

SECTION 09 24 00
PORTLAND CEMENT PLASTERING

PART 1 GENERAL

1.1 DESCRIPTION

This section specifies lathing and Portland cement based plaster (stucco).

1.2 RELATED WORK

- A. Room finish schedule and color: See Drawings.
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- B. Gypsum plaster: Section 09 23 00, GYPSUM PLASTERING.

1.3 TERMINOLOGY

- A. Definitions and description of terms shall be in accordance with ASTM C11, C841, and C926 and as specified.
- B. Self-furring Lath: Metal plastering bases having dimples or crimps designed to hold the plane of the back of the lath 6 to 10 mm (1/4 to 3/8 inch) away from the plane of the solid backing.
- C. Solid Backing or Solid Bases: Concrete, masonry, sheathing, rigid insulation, and similar materials to which plaster is directly applied.
- D. Wet Areas: Areas of a building where cyclic or continuous exposure to very humid or wet conditions, or in which a dew point condition may occur in the plaster. Dew point conditions occur frequently in such areas as shower rooms and similar areas.

1.4 SUBMITTALS

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Manufacturer's Literature and Data:
 - 1. Accessories for plaster, each type.
 - 2. Metal plastering bases, each type.
 - 3. Fasteners.
 - 4. Bonding compounds, including application instructions.
 - 5. Admixtures, including mixing and application instructions.
- C. Samples:

Accessories for plaster, each type, not less than 150 mm (6 inches) long.

Panel showing finish coat 24 by 24 inches.

D. Qualifications: Proof of requirements as defined in Section 1.5 of this section

1.5 Qualifications

A. Installer: Company specializing in performing Work of this section with minimum five years documented experience, or five significant, similar projects.

1.65 PROJECT CONDITIONS

- A. Maintain work areas for interior work at a temperature of not less than 4°C (40°F) for not less than 48 hours prior to application of plaster, during application of plaster and until plaster is completely dry.
- B. Exterior plaster shall not be applied when the ambient temperature is less than 4°C (40°F).
- C. Plaster shall not be applied to frozen surfaces or surfaces containing frost.
- D. Frozen materials shall not be used in the mix.
- E. Plaster coats shall be protected against freezing for a period of not less than 24 hours after application.

1.7 APPLICABLE PUBLICATIONS

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by basic designation only.
- B. American Society for Testing And Materials (ASTM):
 - A653/A653M-07.....Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
 - A641-03.....Zinc-Coated (Galvanized) Carbon Steel Wire
 - C11-07.....Terminology Relating to Gypsum and Related Building Materials and Systems.
 - C91-05.....Masonry Cement
 - C150-07.....Portland Cement
 - C207-06.....Hydrated Lime for Masonry Purposes
 - C260-06.....Air Entraining Admixtures for Concrete.
 - C841-03.....Installation of Interior Lathing and Furring
 - C847-06.....Metal Lath
 - C897-05.....Aggregate for Job-Mixed Portland Cement Based Plasters
 - C926-06.....Application of Portland Cement-Based Plaster
 - C933-07.....Welded Wire Lath

C1002-07.....Steel Self-Piercing Tapping Screws for the
Application of Gypsum Panel Products or Metal
Plaster Bases to Wood Studs or Steel Studs

C. Commercial Item Description (CID):

A-A-55615.....Shield, Expansion (Wood Screw and Lag Bolt Self-
Threading Anchors)

D. Federal Specifications (Fed Spec.):

UU-B-790A.....Building Paper, Vegetable Fiber (Kraft,
Waterproofed, Water Repellent and Fire
Resistant)

E. All work to follow the processes and standards outlined in National Park
Service Preservation Brief 22: Preservation and Repair of Historic
Stucco

1.8 MOCK-UP

A. Provide mock-up, minimum 6" x 12" repaired area, illustrating surface
finish, and transition to existing original stucco finish.

PART 2 - PRODUCTS

2.1 METAL PLASTERING BASES

A. Stucco patches to replicate historic lath condition. At brick masonry
walls, stucco to be applied to walls. In locations with wood or metal
lath, replicate existing lath, overlapped with historic to provide good
attachment.

2.1 ACCESSORIES FOR CEMENT PLASTER (STUCCO)

A. ASTM C841, except fabricate from zinc alloy.
B. Control Joints: ASTM C841, zinc.

2.2 FASTENERS

A. Tie, wire, screws, clips, and other fasteners ASTM C841, except as
otherwise specified.
B. Fasteners for securing metal plastering bases shall have heads, or be
through washers large enough to engage two strands of the metal
plastering base.
C. For fire rated construction; type and size as used in fire rated test.
D. Screws: ASTM C1002.
E. Expansion Shields: CID A-A-55615, of the Type and Class applicable.

2.3 CEMENT

A. New stucco to replicate historic composition. Prior to beginning stucco
patching, contractor to sample stucco in three locations (selected in

consultation with architect), and test them to determine the percentage of portland cement, sand, lime and other materials. New stucco will match historic in terms of composition.

- B. Portland: ASTM C150, Type I.
- C. Masonry: ASTM C91. Lime where added, ASTM C207, Type S.
- D. White where required for white finish coat.

2.4 LIME

- A. A. New stucco to replicate historic composition.
- B. ASTM C206, Type S.
- C. ASTM C207, Type S.

2.5 AGGREGATES (SAND)

- A. A. New stucco to replicate historic composition.
- B. ASTM C897, graded as required to suit texture of finish specified.
- C. White where white finish coat is specified.

2.6 BONDING AGENT

ASTM C932.

2.7 FINISH COAT FOR CEMENT PLASTER (STUCCO)

- A. A. New stucco to replicate historic composition.
- B. If available, factory prepared dry blend of materials, integrally colored, designed for exterior finish coat application.
- C. Pigments: ASTM C979, lime proof mineral oxide.
- D. Not more than 35 percent, by weight of all ingredients (cement, aggregate, hydrated lime, admixture and coloring pigment) shall pass a number 100 sieve.

2.9 ADMIXTURES

Air Entrainment: ASTM C260.

PART 3 - EXECUTION

3.1 METAL PLASTERING BASES (LATH) LOCATIONS

- A. Where plaster is required on solid concrete or masonry bases, metal plastering bases are not required, unless shown on the drawings. Where shown use wire lath or stucco mesh.
- B. On ceiling or soffit framing use flat diamond mesh lath.
- D. Over steel columns, use self-furring flat diamond mesh lath.
- E. Where metal plastering bases are used as a base for exterior cement plaster over wall sheathing, use wire lath or stucco mesh with water resistant backing.

3.2 APPLYING METAL PLASTERING BASES

- A. In accordance with ASTM C841, except as otherwise specified or shown.

- B. Form true surfaces, straight or in fair curves where shown, without sags or buckles and with long dimension of lath at right angles to direction of supports.
- C. Lath for ceiling or soffit construction shall terminate at casing bead (floating angle construction) at perimeter angles between walls and ceilings or soffits.
- D. Lath with backing shall be applied to produce a paper to paper and metal to metal lap at ends and sides of adjacent sheets, whether full sheets or less than full sheets are used:
 - 1. Backing shall be lapped 50 mm (2 inches) for both horizontal and vertical laps.
 - 2. Horizontal laps shall be ship lap fashion to conduct water to the outside and over flashing or waterproofing.
- E. Metal plastering bases shall not be continuous through expansion and control joints, but shall be stopped at each side.
- F. Attach metal lath directly to masonry and concrete with hardened nails, power actuated drive pins or other approved fasteners. Fasteners shall be located at the dimples or crimps only.
- G. Wood plugs are not acceptable.

3.3 INSTALLING PLASTERING ACCESSORIES

- A. Install accessories in accordance with ASTM C841, except as otherwise specified.
 - 1. Set plastering accessories plumb, level and true to line, neatly mitered at corners and intersections, and securely attach to supporting surfaces as specified for metal lath.
 - 2. Install in one piece, within the limits of the longest commercially available lengths.
- B. Corner Beads: Install at all vertical and horizontal external plaster corners, as required to establish grounds, and where shown.
- C. Strip Lath:
 - 1. Install metal lath strips centered over joints between dissimilar materials, such as hollow tile, brick, concrete masonry units, concrete, and joints with metal lath on framing or furring, where both such surfaces are required to be plastered and are in contact with each other in same plane, except where expansion joints and casing beads are required.
 - 2. Wire tie or fasten strip lath to base along both edges at not over 150 mm (six inches) on centers.
- D. Casing Beads:

1. Install casing beads where shown and at following locations where plaster terminates to provide finish trim.
2. Where plaster terminates against non-plastered surfaces such as masonry, concrete, and wood.
3. Where plaster terminates against trim of steel frames and trim of other materials and equipment, except where trim overlaps plaster.
4. Around perimeter of openings except where edge is covered by flanges. Locate to conform to dimensions shown on shop drawings.
5. Where plaster for new walls or furring (vertical or horizontal) terminates against existing construction.
6. Both sides of expansion and control joints unless shown otherwise.
7. Install casing bead at perimeter angles between walls and ceilings so as to provide floating angle (unrestrained) construction in accordance with ASTM C841.

E. Cornerites:

1. Install at interior corners of walls, partitions, and other vertical surfaces to be plastered, except where metal lath is carried around angle.
2. Fasten only as necessary to retain position during plastering.
3. Omit cornerites at junction of new plastered walls with existing plastered walls at locations where casing beads are specified.

F. Control Joints:

1. Where control joints are placed parallel to framing members, install joints within 100 mm (four inches) of the framing member.
2. Install control joints only to the edges of abutting sheets of lath so that the lath is not continuous or tied across the joint.
3. Joints shall extend the full width and height of the wall or length of soffit/ceiling plaster membrane.

3.4 SURFACE PREPARATION OF SOLID BASES

A. Surfaces that are to receive plaster shall be prepared and conditioned in accordance with ASTM C926, except as otherwise specified.

B. New surfaces of masonry and concrete:

1. Remove projections and clean concrete surface of form oil.
2. Fill depressions, holes, cracks and similar voids flush with Portland cement plaster to provide substrate within the tolerance specified in ASTM C926.
3. Use bonding agent.
4. Cover with self furring lath where required to keep the total plaster thickness as specified in Table 4 of ASTM C926.

C. Existing surfaces of concrete and masonry:

1. Clean surface of dirt and other foreign matter which will prevent bond.
2. Apply dash bond coat or bonding agent as specified herein.
3. Where existing surfaces have a coating such as paint or bituminous waterproofing apply metal plastering base as specified herein.

3.5 STUCCO COMPOSITION

- A. New stucco to replicate historic composition. Patching stucco to replication composition of historic, based on laboratory testing.
- B. Stucco should be applied in a three coat process.
- C. Use air entrained plaster for all exterior work.
- B. Color
 1. Entire building to be painted following stucco patching work.
 6. Finish coat shall match the existing historic stucco in texture.

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