

## SPECIAL SPECIFICATION

### SECTION 09220S

#### PORTLAND CEMENT PLASTER

##### PART 1 - GENERAL

###### 1.01 SECTION INCLUDES

- A. Portland cement plaster system and aggregate surface finish.

###### 1.02 PRODUCTS INSTALLED BUT FURNISHED UNDER OTHER SECTIONS

- A. Section 08311 - Access Doors and Frames: Access doors.
- B. Division 16: Metal frames for recessed light fixtures.

###### 1.03 RELATED SECTIONS

- A. Section 01445S – Testing for Indoor Air Quality, Baseline IAQ, and Materials**
- B. Section 01450S – Sequence of Finish Installation.**
- C. Section 01505S – Construction Waste Management**
- D. Section 01805S – Environmental Objectives**
- E. Section 05400 - Cold-Formed Metal Framing: Structural metal studding and framing behind plaster base.
- F. Section 06100: Rough Carpentry: Wood blocking.
- G. Section 07920 - Joint Sealants.
- H. Section 09205 - Furring and Lathing: Metal furring and lathing for plaster base.
- I. Section 09210 - Gypsum Plaster.
- J. Section 09260 - Gypsum Board Assemblies.

#### 1.04 REFERENCES

- A. ASTM C 91 - Masonry Cement.
- B. ASTM C 150 - Portland Cement.
- C. ASTM C 206 - Finishing Hydrated Lime.
- D. ASTM C 631 - Bonding Compounds for Interior Plastering.
- E. ASTM C 665 - Insulation Blankets, Acoustical.
- F. ASTM C 897 - Aggregate for Job-Mixed Portland Cement-Based Plasters.
- G. ASTM C 926 - Application of Portland Cement-Based Plaster.
- H. PCA - Plaster (Stucco) Manual.

#### 1.05 SUBMITTALS

- A. **Environmental Objective Documentation: Signed by the manufacturers/fabricators stating level of compliance for the requirement and objectives of Section 01805S – Environmental Objectives.**
- B. **Provide product data and color sample card on plaster materials, characteristics and limitations of products specified.**
- C. Submit manufacturer's installation instructions.
- D. Submit manufacturer's certificate that products for fire resistance ratings meet or exceed specified requirements.

#### 1.06 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in cement plaster work with five years documented experience.
- B. Apply cement plaster in accordance with PCA Plaster (Stucco) Manual and ASTM C 926.
- C. Intersections of planes shall be sharp and accurate. Finished surfaces shall be uniform in texture and color throughout area and free from imperfections.

### 1.07 FIELD SAMPLES

- A. Construct field sample panel, 48 inches long by 48 inches wide, illustrating surface finish color of finish coat.
- B. Locate where directed.
- C. Accepted sample may not remain as part of the work.

### 1.08 ENVIRONMENTAL REQUIREMENTS

- A. Do not apply plaster when substrate or ambient air temperature is less than 50 degrees F unless sand and mixing water are heated to 70 degrees F and temporary protection is provided to keep minimum 50 degrees F in plastered areas for 24 hours. Do not use frozen materials in mixes.
- B. Maintain minimum ambient temperature of 50 degrees F during and after installation of plaster.
- C. Protection:
  - 1. Protect plaster from uneven and excessive evaporation during hot, dry weather.
  - 2. Protect finished surfaces installed prior to plastering by covering with suitable dropcloths.
  - 3. Screen openings with plastic film when building is subject to hot, dry winds, or temperature differentials of more than 20 degrees F are present.

### 1.09 COORDINATION

- A. Construct openings and chases for heating, plumbing, and electrical ducts, pipes, and conduits into plaster work. Make provisions to avoid cutting and patching.

## PART 2 - PRODUCTS

### 2.01 PLASTER BASE AND INTERMEDIATE COAT MATERIALS

- A. Portland Cement: ASTM C 150, Normal - Type I Portland, or ASTM C 91, masonry for use with Portland cement, or ASTM C 207, types for use with masonry cement.

- B. Lime: ASTM C 206, Type S.
- C. Aggregate: Natural sand, ASTM C 897.
- D. Water: Clean, fresh, potable and free of mineral or organic matter which can affect plaster.
- E. Bonding Agent:
  - 1. ASTM C 631; type recommended for bonding plaster to concrete and concrete masonry surfaces.
  - 2. Products:
    - a. Thoro Products, "Acryl 60".
    - b. Preco Chemical Corp., "Tite Bond".
- F. Admixtures: Air entrainment type.
- G. Plaster Mix Reinforcement: Glass fibers, 1/2-inch nominal length, alkali resistant.

## 2.02 PLASTER FINISH COAT MATERIALS

- A. Manufacturers:
  - 1. Lone-Star Industries.
  - 2. U. S. Gypsum.
- B. Premixed Exterior (Stucco) Finishing Coat: Integral color, mill mixed type.

## 2.03 CEMENT PLASTER MIXES

- A. Mix and proportion cement plaster in accordance with PCA Plaster (Stucco) Manual and in accordance with manufacturer's instructions.
- B. Do not retemper or use material that has partially set. Do not use frozen, caked or lumpy materials. Clean mixer or mixing boxes of set of hardened materials before materials for a new batch are loaded. Mix each batch separately. Thoroughly dry mix materials before adding water.
- C. Base Coat: 94 pounds per cubic foot cement, 40-50 pounds per cubic foot hydrated lime, 5 to 6 cubic feet aggregate, and glass fibers at a rate of 1-1/2 pounds per sack of cement.

- D. Intermediate Coat: 94 pounds per cubic foot cement, 50 pounds per cubic foot hydrated lime, and 6 to 7 cubic feet aggregate, and glass fibers at a rate of 1-1/2 pounds per sack of cement.
- E. Portland Cement Finish Coat: 94 pounds per cubic foot cement, 100 pounds per cubic foot hydrated lime, 7 to 10 cubic feet aggregate, 1 percent pigment by weight..
- F. Mix only as much plaster as can be used prior to initial set.
- G. Add color pigments in accordance with manufacturer's instructions. Ensure uniformity of mix and coloration.
- H. Mix materials dry, to uniform color and consistency, before adding water.
- I. Protect mixtures from frost, contamination, and evaporation.

### PART 3 - EXECUTION

#### 3.01 EXAMINATION

- A. Verify that surfaces and site conditions are ready to receive work.
- B. Masonry: Verify joints are cut flush and surface is ready to receive work of this Section. Verify no bituminous, water repellent coatings, or other foreign water exists on masonry surface.
- C. Concrete: Verify surfaces are flat, honeycomb is filled flush, and surface is ready to receive work of this Section. Verify no bituminous, water repellent, form release agents, or other foreign water exists on concrete surface that are detrimental to plaster.
- D. Grounds and Blocking and Accessories: Verify items within walls, soffits and other areas receiving plaster for other Sections of work have been installed.
- E. Mechanical and Electrical: Verify services within walls have been tested and approved.
- F. Verify that furring, lathing and control/expansion joints are complete and tightly secured in place.

G. Beginning of installation means acceptance of existing conditions.

### 3.02 PREPARATION

- A. Protect surfaces near the work of this Section from damage or disfiguration.
- B. Dampen masonry surfaces to reduce excessive suction.
- C. Clean concrete surfaces of foreign matter. Clean surfaces using acid solutions, solvents, or detergents. Wash surfaces with clean water.
- D. Roughen smooth concrete surfaces and apply bonding agent. Apply in accordance with manufacturer's instructions.

### 3.03 APPLICATION

- A. Apply plaster in accordance with ASTM C 926, PCA Plaster Manual, and manufacturer's instructions.
- B. Apply plaster by machine or hand. Interrupt plaster only at junctions of plaster planes, at openings or at control joints.
- C. Layout to permit completion of an entire surface in one application. Maintain a wet edge. Work to corners and joints; do not allow material to set up within a distinct wall area.
- D. Nominal Plaster Thicknesses:

	SOFFITS	WALLS	COLUMN S	POOLS
First Coat:	3/8"	1/2"	1/2"	3/8"
Second Coat:	1/4"	3/8"	1/4"	
Third Coat:	1/8"	1/8"	1/8"	
Fourth Coat:			1/8"	3/8"

- E. Scratch Coat (First Coat) Application:
  - 1. Apply scratch coat (first coat) with sufficient material and pressure to form keys on metal lath and bond on gypsum lath.
  - 2. Scratch or cross rake rough surface and allow to set firm and hard.

3. Apply plaster screeds to scratch coat prior to application of brown coat.
4. Float base coat plaster scheduled to receive adhesive applied ceramic tile to smooth, plumb surface within allowable tolerance for finished plaster surfaces.

F. Brown Coat (Second Coat) Application:

1. Do not apply brown coat sooner than 48 hours following scratch coat application.
2. Apply brown coat (second coat) to first coat bringing out to ground flat to true surface and free of imperfections which would reflect in finish coat.
3. Reconsolidate brown coat (second coat) by floating and roughen to assure bond with finish coat.
4. Straighten to true surface with rod and darby (float) without application of water.
5. Scratch or cross rake and leave rough, ready to receive finish coat (third coat).

G. Finish Coat (Third Coat) Application:

1. Apply finish coat with texture and color as selected matching field sample.
2. Apply finish coat to base coat which is set and partially dry or to set dry and base coat which has been dampened by application of water.
3. Avoid use of excessive amount of water.
4. Cut finish coat through full depth with trowel at intersection of plastered walls and plastered ceiling.
5. Tool through second and finish coats to produce "V" joint at intersection of frames or other items of metal or wood which act as plaster grounds.

H. Cement Plaster Columns:

1. Apply second coat to first coat, bringing out to true surface, and free of imperfections which would reflect in finish coat.
2. Reconsolidate second coat by floating, and roughen to assure bond with finish coat.
3. Apply finish coat in two layers.

I. Solid Plaster Partitions:

1. Apply scratch coat to lath side with sufficient material and pressure to form full keys and to cover lath.
  2. Scratch or cross rake scratch coat and leave rough to receive brown coat.
  3. After scratch coat has set firm and hard, apply back- up coat to channel side of partition covering keys of scratch coat.
  4. Straighten back-up to level surface, cross rake or scratch to receive finish coat.
  5. After back-up coat has set, apply brown coat to lath side over scratch coat, bring out to grounds, straighten to level surface.
  6. Apply finish coat.
- J. Fire Resistant Plaster: Install in accordance with local building code and Underwriters Laboratories, Inc. installation requirements.

#### 3.04 ADJUSTING

- A. Upon completion, point-up plaster around trim and other locations where plaster meets dissimilar materials.
- B. Apply fog coat to integral color plaster to ensure uniform color.
- C. Cut out and patch defective or damaged plaster. Cut out and patch stained or discolored finish plaster.
- D. Match patch of defective or damaged plaster to existing work in form, texture and color.
- E. Obtain A/E's acceptance of plaster color and texture prior to scaffold removal.

#### 3.05 TOLERANCES

- A. Maximum Variation from True Flatness: 1/8-inch in 10 feet as measured with a straight edge placed at any location on the surface.

#### 3.06 PATCHING

- A. Patch defects in workmanship and materials. Patches in finished areas shall match adjacent surfaces.

#### 3.07 CLEANING

- A. Removing plaster and protective materials from expansion beads and metal accessories. Remove plaster spatters and debris from other surfaces. Remove rubbish, debris, and scaffolds from spaces and leave broom clean.

3.08 SCHEDULES

- A. Laboratories: Two coat cement plaster over metal lath, smooth wood float finish.
- B. Exterior Entry Area: Three coat cement plaster over metal lath, course float finish.

END OF SECTION