regional standard shall be given a clarification in the latter's text.
- 5) IEC has no provision for the approval procedure of a standard. IEC will not bear any responsibility for any declaration of the conformity of equipment with certain international standard.
- 6) It is noticeable that some contents of this Standard may come down to patent right and that IEC will not bear any responsibility for the equation in part or in whole.

IEC60079-14 is prepared by the subcommittee 31J in charge of "Classification of Hazardous Areas and Installation Requirements", which is under the IEC Technical Committee 31 "Electrical Apparatus for Explosive Atmospheres".

This edition II replaces edition I published in 1984 and is revised technically.

This Standard is based on:

FDIS	Voting Report
31J/47/FDIS	31J/50/RVD

All the results about the voting approval of this Standard are indicated in the Voting Report as listed above. This Standard shall be used in connection with the standard of special explosion-proof types as stated in IEC60079-0.

Appendix A is an indivisible part of this Standard.

Appendix B is attached only for information.

## **IEC Introduction**

When electrical apparatus is installed in the areas where flammable gas, vapor, fog, fibre or dust exists to an extent dangerous in concentration and quantity, proper precautions shall be taken to reduce the possibility of explosion due to ignition by electrical arc, spark or hot surface during normal operation or the specified failure.

This part of IEC60079 is a supplement to other relevant IEC standards. For example, IEC60364 with regard to the requirements of electrical installations also refers to IEC60079-0 as well as the relevant standards on the structure, test and mark requirement etc. of electrical apparatus.

Due to a delicate design of electrical installations, it is likely to have most of electrical apparatus installed in an area with less or without hazard.

Explosion relies on the co-existence of explosive atmosphere and ignition source. Provided with protective measures, the possibility of electrical installations becoming as ignition source can be reduced to an acceptable level. It is practicable to have zone division for the hazardous areas in accordance with the possibility of existence of explosive gas atmospheres (see IEC60079-10). Such kind of zone division defines a suitable explosion-proof type for each area.

At present, the explosion-proof types as specified for electrical apparatus in hazardous areas are suitable (see IEC60079-1). This Standard defines the specific requirements for the design, selection and erection of electrical installations in explosive gas atmospheres.

This Standard is based on the proper erection, test, maintenance and usage of electrical apparatus pursuant to its technical specifications.

Whatever dimension in any industrial installation, there are many ignition sources in addition to electrical apparatus, for which proper precautions are required to ensure safety. The relevant guideline is not included in this Standard.

中华人民共和国国家标准  
**National Standard of the People's Republic of China**

爆炸性气体环境用电气设备 GB

3836.15-2000

第 15 部分：危险场所电气安装 eqv IEC 60079-14：1996  
(煤矿除外)

**Electrical apparatus for explosive gas atmospheres—**

**Part 15: Electrical installations in hazardous areas**

**(other than mines)**

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### **1. Scope**

This Standard defines the specific requirements for the design, selection and mounting of electrical installations in explosive gas atmospheres. These requirements are complementary to the requirements for electrical installations in non-hazardous areas.

This Standard applies to all electrical equipment and installations in hazardous areas whether permanent, temporary, movable, transportable or hand-held.

This Standard does not apply to:

— electrical installations under the shaft of mines;

Note: This standard may apply to electrical installations under the shaft of mines with other explosive gas other than firedamp and electrical installations on the ground of mines.

— electrical installations in areas where the hazard is due to combustible dusts or fibres;

— inherently explosive situations, for example explosive manufacturing and processing;

— room used for medical purpose.

### **2. Cited Standards**

The provisions contained in the following standards are cited as the provisions of this Standard. All the shown editions shall be deemed as valid when this Standard is published.



The following standards are subject to revision, so the parties adopting this Standard shall explore the possibility of using the following updated edition.

- GB/T 2900.35—1998     Electrotechnical terms for Electrical Apparatus  
                          In Explosive Atmospheres (neq IEC60050(426):1990)
- GB3836.1—2000        Electrical Apparatus for Explosive Atmospheres  
                          — Part 1: General Requirements (eqv IEC60079-0:1998)
- GB3836.2—2000        Electrical Apparatus for Explosive Gas Atmospheres  
                          — Part 2: Structure and Test of Explosion-Proof Enclosure of  
                          Electrical Apparatus (eqv IEC 60079-1:1990)
- GB3836.3—2000        Electrical Apparatus for Explosive Gas Atmospheres  
                          — Part 3: Safety-increasing Type “e” (eqv IEC 60079-7:1990)
- GB3836.4—2000        Electrical Apparatus for Explosive Gas Atmospheres  
                          — Part 4: Intrinsic-Safety Type “i” (eqv IEC60079-11: 1999)
- GB3836.14—2000       Electrical Apparatus for Explosive Gas Atmospheres  
                          — Part 14: Classification of Hazardous Areas (idt IEC60079-10:  
                          1995)
- GB4208—1993          Enclosure Protective Grade (IP code) (eqv IEC60529;1989)
- GB/T 14823.1—1993     Specific Requirements for Conduits of Electrical Installations-  
                          Metal Conduit (eqv IEC60614-2-1:1982)
- GB/T 4942.1—1985     Enclosure Protective Grade of Motor (neq IEC60034-5: 1981)
- GB6829—1995          General Requirements for Residual Current Action Protector  
                          ( eqv IEC60755:1983)
- GB/T 12666.2—1990    Wires & Cables Combustion Test Methods   Part 2: Single Wire  
                          & Cable Vertical Combustion Test Method (eqv IEC60332-1:  
                          1979)
- GB13028-1991          Technical Requirements for Isolation Transformer And Safety  
                          Isolation Transformer (eqv IEC 60742:1983)
- GB/T16927.1—1997     High-Voltage Test Technology --Part 1: General Test  
                          Requirements (eqv IEC 60060-1:1989)
- IEC 60079-2:1983       Electrical Apparatus for Explosive Gas Atmospheres  
                          Part 2: Positive-pressure Type “p”
- IEC 60079-5:1997       Electrical Apparatus for Explosive Gas Atmospheres  
                          Part 5: Powder filling “q”



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