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Explosive atmospheres - Part 34: Equipment assemblies

爆炸性环境 第 34 部分：成套设备

(IEC TS 60079-46:2017, Explosive atmospheres - Part 46: Equipment
assemblies, MOD)

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Foreword

This document is drafted in accordance with GB/T 1.1-2020 "Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents".

This document is Part 34 of GB/T 3836 "Explosive atmospheres". GB/T 3836 has issued the following parts:

- Part 1: Equipment - General requirements;
- Part 2: Equipment protection by flameproof enclosures "d";
- Part 3: Equipment protection by increased safety "e";
- Part 4: Equipment protection by intrinsic safety "i";
- Part 5: Equipment protection by pressurized enclosure "p";
- Part 6: Equipment protection by liquid immersion "o";
- Part 7: Equipment protection by powder filling "q";
- Part 8: Equipment protection by type of protection "n";
- Part 9: Equipment protection by encapsulation "m";
- Part 11: Material characteristics for gas and vapour classification - Test methods and data;
- Part 12: Material characteristics for combustible dusts - Test methods;
- Part 13: Equipment repair, overhaul, reclamation and modification;
- Part 14: Classification of areas - Explosive gas atmosphere;
- Part 15: Electrical installations design, selection and erection;
- Part 16: Electrical installations inspection and maintenance;
- Part 17: Equipment protection by pressurized room "p" and artificially ventilated room "v";
- Part 18: Intrinsically safe electrical systems;
- Part 20: Equipment with equipment protection level (EPL) Ga;
- Part 21: Application of quality systems for equipment manufacture;

- Part 22: Protection of equipment and transmission system using optical radiation;
- Part 23: Group I, category EPL equipment intended to remain functional in atmospheres endangered by firedamp and/or coal dust;
- Part 24: Equipment protection by special protection “s”;
- Part 25: Requirements for process sealing between flammable process fluids and electrical systems;
- Part 26: Electrostatic hazards - Guidance;
- Part 27: Electrostatic hazards - Test;
- Part 28: Non-electrical equipment for explosive atmospheres - Basic method and requirements;
- Part 29: Non-electrical equipment for explosive atmospheres - Constructional safety “c”, control of ignition source “b”, liquid immersion “k”;
- Part 30: Equipment and components in explosive atmospheres in underground mines;
- Part 31: Equipment dust ignition protection by enclosure “t”;
- Part 32: Intrinsically safe systems with electronically controlled spark duration limitation;
- Part 33: Equipment in adverse service conditions;
- Part 34: Equipment assemblies;
- Part 35: Classification of areas for explosive dust atmospheres.

This document uses the redraft law to modify and adopt IEC TS 60079-46:2017 “Explosive atmospheres - Part 46: Equipment assemblies”.

The technical differences between this document and IEC TS 60079-46:2017 and their reasons are as follows:

- As for the normative references, this document has made adjustments with technical differences, to adapt to the technical conditions of China. The adjustments are mainly reflected in Clause 2 “Normative references”. The specific adjustments are as follows:
 - Replace IEC 60079-0 with GB/T 3836.1 which modifies and adopts the international standard (see Clause 1, etc.);

- Replace IEC 60079-10-1 with GB 3836.14 which is identical to the international standard (see 4.3.2);
- Replace IEC 60079-14 with GB/T 3836.15 which modifies and adopts the international standard (see Clause 3, etc.);
- Replace ISO/IEC 80079-34 with GB/T 3836.21 which modifies and adopts the international standard (see 4.4);
- Replace ISO 80079-36 with GB/T 3836.28 which modifies and adopts the international standard (see Clause 1, etc.);
- Replace IEC 60079-10-2 with GB/T 3836.35 which modifies and adopts the international standard (see 4.3.2);
- Replace IEC 60079 (all parts) and ISO 80079 (all parts) with GB/T 3836 (all parts). See Annex A for the degree of consistency between parts;
- Delete IEC 60079-25 and move the corresponding GB/T 3836.18 to Bibliography.

The following editorial changes have been made to this document:

- In order to be consistent with the existing standard series, change the name of this document to "Explosive atmospheres - Part 34: Equipment assemblies";
- Add Note 3 about the equipment assembly used in underground coal mines (see Clause 1);
- Add a note on 3.1 "Equipment assembly";
- Delete the note on 3.2 "Assembly certificate";
- Add a note about GB/T 2900.35 (see Clause 3);
- Add the Bibliography.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing authority of this document shall not be held responsible for identifying any or all such patent rights.

This document was proposed by China Electrical Equipment Industry Association.

This document shall be under the jurisdiction of National Technical Committee 9 on Explosion Protected Electrical Apparatus of Standardization Administration of China (SAC/TC 9).

Drafting organizations of this document: Nanyang Explosion Protected Electrical

Explosive atmospheres - Part 34: Equipment assemblies

1 Scope

This document specifies requirements for the design, construction, assembly, testing, inspection, marking, documenting and assessment of equipment assemblies for use in explosive atmospheres under the responsibility of the manufacturer of the equipment assembly.

The requirements of this document apply to individual items according to GB/T 3836 (all parts) that comprise the assembly and that have individual certificates. These individual items are then integrated as part of the equipment assembly. Also included are requirements to address aspects for the assembly which may be beyond the certificates of the individual items forming the assembly.

The scope of this document includes assessment of the additional requirements for assemblies for hazardous areas and does not include requirements for non-hazardous areas. It is assumed that compliance with other electrical or mechanical requirements that are applicable for non-hazardous areas will be verified by either the same or different party in addition to the requirements of this document.

This document does not apply to:

- equipment which is covered, in its entirety, by one or more GB/T 3836 equipment types of protection;
- pressurized rooms, “p”, in accordance with GB/T 3836.17, artificial ventilation for the protection of analyzer(s) houses in accordance with IEC TR 60079-16, and other standards addressing specific Ex assemblies;
- installation at the end-user site under the scope of GB/T 3836.15;
- classification of the hazardous area;
- inherently explosive situations and dust from explosives or pyrophoric substances (for example explosives manufacturing and processing);
- rooms used for medical purposes;
- electrical installations in areas where the hazard is due to flammable mist.

This document is only intended to provide validation for the initial supply of an assembly.

Note 1: Additional guidance on the requirements for hazardous atmospheres due to hybrid mixtures of flammable dust or flyings and flammable gas or vapour is provided in GB/T 3836.15.

Where a requirement of this document conflicts with a requirement of either GB/T 3836.1 or GB/T 3836.28, the requirement of this document takes precedence.

Note 2: The only requirements of this document that take precedence over GB/T 3836.1 and GB/T 3836.28 are the markings for equipment assemblies.

Note 3: This document does not consider the special circumstances of underground coal mines; but the equipment assembly for underground coal mines may refer to it for use.

2 Normative references

The contents of the following documents, through normative references in this text, constitute indispensable provisions of this document. Among them, for dated references, only the edition corresponding to that date applies to this document. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 3836 (all parts) Explosive atmospheres [IEC 60079 (all parts)]

GB/T 3836.1 Explosive atmospheres - Part 1: Equipment - General requirements (GB/T 3836.1-2021, IEC 60079-0:2017, MOD)

GB 3836.14 Explosive atmospheres - Part 14: Classification of areas - Explosive gas atmosphere (GB 3836.14-2014, IEC 60079-10-1:2008, IDT)

GB/T 3836.15 Explosive atmospheres - Part 15: Electrical installations design, selection and erection (GB/T 3836.15-2017, IEC 60079-14:2007, MOD)

GB/T 3836.21 Explosive atmospheres - Part 21: Application of quality systems for equipment manufacture (GB/T 3836.21-2017, ISO/IEC 80079-34:2011, MOD)

GB/T 3836.28 Explosive atmospheres - Part 28: Non-electrical equipment for explosive atmospheres - Basic method and requirements (GB/T 3836.28-2021, ISO 80079-36:2016, MOD)

GB/T 3836.35 Explosive atmospheres - Part 35: Classification of areas for explosive dust atmospheres (GB/T 3836.35-2021, IEC 60079-10-2:2015, MOD)

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 3836.1, GB/T 3836.15, and GB/T 3836.28 and the following apply.

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