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

NB/T 11434.3-2023

Paste filling in coal mine - Part 3: Effect evaluation method

煤矿膏体充填 第3部分：效果评价方法

(English Translation)

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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 3 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 parts will be adjusted according to the implementation of the standard.

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

--- Part 1: Technical requirements for isolation of goaf in fully mechanized mining face. 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 3: Effect evaluation methods

1 Scope

This document specifies the filling mining design requirements, quality control requirements, safety technical requirements, technical requirements, and Methods for evaluating the effect of surgery.

This document is applicable to the evaluation of the effectiveness of paste filling mining technology in coal mines.

2 Normative references

The contents of the following documents constitute 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/T 39834 Technical requirements for comprehensive mechanized paste bag filling coal mining NB/T 51070 Test methods for coal mine paste filling materials NB/T 51071 Monitoring technology and methods for coal mine paste filling Coal Mine Safety Regulations Specifications for coal pillars and compressed coal mining in buildings, water bodies, railways and main shafts

3 Terms and definitions

The following terms and definitions apply to this document.

Paste filling mining pastebag filling the solid waste such as gangue and fly ash is processed into a paste-like slurry with no critical flow rate, and then transported to the Coal mining face, timely filling of goaf, no dehydration of filling body after solidification, control of rock movement and ground subsidence, liberation of "three down" coal pressure and A type of mining method for resource utilization of solid waste.

Paste filling materials in paste filling mining, broken coal gangue, fly ash, slag, construction waste, aeolian sand, river sand, loess, tailings and other materials are mixed with glue.

The harmless paste slurry is made by mixing the solidifying material and water (including additives or admixtures) in appropriate proportions, stirring them evenly, and then filling them into the goaf.

Material.

paste-fillingbody

The solidified paste filling material remaining in the goaf.

Evaluation areaevaluationarea the impact range of filling mining to be evaluated includes tunnels, chambers, shafts and other tunnel facilities, buildings (structures), railways, water bodies and other surface areas.

Areas where features and other protected objects that require assessment are located.