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Replacing GB/T 5483-2008

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, 3.5 and 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).

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Natural Gypsum

1 Scope

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

GB/T 5484 Methods for Chemical Analysis of Gypsum

GB/T 23349 Determination of Arsenic, Cadmium, Chromium, Lead and Mercury Contents for Fertilizers

GB 38400 Limitation Requirements of Toxic and Harmful Substance in Fertilizers

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 ($\text{CaSO}_4 \bullet 2\text{H}_2\text{O}$) and anhydrous calcium sulfate (CaSO_4).

3.2 natural gypsum dihydrate

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

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%.

3.4 natural mixed gypsum

Natural gypsum that exists mainly in the form of calcium sulfate dihydrate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) and 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 calcium sulfate dihydrate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$) and anhydrous calcium sulfate (CaSO_4) is less than 80%.

3.5 grade

The content of useful components or useful minerals in unit volume or unit mass of ore.

3.6 free water

The moisture in the air adsorbed by a substance.

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. Each category is divided into five specifications in accordance with their grade: special grade, first grade, second grade, third grade and fourth grade, which are respectively coded as KT, K1, K2, K3 and K4. Natural gypsum mineral processed products are divided into five categories in accordance with their purposes: 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, which are respectively coded as JC, MJ, NY, YS and QT. The classification of natural gypsum products is shown in Table 1.

5. In any of the following situations, type inspection shall be carried out:

- a) When a new product is put into production or when a product is finalized and identified;
- b) During normal production, it shall be carried out once a year;
- c) When there are relatively significant changes in raw materials, production processes, equipment, etc. that may affect product quality;
- d) When production is resumed after being suspended for more than three months;
- e) When there is a significant difference between the exit-factory inspection results and the previous type inspection results.

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. If the re-inspection results meet the requirements of Chapter 5, the batch of products will still be determined to be qualified; if the re-inspection results do not meet the requirements of Chapter 5, then, the batch of products will be determined to be disqualified.

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.

8.2 Packaging

8.2.1 Natural gypsum products are packaged in plastic woven bags or kraft paper bags lined with plastic film. The packaging shall be firm and neat.

8.2.2 The accompanying documents for bulk natural gypsum products shall include a product certificate.

8.3 Transportation and Storage

During transportation and storage, the products shall be protected from rain, moisture and damage, and shall not be mixed or transported with pesticides, fertilizers and chemicals, etc.

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