



Designation: C317/C317M – 24

Standard Specification for Gypsum Concrete¹

This standard is issued under the fixed designation C317/C317M; 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.

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.

1.3 *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
 - 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.

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. Current edition approved April 1, 2024. Published April 2024. Originally approved in 1953. Last previous edition approved in 2019 as C317/C317M – 00 (2019). DOI: 10.1520/C0317_C0317M-24.
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. 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.
- 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 Determine the physical properties of gypsum concrete in accordance with Test Methods C472.
 - 5.1.1 *Setting Time*—Gypsum concrete shall set in not less than 20 min and not more than 90 min determined by the Vicat method.
 - 5.1.2 *Compressive Strength*—Gypsum concrete shall have the following compressive strength for the respective classes:

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

- 5.1.3 *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. Inspection

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

*A Summary of Changes section appears at the end of this standard