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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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GB/T 13343-2008

Replacing GB/T 13343-1992

Blast hole tricone rock bits

矿用三牙轮钻头

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**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China;**

**Standardization Administration of the People's Republic of
China.**

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Foreword

This Standard replaces GB/T 13343-1992 "Blast hole tricone rock bits".

Compared with GB/T 13343-1992, the main changes of this Standard are as follows:

- In the technical requirements, ADD the requirements for welding electrode, weld tensile strength and weld quality after the bit is assembled;
- Further STANDARDIZE the content of test methods and inspection rules;
- ADD the packaging requirements for bits;
- CANCEL the color requirements for protective paint.

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of National Technical Committee on Mining Machinery of Standardization Administration of China (SAC/TC 88).

Drafting organization of this Standard: Luoyang Mining Machinery Engineering Design and Research Institute Co., Ltd.

Main drafters of this Standard: Zhou Shengyong, Guo Ming, Yang Xianli, Wang Yadong, Huang Jialin.

The previous released version replaced by this Standard is as follows:

- GB/T 13343-1992.

Blast hole tricone rock bits

1 Scope

This Standard specifies the product classification, technical requirements, test methods, inspection rules and marking, packaging, transportation and storage of blast hole tricone rock bits.

This Standard is applicable to air-cooled and gas pressure deslagging tricone bits (hereinafter referred to as bits). The bit is mainly used for piercing blast hole in metallurgy, coal, chemical engineering, building materials, mining, etc.

2 Normative references

The following documents contain the provisions which, through reference in this Standard, become the provisions of this Standard. For dated references, their subsequent amendments (excluding corrigendum) or revisions do not apply to this Standard. However, the parties who enter into agreement based on this Standard are encouraged to investigate whether the latest versions of these documents are applicable. For undated reference documents, the latest versions apply to this Standard.

GB 150-1998 Steel pressure vessels

GB/T 2527 Hard metal (carbide) inserts for mining and oil-field rock bits

GB/T 9253.1-1999 Threads on rotary shouldered connections for petroleum industry

3 Terms and definitions

For the purpose of this Standard, the following terms and definitions apply.

3.1

air-cooled and gas pressure deslagging bit

A bit cools the bearings and removes the slag from the blast hole with compressed air

3.2

5.2 The nozzle of bits is recommended to be assembled type.

5.3 When the bit is drilled into the water burst blast hole, the bit shall be provided with means to prevent mud from entering the bearing.

5.4 Cones and claws are made of alloy steel.

5.4.1 The mechanical properties and the content of harmful impurities of the material of cones of inserted cone bits shall meet the following requirements:

- a) The tensile strength σ_b is not less than 882 MPa;
- b) The impact toughness α_k is not less than 78.4 J/cm²;
- c) The content of harmful impurities S is less than 0.04 %, P is less than 0.04 %, and Cu is less than 0.35 %.

5.4.2 The mechanical properties and the content of harmful impurities of the material of claws of bits and cones of steel tooth bits shall meet the following requirements:

- a) The tensile strength σ_b is not less than 784 MPa;
- b) The impact toughness α_k is not less than 58.8 J/cm²;
- c) The content of harmful impurities S is less than 0.04 %, P is less than 0.04 %.

5.5 Die forgings are recommended for cones and jaw blanks.

5.6 The threaded joint body of separated bits is made of high-quality carbon steel or steel castings. Steel castings shall be free of cracks. After the surface is cleaned, it shall be smooth and flat. There shall be no defects such as shrinkage, burnt-on sand and slag, which affect the strength and appearance of the product.

5.7 Carbide teeth used in cone bits shall comply with the requirements of GB/T 2527.

5.8 The threaded connection with shoulder of bits shall be treated with anti-adhesion (anti-gluing).

5.9 The weld of bits shall be free from defects such as cracks, blisters, slag inclusions and undercuts.

5.10 All parts must be inspected to be qualified before assembly and cleaned before assembly.

7 Inspection rules

7.1 Inspection classification

The inspection is divided into factory-exit inspection and type inspection.

7.2 Factory inspection

7.2.1 Each bit shall be subjected to the factory-exit inspection by the quality inspection department before exiting the factory, and shall be accompanied by a product certificate.

7.2.2 The following items are factory-exit inspection items:

- a) diameter of cone bits;
- b) rotation of cones;
- c) connecting threads;
- d) concentricity tolerance of the back of cones and the centerline of connecting threads, measured at the same point on the top of the back of three cones;
- e) inspection of appearance and quality of welds;
- f) inspection of the appearance of alloy teeth.

7.3 Type inspection

In any of the following cases, no less than 3 bits shall be taken on the test bench or at the site for type inspection:

- a) new-specification or newly developed products;
- b) for products produced in batches, when the shape and dimension of the claw blanks are significantly changed;
- c) when materials (including welding materials) and heat treatment processes are significantly changed;
- d) when the national quality supervision and inspection agency requires the type inspection.

7.4 Type inspection shall include all requirements of this Standard.

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