



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

GB/T 3836.1-2021

**Explosive atmospheres - Part 1: Equipment - General
requirements**

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Foreword

This Document was drafted as per the rules specified in GB/T 1.1-2020 Directives for Standardization - Part 1.Rules for the Structure and Drafting of Standardizing Documents.

This Document is Part 1 of GB/T 3836 Explosive Atmospheres. GB/T 3836 has published the following parts.

- Part 1.Equipment - General Requirements;
- Part 2.Equipment Protection by Flameproof Enclosure "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 Ma 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 replaced GB 3836.1-2010 Explosive Atmospheres - Part 1.Equipment - General Requirement and GB 12476.1-2013 Electrical Apparatus for Use in the Presence of Combustible Dust - Part 1.General Requirements. Mainly based on GB 3836.1-2010, this Document integrates the major contents of GB 12476.1-2013; the major technical changes of this Document, except the structural adjustments and editorial modifications, are as follows.

- Integrate the requirements of equipment for combustible dust environment;
- Change the maximum surface temperature requirements of Group III electrical equipment (see 5.3.2.3 of this Edition; 5.3.2.3 of 2010 Edition);
- Increase the requirements for liner retention and the use of cement (see 6.5 of this Edition);
- Change the requirements of the ultrasonic source (see 6.6.3 of this Edition; 6.6.3 of 2010 Edition);
- Change the requirements for lasers, lamps or other non-divergent continuous wave light sources (see 6.6.4 of this Edition; 6.6.2 of 2010 Edition);
- Increase the replacement requirements of O-shaped elastic sealing ring (see

7.2.3 of this Edition);

- Change the electrostatic charge requirements on external non-metallic materials (see 7.4 of this Edition; 7.4 of 2010 Edition);
- Add the requirements for ancillary external metal parts (see 7.5 of this Edition);
- Increase the requirements for the use of copper alloys for the enclosure (see 8.5 of this Edition);
- Add the requirements of Ex component explosion-proof certificate (see 13.5 of this Edition);
- Add the requirements for cable entry devices, blanking elements, and threaded pipe joints (see 16.3~16.5 of this Edition);
- Change the supplementary requirements for rotating electrical machines (see Clause 17 of this Edition; Clause 17 of 2010 Edition);
- Change the supplementary requirements for plugs, sockets and connectors (see Clause 20 of this Edition; Clause 20 of 2010 Edition);
- Increase the types of single cells that can be used (see 23.3 of this Edition);
- Change the temperature measurement test (see 26.5.1 of this Edition; 26.5.1 of

2010 Edition);

- Change the heat resistance test (see 26.8 of this Edition; 26.8 of 2010 Edition);
- Change the ultraviolet (UV) resistance test (see 26.10 of this Edition; 26.10 of

2010 Edition);

- Delete the electrification test (see 26.14 of 2010 Edition);
- Change the capacitance measurement test (see 26.14 of this Edition; 26.15 of

2010 Edition);

- Increase fan rating verification (see 26.15 of this Edition);

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