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

GB/T 22459.3-2021

Refractory mortars - Part 3: Determination of joint stability

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Table of Contents

Foreword

Introduction

1 Scope

2 Normative references

3 Terms and definitions

4 Equipment

4.1 Mixer. Use the mixer specified in GB/T 22459.1 or GB/T 22459.2.

4.2 Electric heating drying oven. It can meet the requirements of 110 degrees C $\pm$ 5 degrees C temperature control.

4.3 Consistency tester. Use the consistency tester specified in GB/T 22459.1 or GB/T 22459.2.

4.4 Balance. the minimum graduation value is not more than 1g.

4.5 Stopwatch.

4.6 Spacer rod. a clean and smooth rigid round rod with a diameter of 3mm $\pm$ 0.1mm.

4.7 Measuring cylinder.

5 Sampling

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"

Drafting.

This document is Part 3 of GB/T 22459 "Refractory Mud". GB/T 22459 has released the following parts.

---Part 1. Consistency test method (cone penetration method);

---Part 2. Consistency test method (jumping table method);

---Part 3. Bonding time test method;

---Part 4. Test method for flexural bonding strength at room temperature;

---Part 5. Particle size distribution (sieve analysis) test method;

---Part 6. Test method for water content of pre-mixed mud;

---Part 7. Other performance test methods;

---Part 8. Test method for bleeding.

This document replaces GB/T 22459.3-2008 "Refractory Mud Part 3. Test Method for Bonding Time", and is compatible with GB/T 22459.3-2008

Compared with 2008, in addition to structural adjustments and editorial changes, the main technical changes are as follows.

- a) The normative references have been changed (see Chapter 2, Chapter 2 of the 2008 edition)
- b) The definition of terms has been changed (see 3.1, 3.1 in the 2008 edition);
- c) Deleted the principle (Chapter 4 of the 2008 edition);
- d) The requirement for the maximum range of the balance has been deleted, and the requirement for the minimum graduation value has been modified (see 4.4, 5.4 in the 2008 edition);
- e) Modified the sampling requirements for refractory mud (see 5.1, 5.2, Chapter 6 of the 2008 edition);
- f) The requirements for the consistency of refractory mud have been added (see 6.2);
- g) Modified the test procedure (see 6.2~6.5, 7.2~7.5 of the 2008 edition);
- h) Increased the accuracy requirements of the results (see Chapter 7);
- i) Modified the test report requirements (see Chapter 8, Chapter 9 of the 2008 edition).

This document uses the redrafting method to modify and adopt ISO 13765-3:2004 "Refractory Mud Part 3. Bonding Time Test Method".

Compared with ISO 13765-3:2004, this document has more structural adjustments. Appendix A lists this document and ISO 13765-3.

The 2004 chapter number comparison list.

Compared with ISO 13765-3:2004, this document has technical differences.

The vertical single line (?) of the position is marked, and a list of the corresponding technical differences and their reasons is given in Appendix B.

Introduction

Refractory mud is generally used as the joint material of refractory masonry to make the masonry form a tight whole to resist external damage and prevent gas,

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

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

The bonding time of refractory mud is an important indicator of its construction performance, which directly affects the construction quality of refractory masonry, and will eventually affect the refractory

The service life and safety of the masonry are affected. The first six parts of GB/T 22459 are equivalent to ISO 13765, and the first six parts of GB/T 22459

Part 7 has no correspondence with ISO 13765.

GB/T 22459 "Refractory Mud" is planned to consist of eight parts.

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

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

---Part 3.Bonding time test method, the purpose is to determine the stability of the bonding joint of the refractory mud when the refractory masonry is built

The time required.

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

? Strength.

--- Part 5.Particle size distribution (sieve analysis) test method, the purpose is to determine the gradation of refractory mud particles.

--- Part 6.Pre-mixed mud water content test method, the purpose is to determine the water 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, and normal 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 standing or under a certain load.

This document is part 3, and the other 7 parts belong to the refractory mud test method, which together constitute the refractory mud test method

system.

Refractory mud

Part 3. Bonding time test method

1 Scope

This document specifies the equipment, sampling, test procedure, calculation of results and test report for the test method for the bonding time of refractory mud.

This document is applicable to the determination of the bonding time of refractory mud.

2 Normative references

The content of the following documents constitutes an indispensable clause of this document through normative references in the text. Among them, dated quotations

Only the version corresponding to the date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to

This document.

GB/T 4513.2 Unshaped refractory materials Part 2. Sampling (GB/T 4513.2-2017, ISO 1927-2:2012, IDT)

GB/T 22459.1 Refractory mud Part 1. Consistency test method (cone penetration method) (GB/T 22459.1-2008, ISO

13765-1:2004, IDT)

GB/T 22459.2 Refractory mud Part 2. Consistency test method (jumping table method) (GB/T 22459.2-2008, ISO

13765-2:2004, IDT)

3 Terms and definitions

The following terms and definitions apply to this document.

3.1

Bonding time joint stability

Without destroying the mud joints, the time it takes to rub the refractory bricks until the refractory mud dries up and the refractory bricks cannot be rubbed.

5 Sampling

5.1 For dry powder mud, sampling according to the provisions of GB/T 4513.2 or negotiated by both parties. Use a quarter method or a sampler to sample about 5kg.

5.2 For pre-mixed mud, all the mud in the packaging container should be mixed uniformly