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

GB 5959.13-2008

**Safety in electroheat installations - Part 13: particular
requirements for electroheat installation with explosive
atmosphere**

电热装置的安全 第13部分: 对具有爆炸性气氛的电热装置的特殊要求

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Foreword

In addition to all the technical chapter 16 outside of this section is mandatory. GB 5959 "electric safety device" has the following 13 sections.

- Part 1. General requirements;
- Part 2. Particular requirements for arc furnace apparatus;
- Part 3. Particular requirements for induction and conduction heating and induction melting apparatus means;
- Part 4. Particular requirements for resistance heating equipment;
- Part 4.1. resistance heating devices
- for the special requirements of heating and melting glass equipment; Safety rules for plasma apparatus;.
- Part 6. Industrial microwave heating equipment safety regulations;
- Part 7. A device having an electron gun of special requirements;
- Part 8. Particular requirements for electroslog remelting furnaces;
- Part 9. Particular requirements for high-frequency dielectric heating apparatus;

- Part 10. Resistance to industrial and commercial heating systems profiling specific requirements;
- Part 11. for liquid metal electromagnetic stirring, transport or pouring of the special requirements of the device;
- Part 13. Electric apparatus for explosive atmosphere of special requirements. This is Part 13 GB 5959's. In addition to this section, the rest of the GB 5959 are used IEC 60519 "Safety of electric devices" each part of the development of corresponding. This part is proposed by the China Electrical Equipment Industrial Association. This part of the National Electric Equipment Industry Standardization Technical Committee centralized. This section drafted by: Institute of Xi'an furnace, Eagle Furnace Co., Ltd. Zhuzhou. The main drafters of this section. Fanchao Ying, Yang Zhigang. This section first formulated. Safety - Part 13 electric means. having Particular requirements for electric apparatus for explosive atmosphere

1 Scope

GB 5959.13-2008 is the Chinese national standard on safety in electroheat installations - part 13: particular requirements for electroheat installation with explosive atmosphere, in the field of manufacturing engineering. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 20 May 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 April 2009. Classification: ICS 25.180.10, CCS K60. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This section provides for an electric apparatus having an explosive atmosphere and the special requirements relating to personal safety devices. This section applies to an electric device having an explosive atmosphere, such as the work by flammable or explosive solution infiltration after paint drying, curing and drying Furnaces and other similar products. This section does not apply to protective atmosphere or controlled atmosphere electric devices. This section should be used in conjunction with GB 5959.1.

2 Normative references

The following documents contain provisions which, through reference in this Part of GB 5959 constitute provisions of this section. For dated references, All subsequent amendments (not including errata content) or revisions do not apply to this section, however, encourage the agreement on this section Whether the parties can study the latest

versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 2900.23-1995 Electrotechnical terminology Industrial Heating Equipment (neq IEC 60050-841. 1983)

GB 3836.1-2000 Electrical equipment for explosive gas atmospheres - Part 1. General requirements (idt IEC 60079-0:1998)

GB 3836.13-1997 Electrical apparatus for explosive gas atmospheres - Part 13. check for explosive gas atmospheres electrical equipment Repair (neq IEC 60079-19:1993)

GB 3836.14-2000 Classification of hazardous areas (idt IEC 60079-10:1995)

GB 3836.15-2000 explosive gas atmospheres Electrical Equipment Part 15. Electrical installations in hazardous locations (eqv IEC 60079-14:1996)

GB 5959.1-2005 Safety of electric devices - Part 1. General requirements (IEC 60519-1:2003, IDT)

GB 50058-1992 explosion and fire hazard electrical installation design specifications

3 Terms and Definitions

GB/T 2900.23-1995 GB 5959.1-2005 and well established in the following terms and definitions apply to this section.

3.1 Due to chemical changes in the formation of a sharp rise in pressure phenomena. Combustible gas in the sealed space, the total area of the instantaneous combustion.

3.2 Under atmospheric conditions of flammable substances in the gas or vapor and air mixture formation, combustion will spread rapidly after ignition, explosion may occur Fried atmosphere.

3.3 Explosive atmosphere is the lowest temperature of ignition under specified conditions.

3.4 One kind of flammable gas or vapor and air mixture can range explosion occurred. Combustible gas contains a concentration of the air or Steam encounter sparks will make the spread of fire explosion, known as the minimum concentration of the lower explosive limit, the highest concentration is called the explosion limit. Inflammability If the concentration of gas or vapor above or below this range will not explode.

3.5 The amount of solvent into the workpiece in the furnace.

4 voltage electric apparatus according to sector classification

According to Chapter 4 GB 5959.1-2005 safety requirements for specific provisions.

5 electric apparatus by category frequency zone

Chapters 5 and according to GB 5959.1-2005 safety requirements for specific provisions.

6 General requirements

In addition to these supplements, but according to GB 5959.1-2005 Chapters 6 and safety requirements for specific provisions.

6.1.1 Furnace Design

6.1.1.1 furnace chamber to avoid the possibility of local overheating generation. It should be equipped with temperature indicator (display), temperature control, over-temperature Control instruments. Design

6.1.1.2 furnace shell and the workpiece transport mechanism, should ensure that the device does not occur during normal operation due to local friction, collisions Fire.

6.1.1.3 When using the conveyor chain workpiece, with a low flash point mechanical lubricant.

6.1.1.4 Place the furnace should be set to be processed workpiece mounting bracket.

6.1.1.5 Fixation, furnace shell and the insulation layer must be non-flammable material.

6.1.2 Heating element

6.1.2.1 The heating element should have sufficient strength, such as the use of frangible heating element, should guard against mechanical damage caused by fire And electric shock.

6.1.2.2 The heating element surface temperature should not exceed the workpiece release flammable and explosive gas ignition temperature of 80%.

6.1.2.3 resistive heating elements tubular heating elements should be used to prevent fire caused by burning. Tubular heating element jacket should be airtight , And is made of a material resistant to oxidation at operating temperature.

6.1.2.4 Setting the heating elements should be considered flammable surface of the workpiece, explosive solution should not drip on the heating element surface.

6.1.3 Air circulation and ventilation safety

6.1.3.1 Ventilation systems should not be used for natural ventilation, air circulation system should be set up to provide sufficient air to the furnace the furnace chamber flammable, Does not produce explosive gases accumulate ensure flammable, explosive gases highest volume concentration should not exceed 25% of the lower explosive limit.

6.1.3.2 vent should be set at the highest area of flammable, explosive gas concentrations.