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

GB/T 12476.3-2017

Replacing GB 12476.3-2007

**Electrical apparatus for use in the presence of combustible
dust -- Part 3: Classification of areas where combustible dusts
are or may be present**

可燃性粉尘环境用电气设备 第3部分：存在或可能存在可燃性粉尘的场所分类
(English Translation)

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Foreword

"Combustible dust environment with electrical equipment" is divided into several parts.

- Part 1. General requirements;
- Part 2. Selection and installation;

- Part 3. Classification of dangerous places where flammable dust is or may be present;
- Part 4. Intrinsically safe "iD";
- Part 5. Enclosure protection "tD";
- Part 6. Encapsulation protection "mD";
- Part 7. Positive pressure protection "pD";
- Part 8. Test methods to determine the minimum dust ignition temperature method;
- Part 9. Test methods Determination of resistivity of dust layer;
- Part 10. Test methods Determination of minimum ignition energy of dust and air mixture.

This section is "Part 3 of Electrical Equipment for Combustible Dust Environment".

This section drafted in accordance with GB/T 1.1-2009 given rules.

This Part replaces GB 12476.3-2007 "Electrical apparatus for combustible dust environment Part 3. Existence or possible presence of flammability Dust classification of places. " this section compared with GB 12476.3-2007, the main technical changes are as follows.

- Clear the dust caused by the danger (see 4.1);
- Introduced dust classification (see 3.7, 3.8, 3.9);
- Introduced the concept of "Equipment Protection Level (EPL)" (see Appendix D);
- The area extending beyond Zone 21 extends from 1 m to 3 m (see 6.3.4, version 6.4.3 of 2007).

This section uses the redrafted law Amendment uses IEC 60079-10-2:2009 "Explosive Environment Part 10-2. Location Classification Combustible Sexual dust environment. " this part of IEC 60079-10-2:2009 technical differences and the reasons are as follows.

--- On the normative references, this section made a technical difference with the adjustment to the application of China's technical conditions, adjust the situation Concentration reflected in the second chapter "Normative references", the specific adjustments are as follows.

- Increased reference to GB 12476.1-2013 (see Chapter 3), ISO/IEC 80079-20-2 (see 4.2);
- Replacing IEC 60079-0 with revision GB 3836.1-2010 of international standards.

This section made the following editorial changes.

- Modify the standard name;
- Modify Note 4 to 4 "Additional information for EPLs is given in Appendix D.20 Zone Equivalent to Da Class Equipments, Zone 21 Equivalent to Db-class equipment, 22-zone

equipment equivalent to Dc-class equipment. " this part is proposed by China Electrical Equipment Industry Association.

This part of the National Standardization Technical Committee explosion-proof electrical equipment (SAC/TC9) centralized.

This part of the drafting unit. Nanyang explosion-proof electrical Institute, the national explosion-proof electrical product quality supervision and inspection center, the new Dawn Technology shares Limited, Huarong Technology Co., Ltd.

Introduction

Dusts as defined in this section are dangerous because when they are dispersed in the air in any way, they create a potentially explosive atmosphere.

In addition, the dust layer can spontaneous combustion and become a source of ignition of the explosive environment.

This section gives guidance on the identification and classification of dangerous places caused by combustible dust, the ignition can be identified as the danger Develop basic guidelines and give guidance on design and control parameters to reduce these risks. This section gives general and specific guidelines, Use with some examples to determine the steps to categorize places.

As an informative annex, Appendix A of this section gives an example of the classification of places.

Electrical equipment for combustible dust environment Part 3. There is or may exist
Location of combustible dust classification

1 Scope

This section provides for the presence of explosive dust environment and the possible occurrence of flammable dust layer identification and site classification, in order to appear the ignition sources at these locations are properly assessed.

In this section, the explosive dust environment and flammable dust layer treated differently. Chapter 4 describes the location of explosive dust clouds While the dust layer is one of the possible sources of release. Chapter 7 describes the ignition hazard of dust layers.

This section to take the factory clean up to prevent the accumulation of dust layer based on the effective site clean-up. If you do not conduct effective on-site cleanup, the field the classification will include explosive dust clouds that the dust layer may form.

For flammable fibers or flammable fly may cause dangerous places, but also follow the principles of this section.

This section applies to normal atmospheric conditions, due to explosive dust environment or combustible dust layer may cause the existence of dangerous place.

This section does not apply to.

- coal mine place;
- Exotic mixture exists dangerous place;
- Do not need the oxygen in the atmosphere burning explosives or spontaneous combustion of substances;
- Exceeded the abnormal catastrophe involved in this section (see Note 1);
- With the dust emitted flammable gas or toxic gas hazards.

This section does not consider the impact following a fire or explosion damage.

Note 1: The "catastrophic accident" described above applies to, for example, the rupture of storage silos or pneumatic conveyors.

Note 2: Regardless of the size of any plant, there may be a large number of sources of ignition other than the ignition sources associated with the equipment. In this regard, the need to take appropriate when precautionary measures to ensure safety, but these precautions are not within the scope of this section.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB 3836.1-2010 Explosive atmospheres - Part 1. General requirements for equipment (IEC 60079-0:2007, MOD) GB 12476.1-2013 electrical equipment for combustible dust environment Part 1. General requirements (IEC 61241-0:2004, MOD) ISO/IEC 80079-20-2 Explosive atmospheres - Part 20-2. Material properties - Explosiveat-mospheres-Part 20-2. Materialcharacteristics-Combustibleduststestmethods)

3 Terms and definitions

GB 3836.1-2010 and GB 12476.1-2013 defined by the following terms and definitions apply to this document.

NOTE Other terms and definitions applicable to explosive atmospheres See GB/T 2900.35-2008.