

CCS Q 46



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

GB/T 22459.5-2022

**Refractory mortars - Part 5: Determination of grain size
distribution(sieve analysis)**

Issued on: March 9, 2022

Implemented on: October 1, 2022

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

foreword

Introduction

1 Scope

2 Normative references

3 Terms and Definitions

4 Principles

5 Instruments and equipment

5.2 Screen brushes.

5.3 Balance. the minimum division value is not more than 0.01g.

5.4 Drying box. can meet the temperature control of 110 degrees C+/-5 degrees C.

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 of Standardization Documents" drafted.

This document is part 5 of GB/T 22459 "Refractory Slurry", GB/T 22459 has issued the following parts.

- Part 1. Consistency test method (cone penetration method);
- Part 2. Consistency test method (jumping table method);
- Part 3. Test method for bonding time;
- Part 4. Test method for flexural bond strength at room temperature;
- Part 5. Test method for particle size distribution (sieve analysis);
- Part 6. Test method for water content of pre-mixed mud;
- Part 7. Other performance test methods;
- Part 8. Bleeding test method.

This document replaces GB/T 22459.5-2008 "Refractory Mud Part 5. Test Method for Particle Size Distribution (Sieve Analysis)". and

Compared with GB/T 22459.5-2008, in addition to structural adjustment and editorial changes, the main technical changes are as follows.

- a) Modified normative references (see Chapter 2, Chapter 2 of the.2008 edition);
- b) Changed terms and definitions (see Chapter 3, Chapter 3 of the.2008 edition);
- c) Changed the principle (see Chapter 4, Chapter 4 of the.2008 edition);
- d) Changed the equipment (see 5.3, 5.4, 5.6, 5.7, Chapter 5 of the.2008 edition);
- e) The sampling regulations have been changed (see Chapter 6, Chapter 6 of the.2008 edition);
- f) Changed the test procedure (see 7.1, 7.3, 7.4, 7.5, Chapter 7 of the.2008 edition);
- j) The requirements for pre-treatment of pre-mixed mud with organic liquid binders are added (see 7.5.3);
- h) Changed the result calculation (see 8.1, 8.2, Chapter 8 of the.2008 edition);
- i) Changed the test report requirements [see Chapter 9 a), c), e), h), j), Chapter 9 of the.2008 edition].

This document is modified to adopt ISO 13765-5.2004 "Refractory Mud Part 5.Test Method for Particle Size Distribution (Sieve Analysis)".

Compared with ISO 13765-5.2004, this document has many adjustments in structure, and the comparison list of structure number changes between the two documents

See Appendix A for the table.

Compared with ISO 13765-5.2004, this document has many technical differences. In the outer margins of the clauses involved, vertical

A straight single line (|) is marked. See Appendix B for a list of these technical differences and their reasons.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

Refractory mud is generally used as the joint material of refractory masonry, so that the masonry forms a tight whole to resist the damage of external force and prevent gas,

Intrusion of molten liquid. Masonry joints are usually the weak link of the masonry, and in most cases are damaged before the masonry, so the quality of the refractory mortar is

It is closely related to the overall life of the masonry.

The particle size of refractory mud is an important indicator to characterize its particle gradation, which directly affects the quality performance and construction performance of refractory mud, and ultimately affects the quality of refractory mud.

The service life and safety of refractory masonry are affected. The first 6 parts of GB/T 22459 are modified to adopt ISO 13765, GB/T 22459

Parts 7 and 8 have no correspondence with ISO 13765.

GB/T 22459 "Refractory Mud" consists of 8 parts.

--- Part 1.Consistency test method (cone penetration method), the purpose is to determine the consistency of refractory mud;

--- Part 2.Consistency test method (jumping table method), the purpose is to determine the consistency of refractory mud;

--- Part 3.Test method for bonding time, the purpose is to determine the time required for the stability of the bonding of refractory mortar joints when building refractory masonry take time;

--- Part 4.Test method for flexural bonding strength at room temperature, the purpose is to determine the resistance of refractory mortar joints after refractory masonry is built.

folded bond strength;

--- Part 5.Test method for particle size distribution (sieve analysis), the purpose of which is to determine the particle size distribution of refractory mud;

--- Part 6.Test method for water content of pre-mixed mud, the purpose of which is to determine the moisture content of pre-mixed mud;

--- Part 7.Other performance test methods, the purpose is to determine the refractoriness of refractory mud, high temperature flexural bonding strength, room temperature flexural strength

degree, thermal expansion, thermal conductivity, etc.;

--- Part 8.Bleeding test method, the purpose is to determine the bleeding performance of refractory mud at rest or under a certain load.

This document is part 5, and the other 7 parts belong to the test method for refractory mud, which together constitute the test method for refractory mud

system.

refractory mud

Part 5.Test method for particle size distribution (sieve analysis)

1 Scope

This document specifies the principles, equipment, sampling, test procedures, results calculation and

experiment report.

This document applies to the determination of the particle size distribution of refractory slurries using the particle size distribution (sieve analysis) method.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 4513.2 Unshaped Refractories Part 2.Sampling (GB/T 4513.2-2017, ISO 1927-2.2012, IDT)

GB/T 4513.3 Unshaped Refractories Part 3.Basic Characteristics (GB/T 4513.3-2017, ISO 1927-3.2012, MOD)

GB/T 6005 Test sieve wire mesh, perforated plate and basic size of electroformed sheet mesh (GB/T 6005-

2008, ISO 565.1990, MOD)

GB/T 8170 Numerical Rounding Rules and Representation and Judgment of Limit Values

GB/T 18930 Refractory Terms (GB/T 18930-2020, ISO 836.2001, MOD)

GB/T 22459.6 Refractory Mud Part 6.Test Method for Moisture Content of Pre-mixed Mud (GB/T 22459.6-2022,

ISO 13765-6.2004, MOD)

3 Terms and Definitions

Terms and definitions defined in GB/T 18930 apply to this document.

4 Principles

Pass the material through a series of sieves with gradually decreasing apertures, expressed by the sieve aperture used and the mass fraction of the separated particles

The particle size distribution of the product.

5 Instruments and equipment