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GB 50058-2014

**Code for design of electrical installations in
explosive atmospheres**

爆炸危险环境电力装置设计规范

Issued on January 29, 2014

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Issued by Ministry of Housing and Urban-Rural Development of the
People's Republic of China

General Administration of Quality Supervision, Inspection
and Quarantine of the People's Republic of China

Code for design of electrical installations in explosive atmospheres

Announcement of Ministry of Housing and Urban-Rural Development of the People's Republic of China

No. 319

Announcement of Ministry of Housing and Urban-Rural Development on Issuing National Standard “Code for Design of Electrical Installations in Explosive Atmospheres”

Now approve “Code for Design of Electrical Installations in Explosive Atmospheres” as national standard, which is numbered GB 50058—2014 and will be implemented from October 1, 2014. Article (clause) 5.2.2(1) and 5. 5. 1 are mandatory provisions and must be strictly enforced. The original “Code for Design of Electrical Installations in Explosive and Fire Atmospheres” GB 50058—92 is repealed simultaneously.

This Code is published and distributed by China Planning Press, which is organized by China Ministry of Housing and Urban-Rural Development Standard Rating Research Institute.

**Ministry of Housing and Urban-Rural Development of
the People's Republic of China**

January 29, 2014

Foreword

The Code is revised by China Huanqiu Contracting & Engineering Corporation jointly with the units concerned according to “Notice on the Issuance of ‘Engineering Construction National Standard Formulation and Revision Plan in 2004’ ” (Jian Biao〔2004〕No. 67).

Main revision contents of the Code include general provisions, explosive gas atmosphere, classification of hazardous areas, selection of equipments, etc, The main revisions are as follows:

1. Revision on name of the Code, i.e. changing “Code for Design of Electrical Installations in Explosive and Fire Atmospheres and ” to “Code for Design of Electrical Installations in Explosive Atmospheres”.
2. Changing “Glossary” to “Terms”; making some revision and including in the main body;
3. Deleting Chapter IV “Fire Hazard”;
4. Deleting example drawing from the main body of original Code; changing to appendix and increasing some content;
5. Increasing the provisions on use of increased-safety equipments in zone 1;
6. Classification of explosive dust hazardous area is changed from original two kinds of zones of “zone 10 and zone 11” to three kinds of zones of “zone 20, zone 21 and zone 22”;
7. Increasing grouping of explosive dust: group IIIA, IIIB and III;
8. Consolidating “Electrical Installations in Explosive Gas Atmosphere” and “Electrical Installations Explosive Dust Atmosphere in ” into chapter 5 “Electrical Installations in Explosive Atmosphere”.
9. Increasing the concept of “Equipment Protection Level”;
10. Increasing types of optical radiation equipment and transmission system explosion-proof structure.

In the revision process, The Code group conducted extensive research, seriously summed up the experiences since implementation of the Code, used relevant national standards and relevant standards in developed industrial countries for reference, extensively asked for opinions of relevant units all over the country, discussed and

coordinated the major issues for many times and finalized it by review. The Code deletes the contents on environment of fire risk in original code; implement other specialized design codes for electrical design for fire atmosphere.

This Code is divided into 5 chapters and 5 appendixes; main contents include general provisions, terms, explosive gas atmosphere, explosive dust atmosphere, design of electrical installations in explosive atmosphere, etc.

Provisions of this Code in bold are mandatory and must be strictly enforced.

This Code is under the management of Department of Housing and Urban-Rural Development that is responsible for interpretation of mandatory provisions; China Association for Engineering Construction Standardization Chemical Branch is responsible for daily management; China Huanqiu Contracting & Engineering Corporation is responsible for interpretation of specific technical contents. In case of any necessary modification or supplement during implementation process of the Code, please send comments, suggestions and relevant information to China Huanqiu Contracting & Engineering Corporation (address: No.7 Yinghuayuan East Street, Chaoyang District, Beijing Postal code: 100029) for reference in future revisions.

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1 General provisions

1.0.1 In order to standardize the design of electrical installations in explosive atmosphere, make electrical installations in explosive atmosphere follow the policies of prevention first, guarantee the personal and property safety and take preventive measures according to circumstances, this Code is hereby developed.

1.0.2 This Code applies to the classification of explosive hazardous areas of new, expanded and reconstructed projects where explosive hazardous environment emerges or may emerge during production, processing, handling, transshipment and storage process as well as design of electrical installations.

The Code does not apply to the following environments:

- 1 Underground mine;
- 2 Environments of manufacturing, using or storing gunpowder, dynamite and producing detonating powder, fuses, initiating explosive devices, etc.;
- 3 Areas of electrolysis, electroplating and other electrical installations where electric energy is used for production and directly associated with technological process of production;
- 4 Environment where strong oxidant is used or fire breaks out voluntarily without external ignition source;
- 5 Water, land and air transportation means and marine and land oil well platforms;
- 6 Pipeline system that is used for heating, air conditioning, cooking and laundry with flavored natural gas as fuel or similar pipeline system;
- 7 Inside medical room;
- 8 Catastrophic accidents.

1.0.3 This Code does not consider the effect of indirect harm on classification of explosive hazardous area and design of related electrical installations.

1.0.4 Classification of explosive hazardous area shall be negotiated to complete jointly by professional personnel who are in charge of production technology processing media properties, equipment and processing properties and engineering technical personnel who are in charge of safety and electrical engineering.



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