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

GB/T 5483-2024

Natural gypsum

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Foreword

This document was drafted in accordance with the rules provided in GB/T 1.1-2020 Directives for Standardization - Part

1. Rules for the Structure and Drafting of Standardizing Documents. This document serves as a replacement for GB/T 5483-2008 Natural Gypsum. In comparison with GB/T 5483-2008, apart from structural adjustments and editorial modifications, the main technical changes are as follows:

- a) The terms and definitions "natural gypsum", "natural anhydrite" and "natural mixed gypsum" are modified (see 3.1, 3.3 and 3.4; 3.4, 3.6 of Version 2008);
- b) The term and definition of "natural gypsum dihydrate" is added (see 3.2);
- c) The classification and labeling of natural gypsum products are added (see Chapter 4);
- d) The requirements for natural gypsum for building materials, natural gypsum for molds, natural gypsum for agriculture, natural gypsum for medicine and food, and natural gypsum for other purposes are added (see Chapter 5);

e) The test method for grade is modified (see 6.1;

6.2 of Version 2008);

f) The test methods for pH value, ferric oxide, acid-insoluble matter, water-soluble fluoride ion, fluoride ion, lead, arsenic, mercury, cadmium, chromium, thallium and selenium are added (see Chapter 6);

g) The "Inspection Rules" is modified (see Chapter 7; Chapter 7 of Version 2008). Please be noted that certain content of this document may involve patents. The institution issuing this document does not undertake the responsibility of identifying these patents. This document was proposed by China Building Materials Federation. This document shall be under the jurisdiction of National Technical Committee 406 on Non-metallic Mineral Products of Standardization Administration of China (SAC/TC 406). The drafting organizations of this document. Xianyang Nonmetallic Mineral Research and Design Institute Co., Ltd.; Anhui Hengtai New Material Technology Co., Ltd.; Beijing New Building Material Group Co., Ltd.; Shanghai Fengzhu New Materials Technology Co., Ltd.; Luchang Taishan Gypsum Building Materials Co., Ltd.; MACO Group Co., Ltd.; Huangmei Longyuan Gypsum Co., Ltd.; Zhejiang Hangkun Construction Group Co., Ltd.; Ningxia UP Security Technology Consulting Co., Ltd.; Hubei Juhai Environment Technology Co., Ltd.; Henan Building Materials Research and Design Institute Co., Ltd. The main drafters of this document. Zheng Changwen, Li Xiangfei, Ren Li, Qi Hongfei, Shu Shuiwang, Cao Yin, Guo Baitang, Fang Xinjun, Niu Xiaoyu, Liu Zhihao, Liu Yongchuan, Zhang Honglin, Zhang Yanyu, Qiu Hong, Luo Xinfeng, Song Huijuan, Gao Jun, Feng Weifang, Tian Hui, Zhang Wei, Tan Danjun. This document was firstly issued in 1985, firstly revised in 1996 and secondly revised in 2008. This is the third revision. Natural Gypsum

1 Scope

China's national standard for natural gypsum. Gypsum is calcium sulfate dihydrate, and its whole usefulness comes from the water bound in the crystal: heat it moderately and it gives up three quarters of that water to become the hemihydrate, plaster of Paris, which will take it back and set into a rigid solid when mixed with water again. Nothing else does this so cheaply or so predictably, which is why gypsum is the material of plasterboard, plaster, moulds and cement retarder. The same bound water is why a gypsum wall resists fire far better than its thickness suggests: it must all be driven off before the board can exceed 100 degrees C, and doing so absorbs a great deal of heat. The grade a buyer needs turns on purity, since clay, dolomite and anhydrite in the rock all dilute the set. The standard specifies the classification and labelling, requirements, test methods, inspection rules, marking, packaging, transport and storage of natural gypsum.

This document specifies the classification and labeling, requirements, test methods, inspection rules, marking, packaging, transportation and storage of natural gypsum. This document applies to the production, use and sale of natural gypsum products.

2 Normative References

The contents of the following documents constitute indispensable clauses of this document through the normative references in the text. In terms of references with a specified date, only versions with a specified date are applicable to this document. In terms of references without a specified date, the latest version (including all the modifications) is applicable to this document.

GB/T 2007.2 General Rules for the Sampling and Sample Preparation of Minerals in Bulk - Manual Method of Sample Preparation

GB 5009.75 National Food Safety Standard - Determination of Lead in Food Additives

GB 5009.76 National Food Safety Standard - Determination of Arsenic in Food Additives

GB 5009.93 National Food Safety Standard - Determination of Selenium in Food

3 Terms and Definitions

The following terms and definitions are applicable to this document.

3.1 natural gypsum Minerals and their processed products that exist mainly in the form of calcium sulfate dihydrate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) and anhydrous calcium sulfate (CaSO_4).

3.2 natural gypsum dihydrate Natural gypsum mainly exists in the form of calcium sulfate dihydrate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$).

3.3 natural anhydrite Natural gypsum that exists mainly in the form of anhydrous calcium sulfate (CaSO_4), and the ratio of the mass fraction of anhydrous calcium sulfate (CaSO_4) to the sum of the mass fractions of dihydrate calcium sulfate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) and anhydrous calcium sulfate (CaSO_4) is not less than 80%.

3.7 crystal water In crystalline substances, a certain number of water molecules are bound to ions or molecules by chemical bonding force.

4 Classification and Labeling

4.1 Classification Natural gypsum products are divided into natural gypsum mineral products and natural gypsum mineral processed products. Natural gypsum mineral products are divided into three categories in accordance with their main chemical components. natural gypsum dihydrate, natural anhydrite and natural mixed gypsum, which are respectively coded as G, A, and M.

5 Requirements

5.1 Natural Gypsum Mineral Products The natural gypsum dihydrate, natural anhydrite and

natural mixed gypsum shall comply with the provisions of Table 2.

5.2 Natural Gypsum Mineral Processed Products

5.2.1 Natural gypsum for building materials shall comply with the requirements of Table 3.

5.2.2 Natural gypsum for molds shall comply with the requirements of Table 4.

5.2.5 The calcium sulfate (mass fraction) and pH value of natural gypsum for other purposes shall be determined by negotiation between the supply-side and the demand-side.

6.1 Grade

6.1.1 The mass fraction of sulfur trioxide and crystal water shall be determined in accordance with the provisions of GB/T 5484.

6.2 Free Water, Chloride Ions, pH Value, Ferric Oxide, Acid-insoluble Matter, Water-soluble Fluoride Ions and Fluoride Ions In accordance with the provisions of GB/T 5484, carry out the test.

6.3 Calcium Sulfate Calculate in accordance with Formula (3).

6.4 Lead In accordance with the provisions of GB 5009.75, carry out the test.

7 Inspection Rules

7.1 Batching Principle Natural gypsum products are subjected to acceptance inspection and delivered in batches. 300 t of products produced stably and continuously under the same production process and under the same category of conditions constitutes one batch. If the amount is less than 300 t, it is also considered as one batch.

7.3 Inspection Categories

7.3.1 Exit-factory inspection See Table 7 for the exit-factory inspection items for natural gypsum products.

7.4 Determination Rules When all items of each category of product meet the requirements of Chapter 5, the batch of products is determined to be qualified. When one or more items are disqualified, sampling shall be carried out at twice the original sampling volume, and the disqualified items shall be re- inspected.

8 Marking, Packaging, Transportation and Storage

8.1 Marking Each package shall have the product name, serial No. of implemented Standard, net content, manufacturer name, address, and production date.