

ICS 81.080

CCS Q 43



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

GB/T 2275-2017

Replacing GB/T 2275-2007

Magnesia and magnesia-alumina bricks

镁砖和镁铝砖

Issued on: September 7, 2017

Implemented on: August 1, 2018

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine;
Standardization Administration of the PRC**

Table of Contents

- 1 Scope
- 2 Normative references
- 3 Terms and definitions

Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 2275-2007 "magnesia brick and magnesia-alumina brick", compared with GB/T 2275-2007, the main technical changes are as follows:

- Added terms and definitions (see Chapter 3);
- Removed M-93, M-87, MLZ-80A, MLZ-80B, MLJ-70 grades, added MLZ-80, MLJ-90, MLJ-85 (See.2007 version 4.1);
- Modify the magnesia brick, magnesia-alumina brick and magnesia spinel brick chemical composition, apparent porosity, compressive strength at room temperature, load softening temperature, etc. Indicators (see tables 2 and 3, 2007 edition tables 2 and 3);
- Increased the quality of qualified batch average and standard deviation (see Table 2 and Table 3);
- Modify the sampling and acceptance rules for acceptance rules (see 7.2, 2007 version 6.2). 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 standard by the National Refractory Standardization Technical Committee (SAC/TC193) and focal point. This standard was drafted unit. China Steel Group Refractories Co., Ltd., Henan Ruitai Refractory Technology Co., Ltd., Dashi Qiao City, built magnesium Brick Co., Ltd. The main drafters of this standard. Wu Yanxia, Zheng Desheng, Bai Wenxian, Liu Xijun, Liu Zhao, Ren Xiang Yang, Zhao Hongbo, Tang Jiabin, Yang Zongxin. This standard replaces the standards previously issued version.
- GB 2275-1987, GB 2275-2001, GB/T 2275-2007. Magnesia brick and magnesia brick

1 Scope

China's national product standard for magnesia bricks, magnesia-alumina bricks and magnesia-alumina spinel bricks. It specifies the terms and definitions, the classification, the shape and dimensions, the technical requirements, the test methods, the quality assessment procedures, the packaging, marking, transport and storage and the quality

certificate, and it applies to bricks used in industrial furnaces in steel, non-ferrous metals and building materials. Magnesite brick is the basic refractory in its plain form: dense sintered magnesite bonded and fired, highly resistant to basic slag and to iron oxide, and stable to very high temperature. Its weakness is thermal shock. Magnesite has a high thermal expansion and a low thermal conductivity, so a temperature change puts a large strain gradient across a brick that cannot relieve it, and a plain magnesite brick spalls when it is cycled. Adding alumina is what addresses that. Alumina reacts with magnesite to form spinel, and spinel in a magnesite matrix - whether formed in place during firing, in the magnesite-alumina brick, or added ready-made, in the magnesite-alumina spinel brick - creates a network of fine cracks around the spinel grains that arrest a propagating crack and absorb the strain. The result is a brick that keeps most of the chemical resistance of magnesite and survives thermal cycling, which is why it lines a cement kiln burning zone, a ladle and a furnace roof. So the standard classifies the three types and specifies for each the magnesite and alumina content, the bulk density and apparent porosity, the cold crushing strength, the refractoriness under load, the permanent linear change on reheating, and the thermal shock resistance - the property that separates them. Issued on 7 September 2017 and in force since 1 August 2018, it replaces GB/T 2275-2007.

This standard specifies the magnesium brick, magnesium aluminum brick and spinel magnesite terms and definitions, classification, shape and size, technical requirements, test methods, quality Assessment procedures, packaging, marking, transport, storage and quality certificates. This standard applies to steel, nonferrous metals and building materials such as industrial furnaces magnesite brick, magnesium aluminum brick and magnesium aluminum spinel brick.

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 2992.1 firebrick shape and size - Part 1. General purpose brick

GB/T 2997 dense shaped refractory products bulk density, apparent porosity and true porosity test method

GB/T 5069 magnesium aluminum refractory chemical analysis methods

GB/T 5072 refractory materials at room temperature compressive strength test methods

GB/T 5988 refractory heating permanent change test method

GB/T 7321 shaped refractory products sample preparation method

GB/T 10325 Shaped refractory products acceptance inspection sampling rules

GB/T 10326 shaped refractory products size, appearance and cross-section of the inspection methods

GB/T 16546 Shaped refractory products packaging, marking, transportation and storage
Refractory materials - X - ray fluorescence spectrometric chemical analysis - Cast glass method
Refractory materials - Thermal shock resistance test methods YB/T 370 Refractory material softening temperature test method (non-differential - heating method)

3 Terms and definitions

GB/T 10325 and defined by the following terms and definitions apply to this document.

3.1 Magnesiabrick Magnesite as the main raw material, the high temperature firing made of periclase as the main mineral alkaline refractory products.

3.2 Magnesite-aluminabrick Magnesite and corundum or bauxite as the main raw material, fired at high temperature to periclase-based mineral phase, combined with magnesium-aluminum spinel Phase of alkaline refractory products.

3.3 Magnesite-aluminaspinelbrick Magnesite and spinel as the main raw material, fired at high temperature to periclase and magnesium aluminum spinel as the main mineral composition of alkaline