

ICS 73.100.20
CCS D 98



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

GB/T 21151-2025

Replacing GB/T 21151-2007

Main axial fans for coal mines - Technical specification

煤矿用轴流主通风机 技术规范

Issued on: October 31, 2025

Implemented on: February 1, 2026

**Issued by: State Administration for Market Regulation;
Standardization Administration of the PRC**

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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 supersedes GB/T 21151-2007 "Technical Conditions for Axial Flow Main Ventilation Fans for Coal Mines" and is consistent with GB/T 21151-2007. Compared to previous versions, aside from structural adjustments and editorial changes, the main technical changes are as follows:

- a) Added terms and definitions (see Chapter 3);
- b) The design service life of the ventilation fan and the safe operating time before the first major overhaul have been changed (see 4.1.5, 3.1.3 in the 2007 version);
- c) The relevant provisions regarding the natural frequency of the fan foundation have been changed (see 4.1.11, 3.1.18 of the 2007 edition);
- d) Specific requirements for the spindle and bearings have been added (see 4.1.12 and 4.1.13);
- e) The requirements for the connection between the fan casing and the inlet section pipe, and between the casing and the diffuser, have been removed (see 3.1.19 of the 2007 edition);
- f) Added requirements related to variable frequency speed control (see 4.1.22);
- g) Additional requirements for structural reinforcement and monitoring have been added (see 4.1.24, 4.1.25);
- h) Safety requirements for frictional sparks between mating metal materials in the ventilator braking device have been added (see 4.2.2);

1 Scope

GB/T 21151-2025 is the Chinese national standard covering the main mine ventilator - the volume and pressure across the operating range, the reversal of airflow required in an emergency, the reliability of a machine on which every person underground depends, and the standby set. Issued on 31 October 2025, it has been in force since 1 February 2026, replacing GB/T 21151-2007.

This document specifies the technical requirements, inspection rules, marking, packaging, transportation, and storage of axial flow main ventilation fans used in coal mines, and describes the corresponding... Test and inspection methods. This document applies to altitudes not exceeding 1000m, operating temperatures ranging from -20°C to 40°C, and relative humidity not exceeding 95% (at 25°C). (At that time), a three-phase motor driven main ventilation fan installed on the surface of a coal mine (hereinafter referred to as "ventilator"). Other main ventilation fans used on the surface of mines refer to... Use as directed.

2 Normative references

The contents of the following documents, through normative references within the text, constitute essential provisions of this document. Dated citations are not included. For references to documents, only the version corresponding to that date applies to this document; for undated references, the latest version (including all amendments) applies. This document.

GB/T 191 Pictorial Symbols for Packaging and Storage

GB/T 755 Ratings and Performance of Rotating Electrical Machines

GB/T 1236 Performance Test of Standardized Air Ducts for Industrial Ventilation Fans

GB/T 2888 Noise Measurement Method for Fans and Roots Blowers

GB/T 3235 Basic types, dimensional parameters and performance curves of ventilation fans

GB/T 3836.1 Explosive Atmospheres - Part

4 Equipment protected by intrinsic safety type "i"

GB/T 6391 Rolling bearings - Rated dynamic load and rated life

GB/T 9438 Aluminum Alloy Castings

GB/T 9969 General Rules for Instructions for Use of Industrial Products

GB/T 10111 Random Number Generation and Its Application in Product Quality Sampling Inspection

GB/T 10178 Field Performance Test of Industrial Fans GB/T 13306 Nameplates

GB/T 13813 Test methods and judgment rules for the safety of frictional sparks in metallic materials used in coal mines

GB/T 19074 Mechanical safety device covers for industrial ventilators

GB/T 19075 Vocabulary and Classification Definitions of Industrial Ventilation Fans

GB/T 32249 General technical conditions for aluminum and aluminum alloy forgings, free forgings and rolled ring forgings

GB/T 41973 Standard for Balance Quality and Vibration Level of Industrial Fans AQ/T 1043 Safety Markings for Mining Products

JB/T 2977 Terminology for Industrial Fans, Blowers and Compressors

JB/T 6444 General Technical Requirements for Fan Packaging

JB/T 6886 Technical Requirements for Coating of Ventilation Fans

JB/T 6887 Technical Specification for Cast Iron Parts for Fans