

Translated English of Chinese Standard: MT451-2011

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MT

INDUSTRY STANDARD

OF THE PEOPLE'S REPUBLIC OF CHINA

MT 451-2011

Replacing MT 451-1995

**General specification for low voltage three phases
flameproof induction motor for coal mine**

**煤矿用隔爆型低压三相异步电动机
安全性能通用技术规范**

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Forward

All technical contents of this standard are compulsory.

This standard was drafted according to GB/T 1.1-2009 "Directives for standardization - Part 1: Structure and drafting of standards".

This standard is a revision to MT451-1995 "General Specification for Low Voltage Three Phases Flameproof Induction Motor for Coal Mine". Compared with MT 451-1995, the main changes are as follows:

- ADD English name for this standard;
- ADD GB/T 191-2008 and AQ 1043-2007 in Normative References (Chapter 2);
- ADD environmental conditions (Chapter 3);
- A range value is given to the length L of flameproof joint surface (Section 4.3.1 of this standard. Section 3.3.1 of 1995 version);
- CHANGE hydraulic pressure time from 1min to 10^{+2}_{-1} S (Section 4.2.2 of this standard. Section 3.2.2 of 1995 version);
- ADD that the flameproof surface roughness between axle and hole shall not exceed Ra3.2 μm (Section 4.3.3 of this standard. Section 3.3.3 of 1995 version);
- DELETE the content of entry-device's washers and baffles (Section 4.10.1 of this standard. Section 3.10.1 of 1995 version);
- CHANGE the flameproof parameter code of flameproof joint surface (Section 4.3.1 of this standard. Section 3.3.1 of 1995 version);
- ADD that no dripping and damage shall be caused while performing sealing test on entry-device (Section 4.10.3 of this standard. Section 3.10.3 of 1995 version);
- CHANGE the hardness of rubber seal material to IRHD 45~55 degree (Section 4.10.4 of this standard. Section 3.10.4 of 1995 version);
- ADD "inspection item name" in list of inspection items. And CHANGE the "full inspection" to "type inspection" (Table 7 of this standard. Table 7 of 1995 version);
- PROVIDE specific requirements of sampling cardinal number and sampling quantity in type inspection (Section 6.3.3 of this standard);
- The rated voltage and power were added in nameplate (Section 4.20.2 of this standard. Section 3.20.2 of 1995 version);
- ADD content related to packing, transport and storage (Chapter 7 of this standard).

This standard was proposed by the Department of Science & Technology Development of China National Coal Association.

This standard shall be under jurisdiction of the National Technical Committee on Coal Mine Safety of Standardization Administration of China.

Drafting organization of this standard: Shenyang Institute of China Coal Research Institute.

Drafting staffs of this standard: Wang Hui, Kiang Liying, and Feng Liguu.

This standard was issued on December 28, 1995 and revised in August 2009 for the first time.

Table of Contents

Forward.....	2
1 Scope	5
2 Normative References.....	5
3 Normal Operating Conditions of Motor	6
4 Safety Performance Requirements	6
5 Test Methods	12
6 Inspection Rules.....	13
7 Packing, Transport And Storage	15

General specification for low voltage three phases flameproof induction motor for coal mine

1 Scope

This standard specifies the safety performance requirements, test methods and inspection rules for low voltage three phases flameproof induction motor for coal mine.

This standard is applicable to motor used in coalmine shaft, rated voltage of 1140V and potential methane explosion (hereinafter referred to as motor).

2 Normative References

The following normative documents contain provision which, through reference in this text, constitute provisions of this standard. For dated reference, the subsequent amendments (excluding amending error in the text) or revisions of these publications do not apply. However, all parties reaching an agreement according to this standard are encouraged to study whether the latest edition of the normative document is applicable. For undated references, the latest edition of the normative document referred to applies.

- GB/T 191 Packaging-Pictorial Marking for Handling of Goods
- GB/T 228 Metallic materials - Tensile testing at ambient temperature
- GB 755 General Specifications for Rotary Electrical Machines
- GB/T 1032 Test Procedure for Three-phase Induction Motors
- GB/T 1410 Methods of Test for Volume Resistivity and Surface Resistivity of Solid Electrical Insulating Materials
- GB/T2423.4 Basic Environmental Testing Procedures for Electric and Electronic Products - Test Db: Damp Heat, Cyclic"
- GB 13813 Testing Method and Judging Rule of Safety to Friction Spark of Metallic Material for Coal Mine
- 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 3836.3-2000 Electrical Apparatus for Explosive Gas Atmospheres - Part 3: Increased Safety "e"
- GB/T 4942.1 Classification of Degrees of Protection Provided by Enclosures for Rotating Machines
- GB/T 10111 Generation of Random Numbers and Procedures Applied to

6.3.1 Type inspection shall be carried out when there is one of the following cases:

- a) Trial manufacture and type evaluation of new product or old product which is transferred production;
- b) After formal production, if there is significant changes such as structure, material and process which may affect the product performance;
- c) Every five years under normal production;
- d) The production is resumed after a suspension of 2 years;
- e) There is significant difference between the results of ex-factory inspection and last type inspection;
- f) Type inspection is required by the state quality supervision organization or the safety production supervision organization.

6.3.2 The items of type inspection shall comply with those specified in Table 7.

6.3.3 Sampling: according to GB/T 10111. The sampling cardinal number is 10 sets. The sampling quantity is at least 2 sets.

6.3.4 Judgment rule: If there is one sample-item failing to pass the inspection, then the batch of products will be judged as unqualified.

6.3.5 The products must be inspected by a quality supervision and inspection center for explosion-proof safety products designated by the State. And they shall not be manufactured until "explosion-proof certificate" and "coal mine safety sign" are obtained.

7 Packing, Transport And Storage

7.1 The motor shall be packed when leaving the factory. The outer wall of packing box shall have visible words and marks which include:

- a) Receiving organization and its address;
- b) Model and name of product;
- c) Size and total mass of packing box;
- d) Marks of "handle with care" and "keep dry" stated in GB/T 191;
- e) Name and address of manufacturer;
- f) Executive standard number of the product.

7.2 The documents accompanied with the products include:

- a) Packing list;
- b) Product certificate;
- c) Copy of safety sign certificate;
- d) Operating instructions.

7.3 The packing box shall not be intensely bumped and vibrated during transport. And it shall avoid the attack of rain and snow.

7.4 The motor shall be stored at a ventilated warehouse free of any rain and snow.

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