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**NATIONAL STANDARD OF THE
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**Mining - Air quality control systems for operator enclosures -
Performance requirements and test methods**

采矿 操作室空气质量控制系统 性能要求和试验方法

(English Translation)

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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 adopts ISO 23875:2021 "Performance requirements and test methods for air quality control systems in mining workrooms".

The following minimal editorial changes have been made to this document.

---Incorporating the content of the ISO 23875:2021/Amd1.2022 amendment;

---Corrected an error in ISO 23875:2021, changing reference 4.2.2.2g) to 4.2.2.2e) [see 6.1a) 7)].

Please note that some content in this document may involve patents. The issuing organization of this document assumes no responsibility for identifying patents.

This document was proposed by the China Machinery Industry Federation.

This document is under the jurisdiction of the National Technical Committee on Standardization of Mining Machinery (SAC/TC88).

Introduction

Mining safety concerns all owners, developers, managers, and workers in all mining environments. Routine mining activities generate risks to personnel.

Particulate matter in the atmosphere is harmful to human health. Therefore, it is necessary to develop appropriate control measures to reduce operator exposure to particulate matter while operating equipment in the control room.

The risks associated with particulate matter in the atmosphere. As more and more

countries implement air quality regulations in mining, construction, and industrial environments, equipment manufacturers are also...

There is a growing recognition of the need to establish standards and specifications for operator room design and performance. This document aims to clarify the basic requirements for operator room design.

The goal is to ensure that the control room can continuously maintain good air quality and reduce the concentration of inhalable particulate matter and carbon dioxide that are harmful to human health.

This document focuses on the following three aspects.

- a) Design;
- b) Performance testing of the air quality control system;
- c) Maintenance and operation instructions for the control room.

Whether it is a new equipment or an existing old equipment control room, as long as it meets the requirements of this document, it can stably achieve air quality control performance.

The technical characteristics, design, and performance testing methods of the control room are universal; therefore, this document strives for broad applicability to meet the needs of fixed-type...

The need for mobile control rooms.

This document aims to protect the occupational health and safety of personnel working in the control room, primarily by setting parameters to determine air quality.

The effectiveness of the control system is crucial for solving air quality problems. Measures to control these air pollutants include. employing efficient air quality control systems.

Control system (simultaneously processes outside air and recirculated air), dilutes carbon dioxide concentration, regularly monitors air quality in the operating room, and in operation...

Effective maintenance should be carried out throughout the entire service life of the control room. Extensive research has been conducted and related results published on air quality control systems.

As a result, a rich knowledge system has been formed, which provides the basis for the formulation of this document (see references).

As shown in Figure 1, this document addresses the design, performance testing, and maintenance of the control room air quality control system from a full lifecycle perspective.

Standards have been established.

Figure 1.Lifecycle of an air quality control system

Mining Operation Room Air Quality Control System Performance requirements and test methods

1 Scope

This document specifies the performance and design requirements for the control room air quality control system and its monitoring devices. These design specifications are generally applicable.

It is not specific to any particular mining environment, but is designed to meet established requirements for pressure parameters, inhalable particulate matter concentration parameters, and carbon dioxide concentration parameters.

This document also specifies the test methods for evaluating the above parameters, provides operation and maintenance instructions, and outlines the operation of the air quality control system.

The integration proposed recommendations.

This document does not include information regarding hazardous gases and vapors that may be present in outdoor working environments.

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.

ISO 18158 Workplace air terminology principles) Note. GB/T 27000-2023 Conformity Assessment Vocabulary and General Principles (ISO/IEC 17000:2020, IDT) ISO/IEC 17050-1 Conformity assessment - Supplier's declaration of conformity - Part 1: General requirements Note. GB/T 27050.1-2006 Conformity assessment - Supplier's declaration of conformity - Part 1: General requirements (ISO/IEC 17050-1:2004, IDT) IEC 60073 Basic and safety rules for human-machine interface signage and markings; coding rules for indicators and operating devices (Basic and...) Note. GB/T 4025-2010 Basic and safety rules for human-machine interface signage; coding rules for indicators and operating devices (IEC 60073.

2002, IDT)

3 Terms and Definitions

The terms and definitions defined in ISO/IEC 17000 and ISO 18158, as well as the following terms and definitions, apply to this document.

3.1 Air quality related terminology

3.1.1

airborne particles

airborne particulate matter Tiny substances dispersed in the air in solid or liquid form.

[Source. ISO 18158:2016, 2.1.2.3, with modifications]