

ICS 13.100
CCS C 72



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

GB 16423-2020

Replacing GB 16423-2006

Safety regulations for metal and nonmetal mines

金属非金属矿山安全规程

Issued on: October 11, 2020

Implemented on: September 1, 2021

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

Table of Contents

1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 General	3
4.1 Basic rules	3
4.2 Main person in charge of mining enterprise	4
4.3 Full-time safety production management personnel	4
4.4 Safety production management agency	4
4.5 Safety Education and Training	5
4.6 Mine construction	5
4.7 Safety production management	5
4.8 Closing the pit	6
5 Opencast mine	6
5.1 Basic regulations	6
5.2 Opencast mining	7
5.3 Coarse ore crushing	8
5.4 Transportation of ore	9
5.5 Dumping	12
5.6 Electrical facilities	14
5.7 Waterproofing, drainage and fire fighting	19
6 Underground mine	19
6.1 Basic regulations	19
6.2 Mine shaft	21
6.3 Underground mining	28
6.4 Improve transportation	33
6.5 Coarse rock fragmentation	43
6.6 Downhole environment	44
6.7 Electrical facilities	46
6.8 Waterproof and drainage	52
6.9 Fire prevention	54
7 Special mining	56
7.1 Hydraulic mining	56

7.2 Mining by excavator	57
7.3 Mining of facing stone	58
7.4 Salt lake mining	60
7.5 Drilling water solution mining	61
7.6 Well salt mining	63
7.7 Underground in-situ leaching	63
8 Emergency rescue	63

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB 16423-2006 "Safety Regulations for Metal and Nonmetal Mines". Compared with GB 16423-2006, the main changes of this standard are as follows:

- The non-mandatory clauses in the.2006 edition have been deleted, and the revised regulations are all composed of mandatory clauses;
- Modified terms and definitions such as anti-sports car device, and added terms and definitions such as safety exit;
- Appropriate adjustments have been made to the order of the terms of the.2006 edition;
- Modified some terms;
- Canceled the "Occupational Hazard Prevention" chapter;
- Added "special mining" and "emergency rescue" chapters;
- Deleted several standards cited in the.2006 edition, and only cited GB 6722 and GB 18871. This standard was proposed and managed by the Ministry of Emergency Management of the People's Republic of China. The previous versions of the standard replaced by this standard are as follows:
- GB 16423-1996, GB 16423-2006;
- GB 16424-1996. Safety Regulations for Metal and Nonmetal Mines

1 Scope

The safety code for metal and non-metal mining in China, and one of the largest mandatory documents in the national catalogue. It specifies the safety requirements for the whole life of a mine - the design, the construction, the extraction and the closure - and it applies to that whole process in metal and non-metal mines, both underground and open pit. It is the document a mine is inspected against and the one a mine manager is judged by after an accident, which is why it runs to the length it does. Underground it covers the shafts and the

hoisting installation, the ventilation and the control of dust and of the gases that accumulate in a dead end, the ground support and the management of ground pressure, the drilling and blasting with the storage, transport and handling of explosives, the loading and haulage, the drainage and the prevention of inrush from old workings and from water-bearing ground, the electrical installations and their earthing, the fire prevention and the fire fighting arrangements, and the escape and rescue provisions - the second means of egress, the refuge, the self-rescuers and the rescue organisation - which are what decide how many people come out when something has already gone wrong. In the open pit it covers the slope stability and the batter and berm geometry, the benching, the drilling and blasting, the haul roads and the mobile plant, and the dumps. To those are added the tailings facility, which is the single largest hazard most mines carry and the one whose failure reaches beyond the site; the closure and the securing of the openings and the workings left behind; and, running through the whole document, the occupational health provisions on dust, noise, vibration, heat and the harmful substances of the particular ore. Issued on 11 October 2020 and in force since 1 September 2021, it replaces GB 16423-2006.

This standard specifies the safety requirements for the entire process of design, construction, mining and closure of metal and non-metal mines. This standard applies to the whole process of design, construction, mining and closure of metal and non-metal mines. This standard does not apply to.

---Mining of coal-based metal and non-metallic mines;

---River sand and sea sand mining;

---Mining of liquid or gaseous minerals such as oil, natural gas, shale gas, mineral water, etc.

2 Normative references

The following documents are indispensable for the application of this document. For dated reference documents, only the dated version applies to this document. For undated references, the latest version (including all amendments) applies to this document.

GB 6722 Blasting safety regulations

GB 18871 Basic standard for ionizing radiation protection and radiation source safety

3 Terms and definitions

The following terms and definitions apply to this document.

3.1 Metal and non-metal open-pit mine Mining sites and auxiliary facilities that extract metal or non-metallic minerals by stripping surrounding rock, topsoil or gravel on the surface.

Note. "Metal and non-metal open-pit mines" are referred to as "open-pit mines" in this

standard.

3.2 Metal and non-metal underground mines Use flat tunnels, inclined shafts, ramps, vertical shafts, etc. as entrances and exits to go deep below the surface to extract metal or non-metallic minerals and their auxiliary facilities.

Note. "Metal and non-metallic underground mines" are referred to as "underground mines" in this standard.

3.3 Coal series metal and non-metal mines Metal and non-metallic mines that mine (associated) with coal.

3.4 exit The underground mine personnel safely leave the underground passage to the ground.

3.5 Main safety exit A safety exit used by underground personnel in daily work.