



## Standard Specification for Gypsum Veneer Plaster<sup>1</sup>

This standard is issued under the fixed designation C 587; 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 Department of Defense.*

### 1. Scope \*

1.1 This specification covers calcined gypsum mixed at the mill with other ingredients to control working quality and setting time; specifically designed as a veneer plaster to be applied over gypsum base for veneer plasters, masonry or concrete surfaces to a maximum thickness of ¼ in. (6.4 mm) providing a surface ready for decoration.

NOTE 1—Specification C 843 contains application procedures for gypsum veneer plaster.

1.2 This specification covers test methods for determining the physical properties of gypsum veneer plasters and sets forth minimum requirements that must be met.

1.3 The values stated in inch-pound units are to be regarded as the standard. The SI (metric) values given in parentheses are approximate and are provided for information purposes only.

1.4 The text of this standard references notes and footnotes which provide explanatory material. These notes and footnotes shall not be considered as requirements of the standard.

1.5 The following safety hazards caveat applies only to the Test Methods portion, Section 5 of this specification: *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.*

### 2. Referenced Documents

#### 2.1 ASTM Standards:

C 11 Terminology Relating to Gypsum and Related Building Materials and Systems<sup>2</sup>

C 473 Test Methods for Physical Testing of Gypsum Panel Products<sup>2</sup>

C 588 Specification for Gypsum Base for Veneer Plasters<sup>2</sup>

C 843 Specification for Application of Gypsum Veneer Plaster<sup>2</sup>

<sup>1</sup> 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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<sup>2</sup> Annual Book of ASTM Standards, Vol 04.01.

### 3. Terminology

#### 3.1 Definitions:

3.1.1 Definitions of terms shall be in accordance with Terminology C 11 and Specification C 843.

#### 3.2 Definition of Term Specific to This Standard:

3.2.1 *gypsum veneer plaster systems, n*—veneer plaster applied in accordance with Specification C 843 to gypsum base for veneer plasters.

### 4. Physical Properties

4.1 *Joint Strength*—Gypsum veneer plaster systems applied in accordance with Specification C 843 shall be tested in accordance with 5.9. The breaking load shall be not less than the parallel to surfacing loads specified in Specification C 588.

4.2 *Bond Strength*—The bond strength of the gypsum veneer plaster to the gypsum veneer base and, where applicable, between the base coat plaster and the finish coat shall not delaminate when tested in accordance with 5.6.

4.3 *Impact Strength*—Gypsum veneer plaster systems shall not crack or lose bond beyond the impact area when tested in accordance with 5.7.

4.4 *Flexure*—Gypsum veneer plaster systems shall exhibit crack resistance within the field of the gypsum base for veneer plasters such that radial or random cracking shall extend not more than ½ in. (13 mm) from the break line at failure when tested in accordance with 5.8. At rupture of the panel the veneer plaster shall be securely bonded to the face paper.

### 5. Test Methods

5.1 *Materials*—Gypsum Base for Veneer Plaster, see Specification C 588.

5.2 *Sampling*—Sample not less than 1 % of the packages, but not less than 5 packages. Select packages to be sampled at random. Take samples both from the outer portion and the center of each package. Thoroughly mix the materials so obtained to provide a composite sample of not less than 15 lb (6.8 kg). Place this composite sample immediately in a clean, dry, airtight container for delivery to the laboratory.

5.3 *Test Unit Preparation*—From the sample, prepare panels of veneer plaster system and cut four 2 ft (600 mm) square, and three 12 by 16 in. (300 by 400 mm) specimens.

5.4 *Conditioning*—Condition specimens to constant weight

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

at a temperature of  $85 \pm 15^{\circ}\text{F}$  ( $29.5 \pm 8.5^{\circ}\text{C}$ ) and relative humidity of  $50 \pm 2\%$  (see Note 2). Test specimens individually after constant weight is reached.

NOTE 2—Laboratory test results indicate that conditioning temperatures may range from 70 to  $100^{\circ}\text{F}$  (21 to  $38^{\circ}\text{C}$ ) without significantly affecting the results. However, relative humidity is critical. Therefore, specimens shall be tested within 10 min upon removal from the conditioning chamber.

**5.5 Number of Tests**—Run each test in triplicate.

**5.6 Bond Strength:**

**5.6.1 Significance and Use**—The bond strength test is designed to evaluate the bond of veneer plaster to veneer plaster base and between the base coat and finish coat. The degree of correlation between these test methods and service performance has not been determined.

**5.6.2 Procedure**—Select three 2 ft (600 mm) square specimens. Raise each specimen and slam the back side (face not treated with veneer plaster) on a bare concrete floor repeatedly until the specimen is broken.

**5.6.3 Report**—Report whether the sample passes or fails the bond test. The sample fails if the bond to the veneer base or between the finish coat and base coat delaminates on any one of the specimens.

**5.6.4 Precision and Bias**—No information is presented about either the precision or bias of the bond test since the test result is nonquantitative.

**5.7 Impact Strength:**

**5.7.1 Significance and Use**—The impact strength is designed to test the effect of impact from a hard object on the surface of the veneer plaster. The degree of correlation between this test method and service performance has not been determined.

**5.7.2 Apparatus:**

**5.7.2.1** A stand with a solid, flat base at least 2 ft (600 mm) square with a means of holding the steel ball and releasing it from a height of 36 in. above the base, without imparting additional force.

**5.7.2.2** A  $1\frac{1}{2}$  in. (38 mm) diameter polished steel ball weighing  $7.8 \pm 0.1$  oz ( $221 \pm 3$  g).

**5.7.3 Procedure**—Select one 2 ft (600 mm) square. Place the specimen horizontally, with the plaster surface face up, on the base of the apparatus. Drop the steel ball three times onto different areas of the panel surface.

**5.7.4 Report**—Report whether the sample passes or fails the impact test. The sample fails if there is a loss of bond or cracking beyond the impact area on any one of the drops.

**5.7.5 Precision and Bias**—No information is presented about either the precision or bias of the impact test since the test result is nonquantitative.

**5.8 Flexure:**

**5.8.1 Significance and Use**—The flexure test is designed to test the effect on the resistance to cracking and bond of the veneer plaster to the veneer plaster base while being flexed. The degree of correlation between this test method and service performance has not been determined.

**5.8.2 Apparatus**—Use the apparatus described in Test Methods C 473 for Method B.

**5.8.3 Procedure**—Select three 12 by 16 in. (300 by 400

mm) specimens. Subject each specimen to a continuous, midpoint, loading applied at a rate of  $1\text{ in./min} \pm 5\text{ s}$  ( $25\text{ mm/min} \pm 5\text{ s}$ ) downward to the back of the panel (plaster surface in tension) supported over a clear span of 14 in. (356 mm) until failure.

**5.8.4 Report**—Report whether the sample passes or fails the flexure test. The sample fails if any one of the specimens shows cracking more than  $\frac{1}{2}$  in. (13 mm) from the break line or if the bond of the veneer plaster to the paper fails.

**5.8.5 Precision and Bias**—No information is presented about either the precision or bias of the flexure test since the test result is nonquantitative.

**5.9 Joint Strength:**

**5.9.1 Significance and Use**—The joint strength test is designed to test strength of the joint between two adjacent gypsum veneer panels that have been covered with veneer plaster. The degree of correlation between this test method and service performance has not been determined.

**5.9.2 Apparatus**—Use the apparatus described in Test Methods C 473 for Method B.

**5.9.3 Specimen Preparation**—Cut two 8 by 12-in. (200 by 300 mm) pieces of gypsum base for veneer plaster for each specimen to be tested. One 12-in. edge of each piece shall be the paper-bound edge. Place the two pieces of gypsum base for veneer plaster face down with the paper-bound edges forming the joint. Apply a pregummed tape over the joint. (The tape will keep the joint from flexing during the specimen preparation.) Turn face up and apply joint tape and gypsum veneer plaster in accordance with Specification C 843 using the method titled “Reinforcement Secured and Embedded with Veneer Plaster.”

**5.9.4 Procedure**—Condition the specimen and determine the flexural strength in accordance with Test Methods C 473 Method B. Apply the load parallel to and directly over the back of the joint.

**5.9.5 Report**—Calculate and report the average breaking load in pound-force or newtons, rounded to the nearest 1 lbf (N).

**5.9.6 Precision and Bias**—The precision and bias for measuring joint strength are essentially as specified in Test Methods C 473.

## 6. Inspection

**6.1** Inspection of the gypsum veneer plaster shall be agreed upon between the purchaser and the supplier as part of the purchase agreement.

## 7. Rejection and Rehearing

**7.1** Rejection of gypsum veneer plaster 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 veneer plaster has failed to conform to the requirements of this specification.

## 8. Certification

**8.1** 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.

## 9. Packaging and Package Marking

9.1 Gypsum veneer plaster shall be dry and free from lumps, and shall be shipped in packages.

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

9.2.1 Name of producer or supplier,

9.2.2 Brand,

9.2.3 Description, and

9.2.4 Net or gross weight, or both, of package.

## 10. Keywords

10.1 gypsum; gypsum veneer plaster; plaster; veneer plaster

## SUMMARY OF CHANGES

This section identifies the location of changes to this specification that have been incorporated since the last issue, C 587-97<sup>e1</sup>.

(1) The old section 5.1 on Significance and Use was deleted.

(2) Significance and Use, Report, and Precision and Bias sections were added to each test method.

(3) An Apparatus section (5.7.2) was added.

(4) The old section 5.8 on Precision and Bias was deleted.

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