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

GB 21011-2007

Mine manriding cars with narrow gauge - Safety requirements

矿用人车 安全要求

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Foreword

The full technical content of this standard is mandatory. This standard deals with the safety of mining vehicles. The hazards not covered by this standard are consistent with GB/T 15706.1 and GB/T 15706.2. About general mechanical, electrical, hydraulic, and pneumatic The hazards of movement and other equipment are not included in this standard. This standard shall be abolished from the date of implementation of the original JB8913-1999 "Safety Requirements for Mining Manned Vehicles". This standard was proposed by the China Machinery Industry Federation. This standard is under the jurisdiction of the National Mining Machinery Standardization Technical Committee (SAC/TC88). This standard is drafted by: Luoyang Mining Machinery Engineering Design and Research Institute. Participated in the drafting of this standard. Henan Polytechnic University. The main drafters of this standard. Guo Ming, Zou Shengyong, Yang Xianli, Qi Xinmin, Huang Jialin, Wang Yadong. Mine man safety requirements

1 Scope

GB 21011-2007 is the Chinese national standard on mine manriding cars with narrow gauge - safety requirements, in the field of mining and minerals. It carries no /T suffix, which in the Chinese system means compliance is mandatory: a product or a practice within its scope has to meet it to be lawfully made, sold or carried out in China. It was issued on 19 July 2007 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 January 2008. Classification: ICS 73.100.40, CCS D93. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This standard specifies the safety requirements for mining vehicles. This standard is a limit imposed on mining vehicles from physical properties and intended use. system. The safety requirements specified in this standard apply to the hazards arising from the various stages of the life of the machine. This standard applies to mine narrow-gauge transport vehicles, including flat lanes and inclined wells (hereinafter referred to as people's vehicles).

2 Normative references

The terms in the following documents become the terms of this standard by reference to this standard. All dated references, followed by all Modifications (not including errata content) or revisions do not apply to this standard, however, parties to agreements based on this standard are encouraged to study Is it possible to use the latest version of these files? For undated references, the latest edition applies to this standard.

GB/T 1239.4 hot coil cylindrical coil spring technical conditions

GB/T 4695 narrow-gauge locomotive vehicle wheel tread shape and size

GB 9969.1 General instructions for the use of industrial products GB/T 13306 signage

GB/T 15706.1 General principles and design principles of mechanical safety - Part 1. Basic terms and methods (GB/T 15706.1- 2007, ISO 12100-1.2003, IDT)

GB/T 15706.2 General principles and design principles of mechanical safety - Part 2. Technical principles (GB/T 15706.2-2007, ISO 12100-2.2003, IDT)

GB/T 15822.1 Non-destructive testing - Magnetic particle testing - Part 1. General (GB/T 15822.1-2005, ISO 9934-1.2001, IDT)

GB/T 15822.2 Non-destructive testing - Magnetic particle testing - Part 2. Test medium (GB/T 15822.2-2005, ISO 9934-2. 2002, IDT)

GB/T 15822.3 Non-destructive testing - Magnetic particle testing - Part 3. Equipment (GB/T 15822.3-2005, ISO 9934-3.2002, IDT)

GB 16423 Metallic non-metallic mine safety regulations

JB/T 4730.3 Non-destructive testing of pressure equipment - Part 3. Ultrasonic testing

JB/T 8296.1 Mine narrow-gauge vehicle open wheelset

JB/T 9218 Nondestructive Testing Penetration Testing Coal Mine Safety Regulations (2006 Edition)

3 Danger List

The dangers that mining trucks may cause at various stages due to physical properties and intended use during their lifetime are shown in Table 1. Table

4 Safety requirements and measures

4.1 The safety measures and countermeasures for the intended use of passenger cars shall be consistent with the relevant requirements of GB/T 15706.1.

4.2 Personnel shall comply with the relevant provisions of the "Safety Regulations for Coal Mines" or GB 16423.

4.3 Personnel should be designed according to ergonomic principles to reduce labor intensity and avoid operator fatigue.

4.4 Wheel treads shall comply with the provisions of GB/T 4695, the wheel corresponding to the provisions of JB/T 8296.1, the wheel and rail clearance is not greater than 2mm.

4.5 The thickness of the roof of the car and the front and rear walls shall not be less than 2mm.

4.6 No part of the compartment should have sharp edges, sharp corners and projections that could cause injury.

4.7 There is no permanent deformation after the test load of the chassis underframe with 3 times the maximum static load, and the welds shall be free from cracks.

4.8 The front and rear walls of the head car shall have an observation window; the front wall of the trailer shall also have an observation window.

4.9 The comfort factor of the vehicle shall not be less than

0.3 and shall be calculated according to formula (1). $K = S/N$ (1) In the formula. K

---comfort coefficient; S

---car floor area in square meters (m²); N

---Number of seats, the unit is one.

4.10 The protective railings should be installed at the entrance of the carriage and should not fall off during operation.

5 Determination of safety requirements and measures

5.1 Test equipment.

a) a test machine with an accuracy of not less than $\pm 1\%$ and a minimum division value of not more than 2kN;

b) a spring testing machine with an accuracy of not less than $\pm 1\%$ and a minimum division value of not more than

0.1 kN;

c) Steel tape measure and steel ruler with graduation value of 1mm, vernier caliper...

8 Buffer, shock absorber failure

9 springs are permanently deformed

10 Vehicles are unstable, tipped, and slipped out

11 The operating mechanism is inflexible or ineffective

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