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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 22459.1-2022

Refractory mortars - Part 1: Determination of consistency using the penetrating cone method

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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 of Standardization Documents" drafted.

This document is part 1 of GB/T 22459 "Refractory Slurry". 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.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 22459.1-2008 "Refractory Mud Part 1.Consistency Test Method (Cone Penetration Method)". and

Compared with GB/T 22459.1-2008, 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) The structure of the penetrometer has been re-described and drawn (see 5.1.1, 5.1 of the.2008 edition);

d) The requirements for the mass of the cone in the equipment have been added (see 5.1.2);

e) Changed the requirements for the capacity of the stirring pot and the material of the stirring pot and stirring blade (see 5.2.2, 5.2.3, 5.2.1 and 5.2.2 of the.2008 edition);

f) Changed Figure 1 and the description of the index number (see Figure 1, Figure 1 of the.2008 edition);

g) Changed Figure 2 and the description of the index number (see Figure 2, Figure 2 of the.2008 edition);

h) Changed the sampling regulations for refractory mud (see Chapter 6, Chapter 6 of the.2008 edition);

i) Changed the test procedure (see Chapter 7, Chapter 7 of the.2008 edition);

j) Added the requirement for numerical rounding (see Chapter 8);

k) Changed the test report requirements (see Chapter 9, Chapter 9 of the.2008 edition).

This document is revised and adopted ISO 13765-1.2004 "Refractory Mud Part 1.Consistency Test Method (Cone Penetration Method)".

Compared with ISO 13765-1.2004, 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 13765-1.2004, this document has many technical differences. In the outer margins of the clauses involved, the 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 consistency of refractory mud is an important indicator to characterize its construction performance, which directly affects the construction quality of refractory masonry, and will eventually affect the refractory masonry.

impact on service life and safety. The first 6 parts of GB/T 22459 are modified and adopted ISO 13765, Part 7 of GB/T 22459

Part 8 and ISO 13765 have no correspondence.

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 1, 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 1.Consistency test method (cone penetration method)

1 Scope

This document specifies the principle, equipment, sampling, test procedure, result calculation and test method of refractory mud consistency test method (cone penetration method).

inspection report.

This document applies to the determination of refractory mud consistency (cone penetration 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 8170 Numerical Rounding Rules and Representation and Judgment of Limit Values

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

3 Terms and Definitions

GB/T 18930 and the following terms and definitions apply to this document.

3.1

The viscosity of the refractory slurry in the applied state.

4 Principles

The consistency of the refractory grout is determined by the depth to which a specified cone sinks into the specimen.

5.1.1 Overview

The structure diagram of the penetrometer is shown in Figure 1, which consists of a reading instrument, a measuring rod, a release button, a striker rod, a cone and a sample box.