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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

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**Code for construction and acceptance of electric device for
explosion atmospheres and fire hazard electrical equipment
installation engineering
(English Translation)**

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1 General

1.0.1

This specification is formulated to ensure the construction and installation quality of electrical installations in explosion and fire hazardous environments, promote the progress of construction and installation technology, ensure the safe operation of equipment in explosion and fire hazardous environments, and ensure the safety of the country and people's lives and property.

1.0.2

This specification is applicable to the construction and acceptance of electrical installations in environments where gases, vapors, dust, explosive mixtures of fibers and fire-hazardous substances appear or may appear during production, processing, handling, transshipment or storage.

1.0.3

This specification does not apply to the construction and acceptance of electrical installations in the following environments.

- 1 Underground mine;
- 2 The environment for the manufacture, use and storage of gunpowder, explosives, primers,

fuzes and the production of pyrotechnics;

3 Areas of electrical devices such as electrolysis and electroplating that use electric energy for production and are directly related to the production process;

4 The environment where strong oxidants are used and substances that can ignite by themselves without an external ignition source;

5 Water, land and air transportation vehicles and offshore and land oil well platforms;

6 Nuclear islands of nuclear power plants;

7 Heating, air conditioning, cooking, laundry and similar plumbing systems fueled by flavored natural gas;

8 medical room;

9 catastrophic accident.

1.0.4

The construction and acceptance of electrical installations in explosive and fire-hazardous environments shall not only comply with this code, but also comply with the current relevant national standards.

2.0.1 Explosive atmosphere explosive atmosphere

Under atmospheric conditions, the mixture of flammable substances in the form of gas, vapor, dust, mist, fibers or flying flocs and air, after being ignited, can maintain the environment in which the combustion propagates itself.

2.0.2 Explosive dust atmosphere explosive dust atmosphere

Under atmospheric conditions, the mixture of combustible substances in the form of dust, fibers or flying flocs and air, after being ignited, can maintain an environment in which combustion spreads by itself.

2.0.3 Explosive gas atmosphere explosive gas atmosphere

Under atmospheric conditions, the mixture of flammable substances in the form of gas or vapor and air, after being ignited, can maintain the environment in which the combustion propagates itself.

2.0.4 Hazardous area

An area where explosive mixtures are present or are expected to be present in quantities sufficient to require precautionary measures for the construction, installation and use of electrical equipment.

2.0.5 Zone 0 zone 0

Environments where explosive gas mixtures are present continuously or for a long period of time.

2.0.6 Zone 1 zone 1

Environments where explosive gas mixtures may be present during normal operation.

2.0.7 Zone 2 zone 2

An environment in which explosive gas mixtures are unlikely to occur during normal operation, or where explosive gas mixtures exist only for a short period of time if they occur.

2.0.8 Zone 20 zone 20

Combustible dust clouds in the air are continuously or chronically or frequently present in areas with explosive atmospheres.

2.0.9 Zone 21 zone 21

During normal operation, airborne combustible dust clouds are likely to occasionally occur in areas of explosive atmospheres.

2.0.10 Zone 22 zone 22

During normal operation, combustible dust clouds in the air are generally unlikely to appear in areas with explosive dust atmospheres, and even if they do, the duration is short.

2.0.11 Explosion-proof type type of protection

Various specific measures are taken for electrical equipment to prevent ignition of surrounding explosive atmospheres.

2.0.12 Intrinsic safety type "i" intrinsic safety "i"

A type of explosion protection that limits exposure to electrical energy inside equipment and interconnecting wires in an explosive gas atmosphere to below that which could cause ignition by sparks or thermal effects.

2.0.13 Intrinsically safe circuit intrinsically-safe circuit

Under normal operation and specified fault conditions, any electric spark or any thermal effect generated cannot ignite the circuit in the specified explosive gas atmosphere.

2.0.14 Intrinsically safe electrical equipment intrinsically-safe electrical apparatus

All internal circuits are electrical equipment with intrinsically safe circuits.

2.0.15 Associated electrical equipment associated electrical apparatus

Electrical equipment equipped with intrinsically safe circuits and non-intrinsically safe circuits, and constructed so that non-intrinsically safe circuits cannot adversely affect intrinsically safe circuits.

2.0.16 Positive pressure shell type "P" pressurization "P"

An explosion-proof type that prevents the entry of external explosive gases by maintaining the pressure of the protective gas inside the enclosure or in the room higher than the external atmospheric pressure.

2.0.17 Oil immersion type "o" oil immersion "o"

A type of explosion protection in which electrical equipment or components of electrical equipment are immersed in a protective liquid so that the equipment cannot ignite explosive gases on the liquid surface or outside the enclosure.

2.0.18 "n" type electrical equipment type of protection "n" an explosion-proof type, the explosion-proof type of electrical equipment, in normal operation and under some abnormal conditions specified in this part, can not ignite the surrounding explosive gas.

2.0.19 Flameproof enclosure "d" flameproof enclosure "d"

An explosion-proof type of electrical equipment, the shell of which can withstand the internal explosion of the explosive mixture entering the shell through any joint surface or structural gap without damage, and will not cause an explosive explosion formed by one or more gases or vapors outside. Ignition of gaseous atmospheres.

2.0.20 Increased safety type "e" increased safety "e"

An explosion-proof type of electrical equipment, that is, some additional measures are taken for electrical equipment to improve its safety and prevent the possibility of dangerous temperatures, arcs and sparks under normal operation or specified abnormal conditions.

Note: 1 This form of protection is denoted by "e", and additional measures are those that comply with the requirements of this standard.

2 The definition of increased safety "e" does not include equipment that produces sparks or arcs under normal operating conditions.