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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 22459.4-2022

Refractory mortars - Part 4: Determination of flexural bonding strength

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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 4 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 22459.4-2008 "Refractory Mud Part 4.Test Method for Flexural Bonding Strength at Room Temperature". and

Compared with GB/T 22459.4-2008, 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 the requirements for equipment (see 5.1~5.6, 5.1~5.6 of the.2008 edition);

c) Changed Figure 1 and added Figure 2 (see Figure 1, Figure 2, Figure 1 of the.2008 edition);

d) The requirements for specimen size, knife edge spacing and loading rate have been changed (see Table 1, Table 1 of the.2008 edition);

e) The provisions on sampling have been changed (see 6.1, 6.1 of the.2008 edition);

f) Added the provisions on the size deviation of the bonding surface of the refractory brick test block and the source of the refractory brick (see 6.2.2, 6.2.3);

g) Changed the provisions on drying time of refractory bricks (see 6.2.4, 6.2 of the.2008 edition);

h) The requirements for environmental conditions and sample handling are added to the preparation of test pieces (see 7.1.1);

i) Added the requirement for sealing and then stirring (see 7.1.3);

j) Added tolerance requirements for brick joints (see 7.1.4);

k) Changed the position deviation of the loading blade (see 7.4.2, 7.4.2 of the.2008 edition);

l) Modified the provisions on drying time (see 7.2.2, 7.2 of the.2008 edition);

m) The requirements for the cooling rate after the sample is fired are added (see 7.3.4);

n) Changed the provisions for checking the fracture surface (see 7.4.3, 7.4.3 of the.2008 edition);

o) Changed the provisions for the rounding of test results (see Chapter 8, Chapter 8 of the.2008 edition);

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

This document is revised and adopted ISO 13765-4.2004 "Refractory Mud Part 4.Test Method for Flexural Bond Strength at Room Temperature".

Compared with ISO 13765-4.2004, 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 13765-4.2004, 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 normal temperature flexural bonding strength of refractory mud directly determines the quality of the product and the effect of construction and masonry, and will eventually affect the refractory masonry.

The service life and safety of the body 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 4, 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 4.Test method for flexural bond strength at room temperature

1 Scope

This document specifies the principle, equipment, sampling and test block preparation, test procedures,

Result calculation and test report.

This document is applicable to the determination of the flexural bonding strength of the bonding surface after the refractory mortar is bonded to the refractory brick (after drying and/or firing).

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)

GB/T 22459.1 Refractory Mud Part 1.Consistency Test Method (Cone Penetration Method) (GB/T 22459.1-2022,

ISO 13765-1.2004, MOD)

GB/T 22459.2 Refractory Mud Part 2.Consistency Test Method (Jumping Table Method) (GB/T 22459.2-2022,

ISO 13765-2.2004, MOD)