SECTION 09 24 00 - PORTLAND CEMENT PLASTERING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:

1. Nonstructural steel framing and furring.
2. Interior portland cement plasterwork on solid- plaster bases.
3. Exterior portland cement plasterwork (stucco) on metal lath plaster bases.

B. See Division 05 Section "Cold-Formed Metal Framing" for structural, load-bearing (transverse and axial) steel studs and joists that support lath and portland cement plaster.

1.2 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Samples: For each type of factory-prepared finish coat indicated; 12 by 12 inches, and prepared on rigid backing.

1.3 QUALITY ASSURANCE

A. Fire-Test-Response Characteristics: For portland cement plaster assemblies with fire-resistance ratings, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing and inspecting agency acceptable to authorities having jurisdiction.

B. Mockups: Before plastering, install mockups of at least 100 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Install mockups for each type of finish indicated.
2. For interior plasterwork, simulate finished lighting conditions for review of mockups.
3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.4 PROJECT CONDITIONS

A. Comply with ASTM C 926 requirements.

B. Exterior Plasterwork: Apply plaster when ambient temperature is greater than 40 deg F.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. In other Part 2 articles where titles below introduce lists, the following requirements apply to product selection:
   1. Products: Subject to compliance with requirements, provide one of the products specified.

2.2 NONSTRUCTURAL STEEL FRAMING MEMBERS, GENERAL

A. Components, General: Comply with ASTM C 1063. For steel sheet components not included in ASTM C 1063, comply with ASTM C 645 requirements for metal, unless otherwise indicated.

B. Cold-Rolled Channels: Base metal thickness of 0.0538 inch with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.

C. Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter, unless otherwise indicated.

2.3 STEEL FRAMING FOR CEILINGS

A. Suspended Furring:

   1. Main Runners (Carrying Channels): Cold-rolled channels, 1-1/2 inches deep.
   2. Cross Furring: Cold-rolled channels, 3/4 inch deep.

B. Direct Furring: Cold-rolled channels, 3/4 inch deep.

C. Tie Wire:
   1. For tying furring directly to steel or wood structure without main runners, use double loop of 0.0625-inch- diameter wire, or quadruple loop of 0.0475-inch- diameter wire.
   2. For saddle tying cross furring to main runners use 0.0625-inch- diameter wire, or double strand of 0.0475-inch- diameter wire.

D. Wire Hangers: 0.162-inch- diameter wire.

E. Hanger Attachments to Concrete: Power-actuated fasteners fabricated from corrosion-resistant materials, and with clips or other devices for attaching hangers. Capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by testing according to ASTM E 1190 by a qualified independent testing agency.

2.4 METAL LATH

A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.

1. Diamond-Mesh Lath: Self-furring.

a. Weight: 2.5 lb/sq. yd..

2. Flat Rib Lath: Rib depth of not more than 1/8 inch.

a. Weight: 2.75 lb/sq. yd..

B. Wire-Fabric Lath:

1. Woven-Wire Lath: ASTM C 1032; self-furring, with stiffener wire backing.

a. Weight: 1.4 lb/sq. yd..

C. Paper Backing: FS UU-B-790, Type I Grade D, Style 2 vapor-permeable paper.

1. Provide paper-backed lath at exterior locations.

2.5 ACCESSORIES

A. General: Comply with ASTM C 1063 and coordinate depth of trim and accessories with thicknesses and number of plaster coats required.

B. Zinc and Zinc-Coated (Galvanized) Accessories:

1. Foundation Weep Screed: Fabricated from hot-dip galvanized steel sheet, ASTM A 653/A 653M, G60 zinc coating.
2. Cornerite: Fabricated from metal lath with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.
3. External-Corner Reinforcement: Fabricated from metal lath with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.
4. Cornerbeads: Fabricated from zinc or zinc-coated (galvanized) steel.

a. Small-nose style; use unless otherwise indicated.

5. Casing Beads: Fabricated from zinc or zinc-coated (galvanized) steel; square-edged style; with expanded flanges.
6. Control Joints: Fabricated from zinc or zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.
7. Expansion Joints: Fabricated from zinc or zinc-coated (galvanized) steel; folded pair of unperforated screeds in M-shaped configuration; with expanded flanges.
8. Two-Piece Expansion Joints: Fabricated from zinc or zinc-coated (galvanized) steel; formed to produce slip-joint and square-edged reveal that is adjustable from 1/4-to-5/8-inch wide; with perforated flanges.

2.6 MISCELLANEOUS MATERIALS

A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Fiber for Base Coat: Alkaline-resistant glass or polypropylene fibers, 1/2 inch long, free of contaminants, manufactured for use in portland cement plaster.

C. Bonding Compound: ASTM C 932.

D. Steel Drill Screws: For metal-to-metal fastening, ASTM C 1002 or ASTM C 954, as required by thickness of metal being fastened; with pan head that is suitable for application; in lengths required to achieve penetration through joined materials of not fewer than three exposed threads.

E. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.

F. Isolation Strip at Exterior Walls:
   1. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch thick, in width to suit steel stud size.

2.7 PLASTER MATERIALS

A. Portland Cement: ASTM C 150, Type I.

   1. Color for Finish Coats: [**White**] [**Gray**].

B. Colorants for Job-Mixed Finish-Coats: Colorfast mineral pigments that produce finish plaster color to match Owner's sample.

C. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.

D. Sand Aggregate: ASTM C 897.

   1. Color for Job-Mixed Finish Coats: White.

E. Acrylic-Based Finish Coatings: Factory-mixed acrylic-emulsion coating systems, formulated with colorfast mineral pigments and fine aggregates; for use over portland cement plaster base coats. Include manufacturer's recommended primers and sealing topcoats for acrylic-based finishes.

   1. Products:
      a. Bonsal, W. R. Co.
      b. ChemRex, SonoWall Stucco Systems
      c. Dryvit Systems, Inc.
      d. Parex Incorporated
      e. Senergy, Inc.
      f. Sto Corp.
      g. Or approved equal
   2. Color: Match Owner's sample.

2.8 PLASTER MIXES

A. General: Comply with ASTM C 926 for applications indicated.

1. Fiber Content: Add fiber to base-coat mixes after ingredients have mixed at least two minutes. Comply with fiber manufacturer's written instructions for fiber quantities in mixes, but do not exceed 1 lb of fiber/cu. ft. of cementitious materials. Reduce aggregate quantities accordingly to maintain workability.

B. Portland Cement Base-Coat Mixes:

1. Over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:

a. Scratch Coat: For cementitious material, mix 1 part portland cement and 0 to 3/4 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
b. Brown Coat: For cementitious material, mix 1 part portland cement and 0 to 3/4 parts lime. Use 3 to 5 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

2. Over Brick and Monolithic Concrete: Single base coats for two-coat plasterwork as follows:

a. For cementitious material, mix 1 part portland cement and 0 to 3/4 part lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

3. Over Concrete Unit Masonry: Single base coats for two-coat plasterwork as follows:

a. For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

C. Portland Cement Job-Mixed Finish-Coat Mixes: For cementitious materials, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

D. Factory-Prepared Finish-Coat Mixes: For acrylic-based finish coatings, comply with manufacturer's written instructions.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

B. Prepare solid-plaster bases that are smooth or that do not have the suction capability required to bond with plaster according to ASTM C 926.

3.2 INSTALLATION, GENERAL

A. Sound Attenuation Blankets: Where required, install blankets before installing lath unless blankets are readily installed after lath has been installed on one side.

B. Acoustical Sealant: Where required, seal joints between edges of plasterwork and abutting construction with acoustical sealant.

3.3 INSTALLING NONSTRUCTURAL STEEL FRAMING, GENERAL

A. General: Comply with requirements in ASTM C 1063 for applications indicated.

1. Comply with ASTM C 754 for installation of items not addressed in ASTM C 1063.

B. Install supplementary framing, blocking, and bracing at terminations in plaster assemblies to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. See section 092216 for installation of steel framing and ceiling framing.

3.4 INSTALLING METAL LATH

A. Expanded-Metal Lath: Install according to ASTM C 1063.

1. Partition Framing and Vertical Furring: Install self-furring flat rib lath.
2. Flat-Ceiling and Horizontal Framing: Install flat diamond-mesh lath.
3. Curved-Ceiling Framing: Install flat diamond-mesh lath.
4. On Solid Surfaces, Not Otherwise Furred: Install self-furring diamond-mesh lath.

3.5 INSTALLING ACCESSORIES

A. Install according to ASTM C 1063 and at locations indicated on Drawings.

B. Reinforcement for External Corners:

1. Install lath-type external-corner reinforcement at exterior locations.

C. Control Joints: Install control joints in specific locations approved by Owner for visual effect as follows:

1. As required to delineate plasterwork into areas (panels) of the following maximum sizes:

   a. Vertical Surfaces: 144 sq. ft..
   b. Horizontal and other Nonvertical Surfaces: 100 sq. ft..

2. At distances between control joints of not greater than 18 feet o.c.
3. As required to delineate plasterwork into areas (panels) with length-to-width ratios of not greater than 2-1/2:1.

4. Where control joints occur in surface of construction directly behind plaster.
5. Where plasterwork areas change dimensions, to delineate rectangular-shaped areas (panels) and to relieve the stress that occurs at the corner formed by the dimension change.

3.6 PLASTER APPLICATION

A. General: Comply with ASTM C 926.

B. Bonding Compound: Apply on unit masonry and concrete plaster bases.

C. Acrylic-Based Finish Coatings: Apply coating system, including primers, finish coats, and sealing topcoats, according to manufacturer's written instructions.

3.7 CUTTING AND PATCHING

A. Cut, patch, replace, and repair plaster as necessary to accommodate other work and to restore cracks, dents, and imperfections. Repair or replace work to eliminate blisters, buckles, crazing (check cracking), dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

END OF SECTION 09 24 00