



Standard Specification for Gypsum Concrete¹

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This standard has been approved for use by agencies of the U.S. Department of Defense.

1. Scope

1.1 This specification covers mill-mixed gypsum concrete, consisting essentially of calcined gypsum and suitable aggregate, requiring the addition of water only at the job site. Gypsum concrete is intended for use in the construction of poured-in-place roof decks or slabs. Two classes, based on the compressive strength and density, are covered.

1.2 The values stated in either inch-pound units or SI units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the standard.

2. Referenced Documents

2.1 *ASTM Standards*:²

C11 Terminology Relating to Gypsum and Related Building Materials and Systems

C28/C28M Specification for Gypsum Plasters

C35 Specification for Inorganic Aggregates for Use in Gypsum Plaster

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

3. Terminology

3.1 Definitions of terms shall be in accordance with Terminology **C11**.

4. Materials and Manufacture

4.1 Gypsum concrete shall consist of calcined gypsum to which is added aggregates, wood chips, or wood shavings in proportion to meet the applicable requirements of this specification.

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.

4.2 *Calcined Gypsum*—Specification **C28/C28M**.

4.3 *Aggregates*—Specification **C35**.

4.4 *Wood Chips or Wood Shavings*, shall be dry wood, uniform and clean in appearance, passing a 1-in. [25-mm] sieve, and not more than 1/16 in. [1.5 mm] thick.

5. Physical Properties

5.1 *Setting Time*—Gypsum concrete shall set in not less than 20 min and not more than 90 min.

5.2 *Compressive Strength*—Gypsum concrete shall have the following compressive strength for the respective classes:

Class	Compressive Strength, min, psi [MPa]
A	500 [3.5]
B	1000 [7.0]

5.3 *Density*—Gypsum concrete, Class A, shall have a density of not more than 60 lb/ft³ [960 kg/m³].

6. Sampling

6.1 Randomly select at least 1 % of the packages, but not less than five packages. Take samples from both the outer portion and the center of each package. Mix the samples so obtained to provide a composite sample of not less than 15 lb [6.5 kg]. Immediately place the sample in a clean, dry, airtight container for delivery to the laboratory.

7. Test Methods

7.1 Determine the physical properties of gypsum concrete in accordance with Test Methods **C472**.

7.1.1 Determine the setting time by the Vicat method.

8. Inspection

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

9. Rejection

9.1 Rejection of gypsum concrete 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 concrete has failed to conform to the requirements of this specification.

10. Certification

10.1 When specified in the purchase agreement, a producer'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 Marking

11.1 Gypsum concrete shall be shipped dry and free of lumps.

11.2 When shipped for resale, the following information shall be legibly marked on each package or on a tag of suitable size attached thereto:

11.2.1 Name of the manufacturer or the seller,

11.2.2 Brand,

11.2.3 Description, and

11.2.4 Net and gross weight of the package.

12. Keywords

12.1 aggregates; calcined gypsum; gypsum; gypsum concrete

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