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An American National Standard

Standard Specification for Application of Gypsum Veneer Plaster[1]

This standard is issued under the fixed designation C 843; 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.

ε[1] NOTE—11.2 was editorially corrected May 2003.

1. Scope *

1.1 This specification covers the minimum requirements for and methods of applying gypsum veneer plaster.

1.2 Where a specific degree of fire resistance is required for veneer plaster systems, applicable building code regulations shall be followed.

1.2.1 Details of construction for a specific assembly to achieve the required fire resistance shall be obtained from reports of fire-resistance tests, engineering evaluations, or listings from recognized fire testing laboratories.

1.3 Where a specific degree of sound control is required for veneer plaster assemblies and constructions, details of construction shall be in compliance with official reports of tests conducted in recognized sound testing laboratories in accordance with the applicable sound tests of Test Methods E 90, C 423, or E 492.

NOTE 1—To ensure desirable results, coordinate this specification with Specification C 844.

NOTE 2—General information regarding matters of a contractual nature concerning veneer plaster work is found in Appendix X1. Additional technical information related to veneer plastering is provided in Appendix X2.

1.4 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 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.

2. Referenced Documents

2.1 *ASTM Standards:*

C 11 Terminology Relating to Gypsum and Related Building Materials and Systems[2]

C 423 Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method[3]

C 587 Specification for Gypsum Veneer Plaster[2]

C 588 Specification for Gypsum Base for Veneer Plasters[2]

C 631 Specification for Bonding Compounds for Interior Gypsum Plastering[2]

C 844 Specification for Application of Gypsum Base to Receive Gypsum Veneer Plaster[2]

C 1047 Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base[2]

E 90 Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements[3]

E 492 Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine[3]

3. Terminology

3.1 *Definitions:*

3.1.1 See Terminology C 11.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *base coat, n*—veneer plaster trowel or machine applied as the first coat of a two-component system.

3.2.2 *finish coat, n*—veneer finish plaster trowel or machine applied as the second coat over the base coat plaster in a two-component system.

3.2.2.1 *smooth-trowel finish, n*—a finish resulting from steel troweling with a minimum of water after the plaster has become firm. A smooth finish free of trowel marks, blemishes, or other imperfections.

3.2.2.2 *texture finish, n*—a finish resulting from (*1*) trowel application followed by floating or texturing of the surface with any of a variety of tools using a minimum of water or (*2*) machine application, left as applied or followed by hand texturing.

[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 C11.03 on Specifications for Application of Gypsum and Other Products in Assemblies.

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[2] *Annual Book of ASTM Standards*, Vol 04.01.

[3] *Annual Book of ASTM Standards*, Vol 04.06.

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

3.2.3 *joint-reinforcing embedment, n*—the cementitious material used to embed the strip material that is compatible with the veneer plaster used.

3.2.4 *one-component system, n*—a veneer plaster system designed for application directly over approved bases in a single plaster mix applied in a single coat or double-back operation with the same material.

3.2.5 *reinforced joint, n*—a joint between gypsum base that is reinforced with strip material embedded in a cementitious material.

3.2.6 *reinforcing, n*—joint reinforcing tape or mesh (strip material) that is applied over flat joints and interior angles.

3.2.7 *two-component system, n*—a veneer plaster system involving two separate materials mixed and applied separately for base coat and finish coat.

3.2.8 *veneer plaster system, n*—gypsum veneer plaster applied to (*1*) a gypsum base in accordance with 10.1 or (*2*) properly prepared masonry or monolithic concrete surfaces, neither side of which is exposed to moisture. The plaster shall be applied with one or more components not exceeding ¼ in. (6.4 mm) in total thickness.

4. Delivery of Materials

4.1 All manufactured materials shall be delivered in the original packages, containers, or cartons bearing the brand name and manufacturer identification.

5. Protection of Materials

5.1 Plasters and other cementitious materials shall be kept dry until ready to be used; they shall be kept off the ground, under cover, and away from damp walls and surfaces.

6. Environmental Conditions

6.1 *Temperature*—When the ambient outside temperature at the building site is less than 55°F (13°C), maintain a temperature in the building of not less than 55°F (13°C) or not more than 80°F (27°C) for not less than 24 h prior to the application of veneer plaster and for one week after the veneer plaster has set or until the veneer plaster has dried. Distribute heat evenly in all work areas, and use deflection or protective screens to prevent concentrated or uneven heat or cold on the veneer plaster.

NOTE 3—The requirements in 6.1 will minimize the cracking of veneer plaster due to structural movements caused by thermal changes from temperature extremes; and dry-outs due to hot spots caused by concentrated heat.

6.2 *Ventilation*—Ventilation shall be provided to remove excess water given off through the drying process.

7. Materials

7.1 *Gypsum Base for Veneer Plasters* (hereinafter referred to as "gypsum base") Specification C 588.

7.2 *Veneer Plasters*—Specification C 587.

7.3 *Reinforcing*—Noncorrosive strip providing the joint strength requirements of Specification C 587.

7.4 *Liquid Bonding Compounds*—Specification C 631 (see X2.3).

7.5 *Water*—Water shall be clean, fresh, and of potable water quality.

7.6 *Accessories*—Specification C 1047.

8. Surface Preparation

8.1 *Examination*—Carefully examine all surfaces, including but not limited to, unit masonry, monolithic concrete, gypsum bases of all types, and accessories to receive veneer plaster, before the veneer plaster is applied. Notify the proper authorities promptly of all unsatisfactory conditions. The examination shall determine whether the gypsum base has been exposed to excessive sunlight. Do not apply veneer plaster until after such unsatisfactory conditions are rectified to the satisfaction of the plastering contractor.

NOTE 4—The bond of alkaline veneer plaster to gypsum base may be impaired if the base is exposed to direct light or sunlight for extended periods.

8.1.1 Do not apply veneer plaster over any surfaces of unit masonry or concrete that have been coated with any bituminous compound or other waterproofing or damproofing or form release agent.

8.2 *Conditioning of Surfaces*:

8.2.1 Immediately before the plaster is applied, wet down the masonry surfaces on which suction shall be reduced. Visible water shall not remain on the surface.

8.2.2 Carefully examine accessories, such as corner beads, control joints, casing beads, etc., to ensure that they are straight, curved, plumb, level, square, or true to the required angles and have been applied in a manner to ensure full coverage of flanges before the plaster is applied.

8.3 *Monolithic Concrete Surfaces*—Clean monolithic concrete surfaces of all dust, loose particles, and other foreign matter. Completely remove all grease, oil, noncompatible curing compounds, and form releasing agents. Remove all ridges and protrusions greater that ⅛ in. (3.2 mm) and fill all depressions greater than ¼ in. (6.4 mm) level with portland cement mortar and allow to set and dry. Any further preparation shall be as recommended by the veneer plaster manufacturer.

8.4 *Gypsum Base Joint Reinforcement*—Reinforce all interior angles and flat joints prior to application of the veneer plaster over the base.

8.4.1 *Interior Angles*—Position and secure reinforcement with staples (on 12-in. (305-mm) centers, one side only), veneer plaster, or other cementitious material compatible with the veneer plaster or by using self-adhering strip reinforcement. When stapling, staple along the ceiling edge only for wall-to-ceiling angles and along one edge for wall-to-wall angles. When securing reinforcement with veneer plaster, reinforcement shall be thoroughly embedded so that embedment material is both under and covering reinforcement.

8.4.2 *Flat Joints*—Center reinforcement over the joint line of the gypsum base and secure with staples or veneer plaster if not using self-adhering reinforcement. Keep reinforcement tight and flat against the gypsum base, and when stapling, position the staples no farther than 24 in. (610 mm) apart, staggered along each edge. Embed reinforcement and continue application of the veneer plaster over the field of the base. (**Warning**—This method provides minimum reinforcement of the joints. To minimize incidence and severity of joint ridging

and cracking, use one of the following methods (8.4.2.1, 8.4.2.2, or 8.4.2.3) in the absence of any specific method recommended by the veneer plaster manufacturer. Where paper tape and setting-type joint compounds are used, use 8.4.2.3.)

8.4.2.1 *Reinforcement over Set Veneer Plaster*—Tightly trowel veneer plaster over the joint line leaving the plaster feathered out to a width of about 6 in. (152 mm) flush with the face of the gypsum base. Allow the plaster to set; then secure reinforcement over the joint line as described in 8.4.2.

8.4.2.2 *Reinforcement Secured and Embedded with Veneer Plaster*—Apply reinforcement over the joint line as described in 8.4.2. Tightly trowel the plaster over the reinforcement along the joint line to provide thorough embedment of the reinforcement. Allow the joint embedment to set before proceeding with general plastering.

8.4.2.3 *Reinforcement Embedded (no staples)*—Tightly trowel the embedment material to a depth of about 1/32 in. (0.8 mm), working the trowel in both directions along the joint line. Center the reinforcement over the joint line. Firmly and evenly press the reinforcement into the soft embedment material using a little soft material on the trowel to bury it completely, and leave the embedment material feathered out to a width of about 6 in. (152 mm) flush with the face of the gypsum base. Allow the embedment material to set before proceeding with general plastering.

9. Mixing

9.1 Do not use frozen, caked, or lumpy material. Do not retemper or use material that has partially set. Mix each batch separately. Clean mixers thoroughly after each batch so as not to accelerate the following batches. This can be done by spray hosing the mixer paddle and containers immediately after each batch. Water ratios and other techniques used for mixing shall conform to the manufacturer's recommendation for specific veneer plaster products. In the absence of explicit directions, follow the recommendations in X2.1.

9.2 *Setting Time*—Setting times are carefully controlled by the manufacturer. Do not make adjustments to the setting time on the job. If problems with setting develop under unusual job conditions, consult the manufacturer of the veneer plaster for recommendations.

9.2.1 Do not use gauging, molding, or casting plasters, lime, gypsum, Keene's cement, portland cement, etc. to adjust the veneer plaster setting time.

9.3 Occasionally, special textures are desired that require additional sand. Approval of the veneer plaster manufacturer shall be obtained prior to any such additions.

10. Application

10.1 *General*—Veneer plasters have widely differing working properties, physical characteristics, and limitations regarding their compatibility with one another and with various bases. Follow the particular methods, techniques, limitations, and procedures set forth by individual manufacturers for their product. In the absence of manufacturers' directions, follow the recommendations in X2.2.

10.2 *Plaster Thickness*—Measure the plaster thickness from the face of the base to which it is applied, exclusive of joint treatment. The minimum thickness shall be as recommended by the manufacturer of the plaster used but in no case less than shown as follows:

Base coats (trowel applied)	1/16 in. (1.6 mm) min
Base coats (spray applied)	1/16 in. (1.6 mm) min
Finishes (two-component systems)	1/32 in. (0.8 mm) to 1/16 in. (1.6 mm) min
One-component systems	1/16 in. (1.6 mm) min

10.3 Barriers shall be provided to prevent the free circulation of hot, dry winds over the face of freshly applied plaster.

11. Electric Radiant Heat Cable

11.1 Veneer plaster shall be applied to electric heat cable systems in accordance with the veneer plaster manufacturer's directions. In the absence of manufacturer's directions follow the recommendations in X2.5.

11.2 Veneer plaster shall not be applied over heating systems in which the wire temperature will, at any time, be in excess of 125°F (52°C).

12. Keywords

12.1 electric heat cable; gypsum; plaster; veneer plaster

APPENDIXES

(Nonmandatory Information)

X1. GENERAL INFORMATION

X1.1 Construct and maintain scaffolding in strict conformity with applicable laws and ordinances so as not to interfere with or obstruct the work of others.

X1.2 Coordinate the work with the work of other trades.

X2. TECHNICAL INFORMATION

X2.1 *Mixing:*

X2.1.1 *Equipment*—A paddle-type agitator fitted to a ½-hp (373-W) heavy-duty, electric drill, rated from 900 to 1000 rpm (no load), and a clean drum of convenient size are recommended for rapid, efficient mixing of veneer plasters.

X2.1.2 *Procedure:*

X2.1.2.1 Put all but 1 or 2 qt (0.94 or 1.89 L) of the proper amount of water in the mixer for each bag of veneer plaster to be mixed.

X2.1.2.2 Add the veneer plaster to the water and immediately mix until uniformly wetted. Veneer plaster may be added while the agitator is turning.

X2.1.2.3 Continue mixing, adding water to obtain the desired lump-free mortar consistency.

X2.1.2.4 When mixing plaster for spray application, mix to a consistency so that 75 to 90 % of the batched mortar will pass a No. 8 (2.36-mm) sieve without shaking. Make sure the plaster is specifically designed for spray application to avoid quick set problems.

X2.1.2.5 Do not overmix. Three to four minutes is usually sufficient to attain fluidity.

X2.2 *Application:*

X2.2.1 *One-Component Plasters*—Apply the plaster with sufficient material and pressure to provide a good bond on the gypsum bases or other bases as approved by the veneer plaster manufacturer. Double back immediately with the same mixer batch of plaster to the desired thickness. Straighten to a true surface without application of water (water will cause blistering when applied at this time). Allow the material to "take-up" and texture with a float or sponge as desired. If a smooth finish is required, allow the plaster to become firm (so that water can be used without blistering) and trowel, using a minimum of water, to achieve a smooth finish, free of catfaces, trowel marks, blemishes, or other imperfections. Complete finishing before the veneer plaster sets.

X2.2.2 *Two-Component Plasters*—The finish component coat may be applied over set but still "green," partially dry, or dry base coat. Avoid application of a second component over a base coat that is damp on joints but dry in the field. It may result in photographing of the joints.

X2.2.3 *Base Coat-Hand Application*—Apply the base coat with sufficient material and pressure to provide a good bond on the gypsum bases or other bases as approved by the veneer plaster manufacturer and straighten to a true surface without application of water. Leave the surface sufficiently rough to provide a mechanical key for the finish coat.

X2.2.4 *Base Coat-Machine Application*—First spray flat joints, beads, and interior angles, and work the material with hand tools to cover the reinforcement, fill the beads, straighten the angles, and feather out the plaster over the joints. Proceed with full areas by spraying with a broad sweeping motion, holding the nozzle close enough to the surface to avoid excessive overspray and buildup in the angles. First apply a light coating while moving in one direction; then immediately double back over the same area, sweeping the nozzle in the opposite direction to obtain a level coat that requires no further working, and that is suitable to receive the finish component coat on setting.

X2.2.5 *Smooth-Trowel Finish*—Apply the plaster by troweling with firm pressure, then doubling back and filling out to a true, even surface. After the plaster has become firm, trowel it well with a minimum amount of water to a smooth finish, free of catfaces, blisters, trowel marks, blemishes, or other imperfections.

X2.2.6 *Texture Finishes*—Apply the plaster over the base coat by troweling thoroughly, building up to an even surface, and then floating with a variety of tools using a minimum of water. It may also be sprayed (depending on the type of texture desired) to a true, even surface free of slick spots or other blemishes.

X2.3 *Bonding Compounds*—Bonding compounds meeting Specification C 631 may be used to bond plaster to portland cement concrete and other sound surfaces. Such bonding agents may be used at the discretion of the specifier who may require performance records from the bonding agent manufacturer. Apply the bonding agent according to the bonding agent manufacturer's directions.

X2.4 *Heating and Ventilation*—A portion of the water used in mixing veneer plaster is necessary for the chemical reaction that rehydrates and hardens the plaster. The excess amount required for mixing and application must be removed from the plaster after set has taken place. Minimum circulation of air is desirable to prevent dry outs.

X2.4.1 Adequate ventilation of attics or similar unheated spaces above gypsum plaster systems is essential to the performance of these systems and shall be designed and provided by others per ASHRAE Fundamentals Handbook or applicable building code.

X2.5 *Electric Radiant Heat Cable*—Apply veneer plaster over electric radiant heat cable according to this specification except as follows:

X2.5.1 Treat flat joints according to 8.4.2 before the electric heating cable is installed,

X2.5.2 Inspect and test the heating system before applying the veneer plaster,

X2.5.3 Apply veneer plaster in a tight scratch coat flush with the cable, working the trowel parallel to the heating cable. Immediately double back before the scratch has set and build up a thickness of veneer plaster over the cable to a minimum of 1/16 in. (1.6 mm) or a maximum of ⅛ in. (3.2 mm),

X2.5.4 Do not turn the heating system on until the veneer plaster has dried completely. Deactivate the heating system and provide supplemental heat as required while paint is being applied. Activating the electric heating cable while the veneer plaster is wet or while paint is being applied may produce photographing of the cables. If the room temperature is more than 15°F (8°C) below the desired temperature after decoration

is complete, turn up the heat in 5°F (3°C) increments per 24 h period.

SUMMARY OF CHANGES

Committee C-11 has identified the location of selected changes to this standard since the last issue of C 843 that may impact the use of this standard.

(1) X2.4.1, X2.4.2, X2.4.3, X2.4.4, X2.4.5, and X2.4.6 were replaced with a new X2.4.1.