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

GB/T 4513.4-2017

**Monolithic (unshaped) refractory products -- Part 4:
Determination of consistency of castables**

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4.1 mixer. In line with GB/T 4513.5-2017 in 4.2 requirements.

Foreword

GB/T 4513 "amorphous refractory" includes the following eight sections.

- Part 1. Introduction and classification;
- Part 2. Sampling;
- Part 3. Basic characteristics;
- Part 4. Determination of fluidity of castables;
- Part 5. Sample preparation and pretreatment;
- Part 6. Determination of physical properties;
- Part 7. Determination of preforms;
- Part 8. Determination of special properties.

This section GB/T 4513 Part 4.

This section drafted in accordance with GB/T 1.1-2009 given rules.

This section uses the redrafted law Amendment uses ISO 1927-4.2012 "amorphous refractory materials Part 4. Castable fluidity

Determination. "

This part of ISO 1927-4.2012 compared to the structural adjustment, Appendix A lists this part of the ISO 1927-4.2012

Chapter number control list.

This section there are technical differences compared with ISO 1927-4.2012, Appendix B lists this part of the ISO 1927-4.2012

Technical differences and their causes list.

Please note that some of this document may be patentable. The issuing agencies of this document do not bear the responsibility of identifying these patents.

This part of the National Refractories Standardization Technical Committee (SAC/TC193) and focal point.

This section is responsible for the drafting unit. Sinosteel Luoyang Refractory Research Institute Co., Ltd., Anhui Ruitai New Materials Technology Co., Ltd., Beijing Lear High Temperature Materials Co., Ltd.

1 Scope

GB/T 4513 provisions of this part of dense castable and insulating castable fluidity measurement equipment, test procedures and test reports.

This section applies to dense castable and insulation castable sample preparation of water (or other liquid) to determine the amount added.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 4513.1 amorphous refractory materials - Part 1 Introduction and classification (GB/T 4513.1-2015, ISO 1927-1:2012,

MOD)

GB/T 4513.5 amorphous refractory - Part 5. Preparation and pretreatment of specimens (GB/T 4513.5-2017, ISO 1927-

5:2012, MOD)

GB 5749 drinking water health standards

GB/T 6682 analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696:1987, MOD)

3 Overview

The amount of water (or other liquids added) used in the preparation of castables has a significant effect on the test results. Adding too much will result

Strength decreased, shrinkage increased, but also easily lead to segregation of particles. Inadequate incorporation results in more holes resulting in lower bulk density and strength.

This section describes four different liquidity determination methods based on the type of material.

a) percussion vibration method, suitable for the determination of fluidity of castables, which contain a large amount of light aggregate such as vermiculite or perlite,

Usually used pouring, ramming, compaction construction methods;

b) jump table method, suitable for the determination of fluidity of castable fluidity;

c) Shaking table method, applicable to the determination of the fluidity of castables that requires the shaking table to be solidified;

d) gravity method, suitable for determination of flowability of gravity casting material.

In order to get reproducible results, the following factors should be strictly controlled.

--- wet mixing time

--- How much mixture, according to the measurement of the number of projects to choose (such as the determination of workable time), but also with the size of the mixing pot;

--- Mixer size, according to the material is full of stirring the total volume of 50% to 75%;

--- Temperature (water, pouring material and the environment temperature), the determination of fluidity and can be construction time temperature 18 degrees C ~ 22 degrees C;

--- Test water (or other liquids added volume), when the dry bulk volume below 50% of the total volume of the stirrer, due to increase

Of the metal surface needs to be wetted, add water will be significantly increased;

--- Water quality.