

SECTION 09220

PORTLAND CEMENT PLASTER

PART 1 - GENERAL

1.01 DESCRIPTION

- A. This Section describes the requirements for furnishing and installing the following type(s) of portland-cement plaster:
 - 1. Three-coat application over metal lath.
- B. Related Sections:
 - 1. Cold-formed metal framing is specified in Section 05400.
 - 2. Gypsum sheathing is specified in Section 06169.
 - 3. Wall membrane is specified in Section 07195.
 - 4. Metal lath and accessories are specified in Section 09207.
 - 5. Painting is specified in Section 09900.

1.02 SUBMITTALS

- A. Product Data: Manufacturer's written recommendations, proportion mixes, and installation instructions for each product, including data showing compliance with specified requirements.
- B. Samples:
 - 1. For initial selection purposes, furnish manufacturer's color charts consisting of actual units or sections of units at least 12-inches square showing full range of colors, textures, and patterns available for each type of finish.
 - a. Where finish involves normal color and texture variations, include sample sets composed of two or more units showing full range of variations expected.
 - 2. For verification purposes, furnish units at least 12-inches square sets of each type of texture and color, showing full range of variations expected in the completed work.
- C. Certification from an independent Testing Agency that aggregates comply with specified requirements.

1.03 QUALITY ASSURANCE

- A. Code Requirements: Comply with applicable requirements of CBC Sections 2508.
- B. Allowable Tolerances of Finished Surface: Maximum deviation from true plane shall not exceed 1/4-inch as measured from the line of a 5-foot straightedge placed at any location on the surface.
- C. Field-Constructed Mock-Up: Prior to plastering work, fabricate panels for each type of finish and application required to demonstrate aesthetic effects of application and qualities of materials and application.
 - 1. Locate mock-ups on site where directed by the Architect.
 - 2. Erect a 4-foot x 4-foot mock-up using materials and methods to be incorporated in the work.
 - 3. Demonstrate range of aesthetic effects, including color, texture, and workmanship to be expected in the completed work.
 - 4. Retain and maintain mock-ups during construction in undisturbed condition as a standard for judging completed plaster work.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver manufactured materials in original unopened packages or containers with manufacturer's label intact and legible.
- B. Keep cement and lime dry, stored off the ground, under cover, and away from damp surfaces.
- C. Remove wet and deteriorated materials from Project site.

1.05 JOB CONDITIONS

- A. Environmental Requirements:
 - 1. Provide sufficient heat and ventilation at enclosed areas where plastering is being performed to allow cement plaster to properly cure.
 - 2. Take precautionary measures necessary to ensure that excessive temperature changes do not occur.
 - 3. Cold Weather Requirements: Do not apply cement plaster unless minimum ambient temperature of 50-degrees F. has been and continues to be maintained for a minimum of 48-hours prior to application and until plaster is cured.
 - 4. Hot Weather Requirements: Protect cement plaster from uneven and excessive evaporation during hot, dry weather.
- B. Protection:
 - 1. Cover building openings in areas adjacent to plastering work with plastic film.
 - 2. Protect finished surfaces installed prior to plastering by covering with a suitable non-staining material. Cover metal frames with plastic film.
 - 3. Maintain protection in place until completion of plastering work.
- C. Pre-Application Conference: Prior to commencement of portland cement plastering, hold a pre-application conference at the Project site to discuss materials and procedures to be used. Conference shall be attended by the Architect, Contractor, Owner's Representative and plastering subcontractor.

PART 2 - PRODUCTS

2.01 BASE COAT MATERIALS

- A. Portland Cement: ASTM C150, Type I or Type II.
- B. Hydrated Lime: ASTM C206, Type S, certified not less than 99-percent hydrated.
- C. Aggregates: ASTM C897.
 - 1. Gradation, Base (Scratch and Brown) Coats:

U.S. Standard Sieve	Percent Retained by Weight (+2%)	
	Minimum	Maximum
No. 8 (2.36 mm)	0	10
No. 16 (1.18mm)	10	40
No. 30 (600 um)	30	65
No. 50 (300 um)	70	90
No. 100 (150 um)	95	100
 - 2. Independent Testing Agency shall sample aggregate on the Project site and test for compliance with specified ASTM C897 standard.
- D. Fiber Reinforcing: 1/2-inch alkaline-resistant chopped-glass fibers or alkaline-resistant polypropylene fibers. Detergent admixtures or clay to aid in pumping plaster will not be permitted.
- E. Water: Clean, potable, and free from substances harmful to plaster.

2.02 FINISH COAT MATERIALS

- A. Factory-prepared product containing all materials required for finish coat, except water; Peerless Stucco, La Habra, or approved equal; color as selected to match approved sample and mock-up panel, smooth sand float finish.

2.03 CEMENT PLASTER

- A. Mixing:
 - 1. General:
 - a. Accurately proportion materials for each plaster batch with measuring devices of known volume.
 - b. Size batches for complete use within maximum of one-hour after mixing.
 - c. Retemper plaster stiffened from evaporation, but do not use or retemper partially hydrated cement plaster.
 - d. Do not use caked or lumping materials.
 - e. Mix factory-prepared plaster in accordance with the manufacturer's written instructions.
 - f. Use moist, loose sand in mix proportions.
 - g. Withhold 10-percent of mixing water until mixing is almost complete, then add as needed to produce necessary consistency.
 - 2. Mechanical Mixing:
 - a. Clean mixer of set or hardened materials before loading for new batch.
 - b. Maintain mixer in continuous operation while adding materials.
 - c. Conform to mixing sequence and time recommended by manufacturer of plaster materials. Add fibers by sprinkling in mix during last 2-minutes of mixing cycle.
 - 3. Hand Mixing: Do not hand-mix unless authorized by Architect.
- B. Mix Proportions by Volume: As specified in CBC Table 25-F for plaster thickness indicated.

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify that surfaces to be plastered are free of dust, loose particles, oil, and other foreign matter which would affect bond of plaster coats.
- B. Examine construction, grounds, and accessories to ensure that finished plaster surfaces will be true to line, level, and plumb, without requiring additional thickness of plaster.
- C. Do not commence installation until unsatisfactory conditions have been corrected.

3.02 APPLICATION

- A. Number of Coats: Provide three-coat application over metal lath in accordance with ASTM C926.

B. Three-Coat Application:

1. Apply plaster by hand or machine spray. If machine applied, use only experienced machine applicator foreman and nozzleman. Slump for machine applied plaster shall be between 2-1/2- to 4-inches at mixer and 2- to 3-1/2-inches at nozzle.
2. Interrupt plaster coats only at junctions of plaster planes, at openings, or at control joints.
3. Apply scratch coat with sufficient material and pressure to form full keys through and to embed metal base. When firm, score in one direction.
4. Apply brown coat to scratch coat, bringing out to grounds, flat to true surface, and free of imperfections which would reflect in finish coat.
5. Reconsolidate brown coat by floating, and roughen to assure bond with finish coat.
6. Apply finish coat in accordance with manufacturer's instructions and uniformly float to true, even surface.
7. Nominal Plaster Thickness Measured from Face of Lath, in accordance with ASTM C929, Table 4:
 - a. Vertical Surfaces:
 - 1) Scratch Coat: 3/8-inch, minimum.
 - 2) Brown Coat: 3/8-inch.
 - 3) Finish Coat: 1/8-inch, minimum.

C. Curing:

1. Maintain moist conditions by fine fog spraying.
2. Cure scratch coat for a minimum of 48-hours, and maintain a minimum of 48-hours between application of scratch coat and brown coat.
3. Cure brown coat for a minimum of 48-hours, and maintain a minimum of 7-days between the application of the brown coat and finish coat.

3.04 COMPLETION

A. Patching:

1. Upon completion of application, point up plaster around trim and other locations where plaster meets dissimilar materials.
2. Cut out and patch defective or damaged plaster.
3. Match patching of defective or damaged plaster to existing work in form, texture, and color.

B. Cleaning:

1. Remove plaster and protective materials from control and expansion joints, perimeter beads, and adjacent surfaces.
2. Remove stains that would adversely affect subsequent finishes on plaster.

C. When complete, plaster surfaces shall be flat or uniformly curved, true to plane; and free from scaffold and tool marks, stains, or other damage or defects and shall be uniform in color and texture.

END OF SECTION