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

GB/T 21008-2023

Replacing GB 21008-2007

Aerial ropeways for underground mines - Safety requirements

地下矿用架空索道 安全要求

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Foreword

This document complies with the provisions of GB/T 1:1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting: This document partially replaces GB 21008-2007 "Safety Requirements for Underground Mining Aerial Cableways": Compared with GB 21008-2007, except for the In addition to structural adjustments and editorial changes, the main technical changes are as follows:

- a) Changed the main hazard list (see Chapter 4, Chapter 3 of the:2007 edition);
- b) Delete the requirement that ropeways should comply with relevant regulations and mandatory standards (see 4:1:1 of the:2007 edition);
- c) Added requirements for mining ropeways used to transport personnel (see 5:1:1);
- d) Changed the air temperature requirements for ropeways (see 5:1:3, 4:1:3 of the:2007 edition);
- e) The requirements for underground cableways with explosion-proof requirements and their supporting electrical equipment have been changed (see 5:1:4, 4:1:4 of the:2007 edition);
- f) Added noise requirements (see 5:1:7);
- g) The requirements for isolation and protection have been changed (see 5:2:2, 4:2:2 of the:2007 edition);
- h) Added requirements for spindle flaw detection (see 5:2:3:1);
- i) Change the name of "guide wheel" to "detour wheel" (see 5:2:4, 4:2:4 of the:2007 version), change the relationship between the driving wheel and the detour wheel and the steel The ratio of wire rope diameters (see 5:2:4:1, 4:2:4:1 of the:2007 edition) and the selection requirements for the driving wheel and detour wheel lining materials (see 5:2:4:2,:2007 version of 4:2:4:2);
- j) The requirements for braking devices (see 5:3:1, 4:3:1 of the:2007 edition) and control system requirements (see 5:3:2,:2007 edition of 4:3:2), requirements for emergency

stopping devices (see 5:3:3, 4:3:3 of the:2007 edition);

k) A wire rope escapement protection device is added (see 5:3:4);

l) The requirements for electromechanical control systems have been changed (see 5:3:5, 4:3:4 of the:2007 edition);

m) Added requirements for ropeway disembarkation reminders (see 5:3:6) and requirements for driving warning, management, and call functions (see 5:3:7);

1 Scope

China's national safety requirements for aerial ropeways used underground. It describes the main hazards of aerial ropeways for underground mining and gives the basic safety requirements, the operation and maintenance provisions and the information for use, applying to underground mine ropeways over the whole life cycle of the machine. It does not apply to passenger aerial ropeways. An underground ropeway is a monorail or a suspended rope system that carries materials, equipment and sometimes people along a roadway that is too long to walk conveniently and too irregular for rail. It is the transport method of choice in inclined and winding workings, and it presents hazards that a surface ropeway does not. The route is confined: a load swinging on a rope in a roadway two metres wide can strike the wall, the roof supports, the ventilation ducting, the pipework or a person, with no room to move aside. The gradient changes constantly and reverses, so the load can run away in either direction. The atmosphere may be dusty and the equipment must not be an ignition source. Visibility is short, the operator often cannot see the load, and communication along the route is the only means of control. And the whole installation is extended over hundreds or thousands of metres in a space where inspection is difficult. The standard therefore enumerates the hazards systematically and sets the requirements against them: the braking and anti-runaway devices, the load attachment and its security, the clearances, the emergency stop that must be operable from anywhere along the route, the communication and signalling, the drive and rope requirements, and the inspection and maintenance regime. Issued on 28 December 2023 and in force since 1 July 2024, it replaces GB 21008-2007.

This document describes the main hazards of aerial ropeways used in underground mining and provides basic safety requirements, operation and maintenance and usage information:
 Require: This document applies to underground mining aerial cableways (hereinafter referred to as "cableways") that generate hazards at all stages during the machine's life cycle: This document does not apply to passenger aerial ropeways:

Note: The mining aerial passenger device belongs to the underground mining aerial ropeway:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB 2894 Safety signs and guidelines for their use

GB/T 3766 General rules and safety requirements for hydraulic transmission systems and their components GB/T 3836:

1 Explosive atmosphere Part 1: General requirements for equipment GB/T 3836:

2 Explosive atmospheres Part 2: Equipment protected by flameproof enclosure "d" GB/T 3836:

3 Explosive atmospheres Part 3: Equipment protected by increased safety type "e" GB/T 3836:

3 Terms and definitions

There are no terms or definitions to be defined in this document:

4 Explosive atmospheres Part 4: Equipment protected by intrinsically safe type "i"

GB/T 9075 Specification for inspection and scrapping of wire ropes for ropeways

GB/T 9969 General Principles of Instructions for Use of Industrial Products GB/T 13306 Signage

GB/T 15706 General principles for mechanical safety design risk assessment and risk reduction GB/T 16855:

1 Safety-related components of machinery safety control systems Part 1: General principles for design

JB/T 1581 Ultrasonic testing method for steam turbine, turbine generator rotor and main shaft forgings