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

GB 12476.1-2013

**Electrical apparatus for use in the presence of combustible
dust -- Part 1: General requirements**
(English Translation)

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Foreword

All the technical contents in this Part are mandatory.

GB 12476 consists of the following parts under the general title Electrical Apparatus for Use in the Presence of Combustible Dust.

- Part 1.General Requirements;
- Part 2.Selection and Installation;
- Part 3.Classification of Areas where Combustible Dusts are or May be Present;
- Part 4.Protection by Intrinsic Safety "iD";
- Part 5.Protection by Enclosures "tD";
- Part 6.Protection by Encapsulation "mD";
- Part 7.Type of Protection "pD";

--- Part 8. Test Methods - Methods for Determining the Minimum Ignition

Temperature of Dust;

--- Part 9. Test Methods - Methods for Determining the Electrical Resistivity of Dust in Layers;

--- Part 10. Test Methods - Methods for Determining Minimum Ignition Energy of Dust/Air Mixtures.

This Part is Part 1 of GB 12476.

This Part was drafted as per the rules specified in GB/T 1.1-2009.

This Part uses re-drafting method to modify and adopt IEC 61241-0:2004 Electrical Apparatus for Use in the Presence of Combustible Dust - Part 0. General Requirements (English Edition I). However, this Part is not the modification in a full meaning of GB 12476.1-2000. The major technical contents of GB 12476.1-2000 are replaced by GB 12476.5-2013 Electrical Apparatus for Use in the Presence of Combustible Dust - Part 5. Protection by Enclosures "tD".

Technically, this Part has the following technical differences and causes with IEC 61241-0:2004.

--- Taking into account the difference BETWEEN the type approval of the inspection and certification of explosion-proof electrical equipment in China AND the IEC international standard (there is no provision on the approval procedure), the type approval procedure for explosion-proof electrical equipment in China is the explosion-proof certification system. Therefore, the inspection procedure for obtaining the explosion-proof certificate has been added to any Clause on manufacturer's responsibility, see Appendix A.

This Part was proposed by China Electrical Equipment Industrial Association.

This Part shall be under the jurisdiction of National Technical Committee for Standardization of Explosion Protected Electrical Apparatus (SAC/TC 9).

Drafting organizations of this Part. Nanyang Explosion Protected Electrical Apparatus Research Institute; and China National Quality Supervision and Test Center for

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The historical edition replaced by this Standard is as follows.

--- GB 12476.1-2000.

1 Scope

This Part of GB 12476 specifies general requirements for the design, construction, testing and marking of electrical apparatus protected by any recognized safeguard technique for use in areas where combustible dust may be present in quantities that could lead to a fire or explosion hazard.

2 Normative References

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including all the amendments) are applicable to this document.

GB/T 70.1-2008 Hexagon Socket Head Cap Screws (ISO 4762.2004, MOD)

GB/T 1040.2-2006 Plastics - Determination of Tensile Properties - Part 2. Test

Conditions for Molding and Extrusion Plastics (ISO 527-2.1993, IDT)

3 Terms and Definitions

For the purposes of this Part, the following terms and definitions apply.

Dust, fibers or flying that can burn or glow in air and could form explosive mixtures with air at atmospheric pressure and normal temperatures.

Mixture with air, under atmospheric conditions, of flammable substances in the form of dust, fibers or flying in which, after ignition, combustion spreads throughout the unconsumed mixture.

4 Construction

Electrical apparatus for use in potentially explosive dust atmospheres shall comply with the requirements of this standard.

Enclosures for use in Zone 20 or 21 which can be opened more quickly than the time necessary.

5 Temperatures

For electrical apparatus, the maximum surface temperature shall be specified in relevant documentation according to 23.2.

In addition to the maximum surface temperature required in 5.1, the maximum surface temperature may be stated for a given depth of layer, TL, of dust surrounding all sides of the apparatus, unless otherwise specified in the documentation, and marked according to 29.2.1h).

6 Enclosure Materials

The following requirements apply to non-metallic enclosures and non-metallic parts of enclosures on which the type of protection depends.

Materials used in the construction of enclosures of electrical apparatus to be used in explosive dust atmospheres shall not contain, by weight, more than 7.5 % in total of magnesium and titanium.

Threaded holes in enclosures for fasteners which secure covers intended to be opened in service for adjustment, inspection and other operational reasons may only be tapped in the material of the enclosure when the thread form is compatible with the material used for the enclosure.