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

GB/T 3836.7-2017

**Explosive atmospheres -- Part 7: Equipment protection by
powder filling 'q'
(English Translation)**

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Foreword

The Explosive Environment is divided into several parts.

- Part 1. General requirements for equipment;
- Part 2. Equipment protected by flameproof enclosure "d";
- Part 3. Equipment protected by an increased safety "e";
- Part 4. Equipment protected by intrinsically safe "i";
- Part 5. Equipment protected by a positive pressure enclosure "p";
- Part 6. Equipment protected by liquid immersion "o";
- Part 7. Equipment protected by sand-filled "q";
- Part 8. Equipment protected by the "n" type;
- Part 9. Equipment protected by the encapsulated type "m";
- Part 11. Test methods and data for the classification of gas and vapour properties;
- Part 13. Repair, overhaul, repair and modification of equipment;
- Part 14. Location classification of explosive atmospheres;

- Part 15. Design, selection and installation of electrical installations;
- Part 16. Inspection and maintenance of electrical installations;
- Part 17. Structure and use of positive pressure rooms or buildings;
- Part 18. Intrinsically safe electrical systems;
- Part 19. Fieldbus Intrinsic Safety Concept (FISCO);
- Part 20. Equipment with an Equipment Protection Level (EPL) of Class Ga;
- Part 21. Application of equipment production quality system;
- Part 22. Protection measures for optical radiation equipment and transmission systems;
- Part 23. Class I EPLMa class equipment for use in gas and/or coal dust environments;
- Part 24. Equipment protected by special type "s";

This section is part 7 of the Explosive Environment.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB 3836.7-2004 "Electrical Equipment for Explosive Gas Environments Part 7. Sand Filling Type "q"", and GB 3836.7-Compared with 2004, the main technical changes are as follows.

- The rated voltage of the applicable equipment is modified from less than 1000V to less than or equal to 1140V (see Chapter 1, 2004 edition) Chapter 1);
- Added the definition of "box" to avoid confusion with the "shell" of GB 3836.1 (see 3.3);
- Increased the requirement to allow the use of reduced distance when there is no adjacent gap in the cabinet (see 4.3.1);
- Increased requirements for external connectors (see 4.4);
- Removed the requirements for cable entry devices (see 4.5 of the 2004 edition);
- Increased requirements for batteries and battery packs (see 4.6);
- Increased the exception conditions for equipment protected by fuses (see 4.8.2);
- Insulation fault, the sum of the maximum voltage RMS of the two circuits is modified from no more than 1000V to no more than 1140V (see 4.8.3, 4.8.1 of the 2004 edition);
- Added the requirement to use the creepage distance of GB 3836.3 when CTI is greater than 175 (see 4.8.3);
- Increased the evaluation of the joint surface when using the reduced distance of Table 1 (see 5.1.1);
- Added instructions for determining the maximum temperature relative to overload and

fault (see 5.1.4);

--- Increased batch testing (see 5.2.1);

--- Added requirements for the instruction manual (see Chapter 7).

This section uses the redrafting method to modify the use of IEC 60079-5:2015 "Explosive environment part 5. protected by sand-filled type "q" device".

The technical differences between this part and IEC 60079-5:2015 and their reasons are as follows.

---About the normative reference documents, this part has made technical adjustments to apply to China's technical conditions, adjustments the situation is reflected in Chapter 2, "Regulatory References", and the specific adjustments are as follows.

- Replace ISO 2859-1 with GB/T 2828.1, replace IEC 60079-0 with GB 3836.1, and replace with GB 3836.3 IEC 60079-7, replace IEC 60079-11 with GB 3836.4, replace IEC 60529 with GB/T 4208, use GB/T 6003.1 replaces ISO 3310-1, replaces ISO 3310-2 with GB/T 6003.2, and replaces with GB/T 19212.1 IEC 61558-1, replacing IEC 61558-2-6 with GB/T 19212.7;

- Replace IEC 60127 (all parts) with GB/T 9364 (all parts), the consistency procedure between the two parts the degree is as follows.

- GB/T 9364.1-2015 miniature fuses - Part 1. General definitions for miniature fuses and miniature fuses Seeking (IEC 60127-1:2006, MOD);

GB/T 9364.2-1997 Miniature fuses - Part 2. Tubular fuses (IEC 60127-2:1989, IDT);

GB/T 9364.3-1997 Miniature fuses - Part 3. Ultra-small fuses (IEC 60127-3:1988, IDT);

- GB/T 9364.4-2016 Miniature fuses - Part 4. General modular fuse-links (UMF) Surface mount type (IEC 60127-4:2012, MOD);

GB/T 9364.5-2011 - Part 5. Guidelines for quality assessment of small fuses (IEC 60127-5:1988, IDT);

- GB/T 9364.6-2001 miniature fuses - part 6. fuse holders for small tubular fuses (IEC 60127-6:1994, IDT);

- GB/T 9364.7-2016 Miniature fuses - Part 7. Small fuses for special applications (IEC 60127-7.

2013, MOD);

- GB/T 9364.10-2013 Miniature fuses - Part 10. User guide (IEC 60127-10:2001, MOD).

--- Modify the rated voltage of the applicable equipment in the range from less than or equal to 1000V to less than or equal to 1140V, and 4.8.3 the voltage in the medium insulation

fault is modified accordingly to meet the actual situation of China's coal mines.

This section has made the following editorial changes.

---Modified standard name;

--- Note 1 and Table 2 are combined with footnotes.

This part was proposed by China Electrical Equipment Industry Association.

This part is under the jurisdiction of the National Technical Committee for Standardization of Explosion-proof Electrical Equipment (SAC/TC9).

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1 Scope

This part of the "Explosive Environment" specifies electrical equipment and electrical equipment components protected by sand-filled "q" for use in explosive atmospheres.

And the special requirements of the structure, test and marking of the Ex component.

Note 1: Electrical equipment and Ex components protected by sand-filled "q" may include. electronic circuits, sensors, protective fuses, relays, intrinsically safe electrical equipment Equipment, associated electrical equipment, switches, etc.

Note 2: The sand filling type "q" forms the equipment protection level (EPL) Gb or Mb.

This part is based on the general requirements of GB 3836.1, and has been added and supplemented.

This section applies to electrical equipment, electrical equipment components and Ex components that meet the following conditions.

--- rated current is less than or equal to 16A;

---Rated voltage is less than or equal to 1140V;

--- rated power is less than or equal to 1000W.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.