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

GB/T 22589-2017

Replacing GB/T 22589-2008

Magnesia carbon bricks

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Quarantine;
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Foreword

This standard was drafted in accordance with the rules given in GB/T 1.1-2009. This standard replaces GB/T 22589-2008 "Magnesia carbon brick." Compared with GB/T 22589-2008, the main technical content changes as follows:

- Added MT-5D, MT-8D, MT-10D, MT-12D, MT-14D a total of five brands (see Table 1);
- Modify the bulk density technical indicators (see Table 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. Yingkou Jinlong Refractories Group, Liaoning Blue Flower Refractories Co., Ltd., Zhengzhou Zhendong Technology Co., Ltd. Division, Jinan Ludong Refractories Co., Ltd., Beijing Lear High Temperature Materials Co., Ltd. The main drafters of this standard. Fu Zhencai, Wang Jian Dong, Wei Zhang, Fan Lianwei, Hou Huifeng, Wang Junchao, Lv Renxiang, Liu Zaichun, Zhao Wei, Liu Jingxuan. This standard replaces the standards previously issued as.
- GB/T 22589-2008. Magnesia carbon brick

1 Scope

China's national product standard for magnesia carbon bricks. It specifies the classification, the technical requirements, the test methods, the inspection rules, and the marking, packaging, transport and storage of magnesia carbon bricks. This is the brick that lines a steelmaking converter and an electric arc furnace, and it works because of a combination that looks contradictory. Magnesia is highly refractory and resists basic slag, which is what a steelmaking furnace produces; graphite is not wetted by slag, conducts heat well and does not sinter. Bound together with a resin, the two give a brick that slag cannot penetrate, that survives thermal shock because the graphite conducts heat away and accommodates strain instead of cracking, and that keeps its strength at the temperature of liquid steel. Nothing else does all three, which is why the material displaced everything before it and

why converter campaigns lengthened from hundreds of heats to thousands when it arrived. Its weakness is the same graphite: it oxidises, and once the carbon at the hot face burns out the remaining magnesia is a porous skeleton that the slag washes away. So the standard specifies what governs oxidation resistance and wear alongside the ordinary refractory properties: the magnesia content and purity, the graphite content and its grade, the antioxidant additions - aluminium, silicon or magnesium metal - that protect the carbon, the bulk density and apparent porosity, the cold crushing strength, the hot modulus of rupture, and the oxidation resistance measured directly. The classification separates the grades by carbon content and by intended position in the vessel, since a converter lining is zoned and the trunnion and the slag line take different attack from the barrel. Issued on 7 September 2017 and in force since 1 August 2018, it replaces GB/T 22589-2008.

This standard specifies the classification and grades of magnesia carbon bricks, technical requirements, test methods, quality assessment procedures, packaging, marking, transportation, storage and Quality certificate. This standard applies to steel-making converter, electric furnace, ladle (refining furnace) and other magnesium carbon 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 2997 dense shaped refractory products bulk density, apparent porosity and true porosity test method

GB/T 3002 refractory high temperature strength test method

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

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 Methods for chemical analysis of carbonaceous, silicon carbide, nitride refractory materials

GB/T 16555 Refractory materials - X - ray fluorescence spectrometric chemical analysis - Cast glass method

3 Categories and grades

3.1 Magnesite carbon bricks by carbon content is divided into seven categories, divided by physical and chemical indicators 26 brands, see Table 1. Grade M, T is magnesium, carbon

Chinese Pinyin first Letters, followed by the figures that the mass fraction of carbon, A, B, C, D is the same level of different levels. Table

1 Magnesium carbon brick classification and grades MT-5A MT-8A MT-10A MT-12A MT-14A MT-16A MT-18A MT-5B MT-8B MT-10B MT-12B MT-14B MT-16B MT-18B MT-5C MT-8C MT-10C MT-12C MT-14C MT-16C MT-18C MT-5D MT-8D MT-10D MT-12D MT-14D

3.2 For products with special requirements, negotiated by the supply and demand sides.

4 Technical requirements

4.1 Magnesite carbon brick physical and chemical indicators should be consistent with the provisions of Table 2.