

ICS 73.020
CCS D 15

NB

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

NB/T 11434.5-2023

**Paste filling in coal mine - Part 5: Technical requirements for
cementitious materials**

煤矿膏体充填 第5部分：胶凝材料技术要求
(English Translation)

Issued on: December 28, 2023

Implemented on: June 28, 2024

Issued by: National Energy Administration

Table of Contents

Preface
Introduction
1 Scope
2 Normative references
3 Terms and Definitions
4 Categories
5 Components and Materials
6 Technical Requirements
7 Test methods
8 Inspection Rules
9 Packaging, marking, transportation and storage

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 5 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 5: Technical requirements for cementitious materials

1 Scope

This document specifies the classification, components and materials, technical requirements, test methods, inspection rules, packaging, Labelling, transportation and storage.

This document applies to cementitious materials used for coal mine paste filling.

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.

GB 175-2023 General purpose Portland cement GB/T 176 Chemical analysis methods for cement GB/T 200-2017 Medium heat Portland cement, low heat Portland cement GB/T 203 Granulated blast furnace slag for cement GB/T 209 Sodium hydroxide for industrial use GB/T 210 Industrial Sodium Carbonate GB/T 750 Test method for the stability of cement autoclave GB/T 1345 Cement fineness test method - Sieve analysis method GB/T 1346 Test methods for water consumption, setting time and stability of cement of standard consistency GB/T 1596 Fly ash used in cement and concrete GB/T 2847 Pozzolanic admixtures for cement GB/T 3183-2017 Masonry cement GB/T 4209 Industrial Sodium Silicate GB/T 5483 Natural gypsum GB 6566 Limits of radionuclides in building materials GB/T 6645 Granulated electric furnace phosphorus slag for cement GB/T 8074 Determination of specific surface area of cement - Blaine method GB 8978 Comprehensive sewage discharge standard GB/T 9774 Cement packaging bags GB/T 12573 Cement sampling method GB/T 12960 Quantitative determination of cement components GB/T 13590-2022 Steel slag slag silicate cement GB/T 17671 Test method for strength of cement mortar (ISO method) GB/T 18046 Granulated blast furnace slag powder for cement, mortar and concrete GB/T 20491 Steel slag powder for cement and concrete GB/T 21371 Industrial by-product gypsum used in cement