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Standard Specification for Gypsum¹

This standard is issued under the fixed designation C22/C22M; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This specification covers gypsum, calcium sulfate combined with two molecules of water in crystalline form and having the approximate chemical formula $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$.

1.2 The values stated in either inch-pound units or SI (metric) are to be regarded separately as the standard. Within the text, the SI units are shown in brackets. The values stated in each system shall be used independently of the other. Values from the two systems shall not be combined.

1.3 The text of this specification references notes and footnotes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the specification.

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

C11 Terminology Relating to Gypsum and Related Building Materials and Systems

C471M Test Methods for Chemical Analysis of Gypsum and Gypsum Products (Metric)^z

C472 Test Methods for Physical Testing of Gypsum, Gypsum Plasters, and Gypsum Concrete

3. Terminology

3.1 *Definitions:*

3.1.1 Definitions shall be in accordance with Terminology **C11**.

¹ This specification is under the jurisdiction of ASTM Committee **C11** on Gypsum and Related Building Materials and Systems and is the direct responsibility of Subcommittee **C11.01** on Specifications and Test Methods for Gypsum Products.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

4. Chemical Composition

4.1 Gypsum shall contain not less than 70.0 weight percent $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$.

4.2 The chemical composition, within the limits prescribed by **4.1**, shall be specified in the purchase order or contract.

5. Physical Properties

5.1 *Size*—If necessary, gypsum shall be crushed or ground, or both, to the size specified in the purchase order.

6. Sampling

6.1 *Bulk*—When gypsum is shipped in bulk, samples of approximately 5 lb [2 kg] each shall be taken at regular intervals during the complete loading or unloading of the carrier, in such a way as to accumulate not less than 200 lb [90 kg] of material and to represent correctly the percentages of both the coarse particles and the fines in the shipment. This material shall be broken to pass a 1-in. [25.0 mm] sieve, thoroughly mixed, and reduced by quartering to provide not less than a 1-lb [0.5 kg] sample for the laboratory.

6.2 *Packages*—When gypsum is shipped in packages, not less than 1 % of the packages shall be sampled. Samples shall be taken from both the surface and the center of the packages. These samples shall then be broken, mixed, and quartered in accordance with **6.1**.

6.3 *Laboratory Samples*—Each laboratory sample shall be placed immediately in an airtight container and shipped to the laboratory for testing.

7. Test Methods

7.1 The chemical composition of gypsum shall be determined in accordance with Test Methods **C471M**.

7.2 The physical properties of gypsum shall be determined in accordance with Test Methods **C472**.

8. Inspection

8.1 Inspection of the gypsum shall be agreed upon between the purchaser and the supplier as part of the purchase agreement.

9. Rejection

9.1 Rejection of gypsum that fails to conform to the requirements of this specification shall be reported to the

producer or supplier promptly and in writing. The notice of rejection shall contain a statement documenting how the gypsum has failed to conform to the requirements of this specification.

10. Certification

10.1 When specified in the purchase agreement, a manufacturer's or supplier's report shall be furnished at the time of shipment certifying that the product is in compliance with this specification.

11. Packaging and Package Marking

11.1 Gypsum shall be shipped either in packages or in bulk.

11.2 When shipped in packages for resale, the following information (see **Note 1**) shall be legibly marked on each package or on a tag of suitable size attached thereto:

11.2.1 Name of manufacturer,

11.2.2 Description of material, and

11.2.3 Net or gross weights, or both, of the package.

11.3 When shipped in bulk, a card containing the required information in accordance with **11.2** shall be conspicuously placed in the carrier.

NOTE 1—State law may require additional information.

12. Keywords

12.1 calcium sulfate; gypsum

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