

ICS 73.020
CCS D 15

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**ENERGY INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

NB/T 11434.1-2023

**Paste filling in coal mine - Part 1: Technical requirements of
goaf isolation in fully mechanized mining face**

煤矿膏体充填 第1部分：综采工作面采空区隔离工艺要求

(English Translation)

Issued on: December 28, 2023

Implemented on: June 28, 2024

Issued by: National Energy Administration

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

This document is part 1 of NB/T 11434 Paste filling in coal mines. NB/T 11434 has been published in the following parts.

- Part 1: Technical requirements for isolation of goaf areas in fully mechanized mining working faces;
- Part 2: General technical requirements for pipes and valves;
- Part 3: Effect evaluation method;
- Part 5: Technical requirements for cementitious materials.

Introduction

NB/T 11434 is a standard for coal mine filling mining jointly issued by the National Energy Administration, the Ministry of Finance, the Ministry of Land and Resources, and the Ministry of Environmental Protection.

Based on the document "Guiding Opinions on Coal Production", in order to promote the reform of coal production mode, solve the problems of "three under" (under buildings, under railways, under water bodies, etc.) coal pressure and it is compiled to address the mining issues of marginal coal and residual coal, improve the level of coal resource development and utilization, improve the mining environment, and promote the healthy development of the coal industry.

This document provides standardized guidance for coal mining enterprises implementing paste filling mining. Other contents will be adjusted according to the implementation of the standard in the future.

It is added that this document is intended to consist of six parts.

--- Part 1: Technical requirements for isolation of goaf in fully mechanized mining working faces. The purpose is to Effectively isolate the goaf during filling to prevent slurry leakage and slurry leakage accidents caused by unsatisfactory isolation, which would threaten the filling opening.

The mining is carried out safely to ensure the filling effect.

--- Part 2: General technical requirements for pipes and valves. The purpose is to standardize the design and selection of pipes and valves for coal mine paste filling and ensure that the filling pipes the installation and use of key pipe valves at the road connection are reliable, which is conducive to the safe transportation of coal mine filling materials.

--- Part 3: Effect evaluation method. The purpose is to summarize the filling mining system and process, various filling parameters and surface deformation observation.

Measure the value and judge whether the filling mining meets the design requirements.

--- Part 4: Technical requirements for aggregates. The purpose is to standardize the classification, selection and use of aggregates for paste filling.

It provides a basis for system design, selection of key equipment, and preparation of paste filling materials.

--- Part 5: Technical requirements for cementitious materials. The purpose is to standardize the types and technical requirements of cementitious materials used for paste filling, and ensure Paste pipeline transportation safety, underground filling body connection and filling body strength design requirements.

--- Part 6: Technical requirements for support in the waiting area. The purpose is to improve the standardization and reliability of support in the waiting area and to ensure the safety of personnel in the waiting area.

Operation safety and ventilation system reliability; clarify the support methods, design requirements, and operation processes of the waiting area to reduce the subsidence of the roof before filling.

Improve the surface control effect, reduce the difficulty of working face roof management; ensure the integrity of the roof in the charging area, thereby improving the isolation effect and work efficiency.

Coal mine paste filling Part 1: Technical requirements for isolation of goaf in fully

mechanized mining face

1 Scope

This document specifies the isolation equipment, isolation materials, isolation process requirements for the isolation process of the goaf area of the fully mechanized coal mining face with paste filling in coal mines.

Requirements, safety technical requirements, etc.

This document is applicable to the isolation of goaf areas in comprehensive mechanized paste filling in coal mines.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document.

AQ1043 Mining Product Safety Signs and Labels HG/T 2580 Determination of tensile strength and elongation at break of rubber or plastic coated fabrics MT/T 113 General test methods and judgment rules for flame retardancy and antistatic properties of polymer products used in underground coal mines MT/T 542 Monolithic pillar shoe MT/T 548 Specification for the use of single hydraulic props

3 Terms and definitions

The following terms and definitions apply to this document.

Middle isolation bracket the cutting holes are arranged along the fully mechanized mining and filling working face, which has the function of supporting and protecting the coal mining operation space with the traditional middle support and plays the role of coal mining operation.

The filling coal mining equipment is used to isolate the area from the area to be filled, the top and bottom plates and the adjacent frames to prevent the paste filling material from overflowing.

Both ends isolation bracket Arranged in the mining tunnels at both ends of the fully mechanized mining and filling working face, it has the function of protecting the coal mining operation with the traditional end support and plays the role of mining.

The filling coal mining equipment has the function of isolating the tunnel from the area to be filled, the top and bottom plates, and the middle isolation support to prevent the paste filling

material from overflowing.

4.1.1 Middle isolation bracket

The middle isolation support is composed of the middle basic support and the middle partition mechanism, among which the basic support is mostly a four-column support hydraulic support.

The beam generally includes the front beam, the main beam and the rear beam. The front beam protects the coal mining machine operation area, the main beam mainly controls the roof sinking, and the maintenance personnel the partition mechanism is installed on the rear side of the main top beam on the basis of the basic support and is perpendicular to the