

ICS 73.100.99
CCS D 98

MT

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

MT/T 661-2011

**General technical condition for electrical apparatus used
underground mine
(English Translation)**

Issued on: April 12, 2011

Implemented on: September 1, 2011

Issued by: State Administration of Production Safety

Table of Contents

Foreword...	3
1 Scope...	5
2 Normative references...	5
3 Classification...	7
4 General requirements...	7
5 Technical requirements...	9
6 Test methods...	27
7 Inspection...	30
8 Marking, packaging, transport and storage...	31

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This standard is a revision of MT/T 661-1997 "General technical condition for electrical apparatus used underground mine".

From the date of implementation of this standard, MT/T 661-1997 "General technical condition for electrical apparatus used underground mine" is abolished.

As compared with MT/T 661-1997, the main changes in this standard are as follows.

- DELETE the description on the normative references in the foreword (see the foreword of the 1997 version);
- DELETE the test requirements for transport (see 5.1.9 of the 1997 version);
- MODIFY the classification of electrical apparatus (see Appendix A; clause

3 of the 1997 version);

- ADJUST the structural layout as required for the insulation resistance value (see Table 11 and Table 12; Table A.1 of the 1997 version);
- MODIFY the provisions for the selection of electrical apparatus for

underground mine;

- MODIFY the electric clearance and creepage distances (see Table 3; Table

5 of the 1997 version);

- MODIFY the tracking resistance of insulating materials (see Table 4; Table

6 of the 1997 version);

- MODIFY the overload protection characteristics of the starter (see Table 17; Table 7 of 1997 version);

- MODIFY the rated lightning impulse withstanding voltage (see Table 8; Table 9 of the 1997 version);

- MODIFY the rated short-time power frequency withstanding voltage of high-voltage electrical apparatus (see Table 10; Table 11 of the 1997 version);

- ADD the color of the main circuit conductor as well as the arrangement of the phase sequence of the main circuit (see 5.2.16 and 5.2.17);

- ADD the performances of phase failure protection and leakage blocking protection (see Table 18 and Table 19).

General technical condition for electrical
apparatus used underground mine

1 Scope

This standard specifies the classification, technical requirements, test methods, inspection rules, marking, packaging, transportation and storage of electrical apparatus used underground mines.

This standard applies to electrical apparatus used underground mines (referred to as electrical apparatus).

2 Normative references

The following documents are essential to the application of this document. For the dated documents, only the versions with the dates indicated are applicable to this document; for the undated documents, only the latest version (including

all the amendments) are applicable to this standard.

GB/T 156 Standard voltages

GB/T 191 Packaging - Pictorial marking for handling of goods

GB 311.1 Insulation co-ordination for high voltage transmission and distribution equipment

GB/T 762 Standard current level

GB 1984 High-voltage alternating-current circuit-breakers

GB 1985 High-voltage alternating-current disconnectors and earthing switches

GB/T 2423.1 Environmental testing for electric and electronic and electronic products - Part 2. Test methods - Tests A. Cold

GB/T 2423.2 Environmental testing for electric and electronic products - Part

2 Test methods - Tests B. Dry heat

GB/T 3309 Mechanical test at ambient temperature for high-voltage switchgear

GB 3836.1-2000 Electrical apparatus for explosive gas atmospheres - Part

1 General requirements

GB 3836.2-2000 Electrical apparatus for explosive gas atmospheres - Part

2 Flameproof enclosure d

GB 3836.3 Electrical apparatus for explosive gas atmospheres - Part 3.

Increased safety e

GB 3836.4 Electrical apparatus for explosive gas atmospheres - Part 4.

Intrinsic safety i

GB/T 4026 Basic and safety principles for man-machine interface, marking and identification - Identification of equipment terminals and terminations of certain designated conductors, including general rules for an alphanumeric system

GB 4208 Degrees of protection provided by enclosure (IP code)

GB/T 4728 Graphical symbols for diagrams

GB/T 5094.1 Industrial systems, installations and equipment and industrial products - Structuring principles and reference designations - Part 1. Basic rules

GB/T 7159 General rules for the formulation of letter symbols in electrotechnology

GB/T 11022-1999 Common specifications for high-voltage switchgear and control-gear standards

GB/T 12173 Mining electrical apparatus for non-hazardous area

GB/T 13384 General specifications for packing of mechanical and electrical product

GB 14048.1-2006 Low-voltage switchgear and control-gear - Part 1. General rules

GB 14048.2 Low-voltage switchgear and control-gear - Part 2. Circuit-breakers

GB 14048.3 Low-voltage switchgear and control-gear - Part 3. Switches disconnectors switch-disconnectors and fuse-combination units

GB 14048.4-2003 Low-voltage switchgear and control-gear - Electromechanical contactors and motor-starters

GB/T 14808 High-voltage alternating current contactors and contactor-

4.7 Electrical apparatus is generally 8 h working system. The others are regulated by their respective product standards.

4.8 Electrical apparatus shall be equipped with the necessary spare parts, accessories, special tools and accompanied files. It shall be provided with two sets of important electronic plug-in, or one set of general electronic plug-in, to facilitate the use, management, maintenance of the user. The accompanied files shall include the product certificate, instructions for use, packing list.