

**SECTION 09 24 23
PORTLAND CEMENT STUCCO**

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes: Portland Cement-Based Plaster
- B. Related Sections:
 - 1. Section 03 30 00 – Cast-in-Place Concrete
 - 2. Section 04 22 00 – Concrete Unit Masonry
 - 3. Section 06 11 00 – Wood Framing
 - 4. Section 06 16 00 - Sheathing
 - 5. Section 09 22 36 – Metal Lath

1.2 REFERENCES

- A. Building Code: FBC - _____
- B. ASTM B 69- ____ Rolled Zinc
- C. ASTM C 91- ____ Masonry Cement
- D. ASTM C 150- ____ Portland Cement
- E. ASTM C 847- ____ - Standard Metal Lath
- F. ASTM C 897- ____ - Aggregates for Job Mixed Portland Cement-Based Plaster
- G. ASTM C 926- ____ - Application of Portland Cement-Based Plaster
- H. ASTM C 932- ____ - Surface-Applied Bonding Agents for Exterior Plastering
- I. ASTM C 979- ____ - Pigments for Integrally Colored Concrete
- J. ASTM C 1063- ____ - Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
- K. ASTM C 1116- ____ - Fiber-Reinforced Concrete and Shotcrete
- L. ASTM C 1328- ____ - Plastic (Stucco) Cement
- M. ASTM D 4216- ____ Rigid Poly (Vinyl Chloride) (PVC) and Related PVC and Chlorinated Poly (Vinyl Chloride) (CPVC) Building Products Compounds
- N. ACI 524 – Guide to Portland Cement Plastering

1.3 SUBMITTALS

- A. Certification of compliance of materials with Contract Documents.
- B. Manufacturer's written specifications, proportion mixes, and installation instructions for factory-prepared materials.
- C. Manufacturer's Safety Data Sheet.
- D. Evidence of applicator's experience including project identification with names of Owner and Architect/Engineer.
- E. Samples of colored finish-coat plaster containing coloring compound and specific aggregate to be used during plastering.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Application of cement plaster on at least three projects equal in scope to this Work. Evidence of applicator's experience including project identification with names of Owner and Architect/Engineer.
- B. Mock -Up
 - 1. Size: 4 ft by 8 ft (1.2 m by 2.4 m).
 - 2. Construct panel using sub base, base, lathing & furring, accessories, plaster coats, color, and finish texture representative of that required on the project.
 - 3. Panel will be reviewed for proper construction, color, texture, and workmanship.
 - 4. Do not proceed with work until sample plaster panel is approved by Owner and Architect/Engineer.
 - 5. Maintain sample panel on site for duration of project for comparison purposes.
 - 6. Remove sample panel from site when directed by Architect/Engineer.
- C. Provide Architect/Engineer with a letter certifying that all materials and mixes conform to Project Specifications

1.5 DELIVERY, STORAGE AND HANDLING

- A. Deliver manufactured materials in original unopened packages or containers, identified with manufacturer's label intact and legible. Deliver materials in sufficient quantity to assure continuity of work. Select and utilize handling equipment so as to avoid damage to materials handled and damage to other construction.
- B. Keep all materials dry, stored above ground, under cover and away from damp surfaces.
- C. Remove wet or deteriorated materials from the Site.

1.6 PROJECT CONDITIONS

- A. Cold Weather Requirements: Do not apply cement plaster when ambient temperature is expected to be less than 40°F (4°C).
- B. Hot Weather Conditions
 - 1. Use damp loose sand.
 - 2. Use cool water for mix water.
 - 3. Pre-dampen masonry walls prior to the application of the scratch coat.
 - 4. Prevent the plaster from drying out by covering with a plastic sheet, or moist cure at least twice daily for the first 2 – 3 days
 - 5. Do not allow fresh plaster to be subject to hot, dry winds.
- C. Ventilation: Provide ventilation for drying of installed cement plaster.
- D. Protection:
 - 1. Protect adjacent finished surfaces and projections, installed prior to plastering, by covering with plastic sheets, non-staining Kraft paper, removable type masking tape, non-staining petroleum jelly, or other appropriate means.

2. Maintain protection in place until completion of plastering.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Approved Manufacturers:

1. Titan America LLC
11000 NW 121st Way, Medley, FL 33178
(800) 226-2057
www.titanamerica.com

2.2 MATERIALS

A. Cement:

1. Portland Cement: (White or Grey) ASTM C 150 Type ____; ASTM C 1157 Type ____
2. Blended cement: ASTM C 595 Type ____
3. Masonry cement: ASTM C 91 Type ____
4. Plastic cement: ASTM C 1328 Type ____
5. Colored masonry cement: Conform to ASTM C 91 Type ____; Color.

B. Aggregate:

1. Base Coats: ASTM C 897, natural or manufactured sand.
2. Finish Coat: Natural or manufactured sand graded to pass the No. 16 (1.18 mm) mesh sieve, light colored.

C. Water: Potable, cool and free from impurities.

D. Metal Lath: ASTM C 847, G 60 galvanized, self-furring, _____, expanded metal lath of ____lbs./sq.yd.

E. Admixtures:

1. Fibers: ____in. (____ mm) fibers meeting the requirements of ASTM C 1116.
2. Integral Bonding Agent: _____as manufactured by _____.
3. Other: _____as manufactured by _____to provide _____.

F. Surface-Applied Bonding Agent: ASTM C 932, non-oxidizing, non-crystallizing, non-reemulsifiable material.

G. Coloring Compounds:

1. ASTM C 979 mineral oxide pigment _____as manufactured by _____.
2. Use coloring compound as prepared by factory certifying compliance to product standard and demonstrating no effect on setting and hardening of plaster mixture when used within recommended dosage range. Do not use carbon black or lampblack or organic pigments.

H. Factory-Prepared Finish Coat: Factory-prepared mixture produced by _____, under the product designation of _____.

1. Color: _____.
2. Texture: _____.

2.3 ACCESSORIES

- A. Galvanized accessories complying with ASTM C847 and ASTM C 1063.
- B. PVC accessories complying with ASTM D 4216.
- C. Zinc Alloy accessories complying with ASTM B 69.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that substrates to receive plaster conform to the Requirements of ASTM C926.
- B. Verify that areas and conditions under which work is to be performed permit proper and timely completion in a workmanlike manner.
- C. Notify Architect/Engineer in writing if conditions are not acceptable.

3.2 MIXING

- A. General
 - 1. Size mixer to produce batches that will be applied within maximum of 1½ hours after mixing.
 - 2. Accurately proportion materials for initial plaster mixture using measuring devices or known volume. Shovels of sand can be used after mixer is calibrated with known volumes of materials, including water.
 - 3. Use damp, loose sand.
 - 4. Add pigments or other specified admixtures to batch in accordance with manufacturer's recommendations.
 - 5. Retempering of base-coat cement plaster is permitted one time only after initial mixing. Plaster not used within 1½ hours of initial mixing shall be discarded.
 - 6. Retempering of finish-coat cement plaster is not permitted.
- B. Mechanical Mixing
 - 1. Mix each batch separately; double batching with single batch discharge shall not be permitted.
 - 2. Maintain mixer in clean condition before, during, and after plaster preparation. Remove partially set and hardened plaster from mixer drum before next batch. If mixer has been previously used in preparing gypsum plaster, thoroughly clean prior to use to prepare cement plaster.
 - 3. Maintain mixer in continuous operation while charging mixer. Add water to bring plaster to desired consistency. Continue mixing for 3 to 5 minutes after all ingredients have been added to the mixer.
 - 4. Mix factory-prepared plaster in accordance with manufacturer's recommendations.
- C. Hand Mixing
 - 1. Hand mixing shall be allowed only when authorized by Architect/Engineer.
 - 2. Provide waterproof protection around mixing tub and water barrels when mixing inside the building.
- D. Mix Proportions
 - 1. Dash-bond coat: 1 part of Portland cement and maximum 2 parts of sand, proportioned by volume.

2. Base coat(s):
 - a. ASTM C 926 Plaster Mix _____.
 - b. Add ____ fiber to the ____ coat per manufactures recommendation
 - c. Add _____ admixture to base-coat cement plaster at the addition rate of _____.
3. Finish Coat
 - a. Site prepared: ASTM C 926 Plaster Mix _____.
 - b. Factory prepared: Proportion factory-prepared mixture produced by _____, under the product designation of _____ with water as recommended by manufacturer.
 - c. Add pre-weighed quantities of _____ mineral oxide pigment at a dosage rate of ____lb (____kg) per bag of cement or as established by accepted color sample, but not to exceed 10% by weight of cement.

3.3 PREPARATION

- A. Wet high-suction solid bases with fine water spray to produce a uniformly damp surface.
- B. For tilt-wall applications: Clean the wall surface with a mild detergent and rinse thoroughly prior to application of the scratch coat to remove the form-release agent.
- C. At Contractor's option, apply either a dash-bond coat or a bonding agent as described below.
 1. Apply dash-bond coat of cement plaster to solid base and moist cure.
 2. Apply bonding agent meeting ASTM C 932 directly to concrete surface as recommended by bonding agent manufacturer's instructions.
- D. Install building paper and metal base in accordance with ASTM C 1063 and ASTM C 926.
- E. Install control joints in accordance with drawings.

3.4 APPLICATION

- A. Do not install cement plaster until all accessories are in place (see Section 09 22 36).
- B. Apply individual coats of cement plaster using ____ application to achieve the required thickness.
- C. Apply cement plaster with complete embedment into bases and all accessories. Fill all corner beads with each coat.
- D. Apply cement plaster with interruptions occurring only at junctures of plaster planes, at openings, or at control joints.
- E. Install plaster over metal base in accordance with the requirements of ASTM C 926 for the application of cement plaster on metal plaster bases.
- F. Install plaster in accordance with the requirements of ASTM C 926 for the application of three-coat cement plaster on solid bases.
- G. Install plaster in accordance with the requirements of ASTM C 926 for the

application of two-coat plaster on solid bases.

- H. For exterior plaster, delay application of brown coat until scratch coat has attained sufficient rigidity to resist cracking or other physical damage when the next coat is applied. Use a long rod or slicker to densify each coat
- I. Curing: When ambient relative humidity will be below 75%, moist cure the set and hardened base-coat plaster at the end of the workday by spraying a fine mist of water over the entire surface. Repeat application of a fine mist of water morning and evening until plaster has been in place 2 to 5 days (follow ASTM C 926, Section X1.4.2.5). Alternatively, coverage of the base-coat plaster with plastic membrane until application of subsequent coat or finish-coat plaster is permitted.
- J. Finish Coats:
 - 1. Texture finish coat to match accepted sample panel.
- K. Tolerance: Complete plaster work such that the deviation from true plane (exclusive of texture) is no greater than 1/4 in. (6 mm) as measured from line of a 10-ft (3.5-m) straightedge placed at any location on surface.

3.5 INSPECTION,ADJUSTING AND CLEANING

- A. Inspection:
 - 1. Confirm and document that materials used in base-coat and finish-coat plaster meet the requirements of "Materials" Article above (2.2).
 - 2. Confirm and document, _____ that plaster proportioning and mixing procedures are in accordance with "Mixes" Article above (2.4).
 - 3. Confirm and document, _____ that preparation of bases and application of plaster are in accordance with "Preparation" (3.2) and "Application" (3.3) Articles above.
- B. Adjusting:
 - 1. Point-up plaster around trim and other locations where plaster abuts dissimilar materials.
 - 2. Remove defective and damaged plaster by cutting it out.
 - 3. Remove by cutting out stained and discolored finish-coat plaster scheduled to remain natural and unpainted.
 - 4. Replace removed plaster using plaster with same composition and brought to desired texture and color consistent with surrounding area.
- C. Cleaning:
 - 1. Remove protective materials masking adjacent surfaces.
 - 2. Remove stains that affect uniformity of plaster finish.
 - 3. Use Cleaning methods approved in advance by the Architect/Engineer.
- D. Color Uniformity: To correct non-uniform color throughout the field of the plaster, fog coat spray entire finish-coat surface. Fog coats shall consist of finish-coat materials, except aggregate, spray applied to entire finish-coat surface on discolored elevations identified by the Architect/Engineer.

END OF SECTION