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PEOPLE'S REPUBLIC OF CHINA**

GB 12476.8-2010

**Electrical apparatus for use in the presence of combustible
dust -- Part 8: Test methods -- Methods for determining the
minimum ignition temperatures of dust**

可燃性粉尘环境用电气设备 第8部分： 试验方法 确定粉尘最低点燃温度的方法
(English Translation)

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Foreword

All technical content in this section is mandatory.

GB 12476 "combustible dust electrical equipment" is divided into several parts.

--- Part 1. General requirements

--- Part 2. Selection and installation

--- Part 3. combustible dusts exist or may exist Classification of hazardous areas

--- Part 4. Intrinsic safety "iD"

--- Part 5. Housing protection type "tD"

--- Part 6. protective encapsulation "mD"

--- Part 7. protective positive pressure "pD"

--- Part 8. Test methods for determining the minimum ignition temperature of a dust

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Part of this section is GB 812 476, equivalent using IEC 61241-2-1:1994 "combustible dust Electrical apparatus Part 2. Test methods - Section 1. determining the minimum ignition temperature of a dust "(in English).

This part of IEC 61241-2-1:1994 includes the following editorial changes.

--- Remove the IEC 61241-2-1:1994 Foreword;

--- Increase the national standard foreword.

This section of the Appendices A and B are normative appendix.

This part is proposed by the China Electrical Equipment Industrial Association.

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

This part mainly drafted by. Explosion Protection Electric Institute.

This part of the main participants. National explosion-proof electrical products for Quality Supervision and Inspection Center blast Electric Co., Ltd., Fushun Coal Research Institute Shun Branch.

Introduction

GB 12476 of the provisions of this section for determining the minimum ignition temperature of a dust.

--- Method A. constant dust layer on the heated surface (Chapter 4);

--- Method B. when the dust cloud thermostatic oven (Chapter 5).

A method of determining the minimum on the heated surface dust layer ignition temperature.

Method B is determined by a predetermined constant temperature heating furnace dust cloud minimum ignition temperature.

Test method is versatile, it can be used for comparison, however, in some industrial applications may require further testing.

Determining the minimum ignition temperature of the method is not applicable Explosives recognized, for example, black powder, dynamite or a possible under certain circumstances A mixture of similar characteristics.

If you suspect an explosion characteristics of danger may be a small amount of dust into the device above the surface temperature to 400 °C or higher to get the index, the test should be away from the operator.

Combustible dust Electrical Equipment Part 8. Test methods Determining the minimum ignition temperature of a dust

1 Scope

This part of GB 12476 specifies two test methods for determining the minimum ignition temperature of the dust of.

This method does not apply to a substance having Explosives properties.

Method A (Chapter 4) adapted to determine the cause will be deposited on the surface of the heat regulations requiring minimum decomposition temperature of the dust layer thickness and/or points Minimum ignition temperature. The process is particularly suitable for surfaces exposed to the hot environment of industrial equipment with a thin layer of dust present in the form of dust.

Method B (Chapter 5) adapted to determine the lowest temperature of the dust cloud will lead to a predetermined sample or other solid particles in the sample ignited. The test Test as an additional test in the present section A method of determining the minimum after the dust layer ignition temperature.

B Note on methodology.

Note 1: Since the method of operation of the thermostatic oven dust particles determines the short residence time in the furnace, the test method is applicable to short-term dust to dust cloud exists Industrial Equipment. This test method is small, its results are not necessarily representative of all industrial conditions.

Note 2: This method is not used in this test method over time may be specified in the decomposition from high temperature or dust accumulated gas formed during the formation of smoldering.

2 Normative references

The following documents contain provisions which, through reference in this Part of GB 12476, constitute provisions of this part. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 6005-2008 Test sieves - Metal wire cloth, perforated plate and electroformed sheet - basic mesh size (ISO 565.

1990, MOD)

GB/T 6919 Air quality vocabulary (GB/T 6919-1986, eqvISO 4225. 1980)

3 Terms and Definitions

GB 12476 This section uses the following terms and definitions.

Dust dust

In the air can settle down on its own weight, but also sustainable solid fine particles suspended in air for a period of time (including GB/T 6919 defined dust and particles).

Ignite the dust layer ignitionofadustlayer If the material began flameless combustion or flaming, or during the test measured temperature of 450 °C or more, or a temperature

higher than a predetermined heat Surface temperature of 250K or higher, shall be deemed ignition occurs.

The minimum ignition temperature of a dust layer minimumignitiontemperatureofadustlayer
Minimum ignition temperature of the hot surface of the predetermined thickness of the dust layer occurs on hot surfaces.

Note 1: Since the process in the range of wider industrial processes, the dust layer may depend on local conditions for ignition. This test method is not necessarily representative of all Industrial conditions, there may need to consider some of the dust layer thickness, and environmental factors such as temperature distribution exists.

Note 2: during the test, to take the necessary health precautions to protect workers, such as prevention of fire, explosion, inhalation of smoke and toxic combustion properties Health hazards.

Dust cloud ignited ignitionofadustcloud the initial energy of the explosion into the air dust cloud metastasis.

Dust cloud ignition temperature ignitiontemperatureofadustcloud the lowest temperature in the furnace air contained in the inner wall of the furnace occurred when the dust cloud ignited.

Note: during the trial, to take the necessary health precautions to protect workers, such as prevention of fire, explosion, inhalation of smoke and toxic combustion properties Health hazards.

4.1 Preparation of dust samples

After preparation of the samples should be aimed at the uniform representative dust used in the test.

Typically, dust samples were tested to be able to woven wire mesh screen through a nominal size of 200µm aperture or hole center square hole test sieve (attached Plus size, see GB/T 6005). If necessary, through a nominal pore size are tested for the coarse dust test sieve of 500µm the report should explain the actual situation.

Sieve dust or temperature or moisture content of any significant changes in dust related properties during sample preparation, such as the use of the test shall be reported Report explained.

4.2 Test device

It is shown in Figure A.1 test device, its main characteristics and performance requirements given in detail in the following sub-clauses. To meet this the method of making these requirements are specified in Appendix A.