

## **SECTION 09 24 00 PORTLAND CEMENT PLASTERING**

### **PART 1 - GENERAL**

#### **1.1 DESCRIPTION:**

- A. This section specifies lathing and portland cement based plaster stucco.

#### **1.2 RELATED WORK:**

- A. Sustainable Design Requirements: Section 01 81 13, SUSTAINABLE CONSTRUCTION REQUIREMENTS.
- B. Steel framing members for attachment of plaster bases: Section 05 40 00, COLD-FORMED METAL FRAMING, and Section 09 22 16, NON-STRUCTURAL METAL FRAMING.
- C. Access Doors: Section 08 31 13, ACCESS DOORS AND FRAMES.
- D. Room Finish Schedule and Color: Section 09 06 00, SCHEDULE FOR FINISHES.

#### **1.3 TERMINOLOGY:**

- A. Definitions and description of terms to be in accordance with ASTM C11, ASTM C926, ASTM C1063 and as specified.
- B. Underside of Structure Overhead: In spaces where steel trusses or bar joists are shown, the underside of structure overhead is defined as the underside of the floor or roof construction supported by beams, trusses, and bar joists.
- C. Self-furring Lath: Metal plastering bases having dimples or crimps designed to hold the back plane of the lath 6 to 10 mm (1/4 to 3/8 inch) away from the plane of the solid backing.
- D. Solid Backing or Solid Bases: Concrete, masonry, sheathing, rigid insulation, and similar materials to which plaster is directly applied.
- E. 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.

#### **1.4 SUBMITTALS:**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Sustainable Design Submittals, as described below:
  - 1. Postconsumer and preconsumer recycled content as described in PART 2 - PRODUCTS.
- C. 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.
- D. Samples:
1. Accessories for plaster, each type, not less than 152 mm (6 inches) long.
  2. Panel showing finish coat 8 by 10 inches) minimum.
- E. Installers qualifications.

#### **1.5 DELIVERY, STORAGE AND PROTECTION:**

- A. Deliver manufactured materials in the manufacturers' original unbroken packages or containers which are labeled plainly with the manufacturers' names and brands. Keep cementitious materials dry and stored off the ground, under cover, and away from sweating walls and other damp surfaces until ready for use.

#### **1.6 PROJECT CONDITIONS:**

- A. Do not apply exterior plaster when the ambient temperature is less than 4 degrees C (40 degrees F), or when a drop in temperature below 4 degrees C (40 degrees F) is expected within 24 hours after application.
- B. Do not apply plaster to frozen surfaces or surfaces containing frost.
- C. Do not use frozen materials in the mix.
- D. Protect plaster coats against freezing for a period of not less than 24 hours after application.

#### **1.7 QUALITY ASSURANCE:**

- A. Installers Qualifications: Work is to be performed by installer having a minimum of three (3) years' experience for work relating to this Section. Submit installer qualifications.

#### **1.8 PERFORMANCE REQUIREMENTS:**

- A. Where indicated on construction documents, provide cement plaster assemblies identical to those of assemblies tested for fire resistance according to ASTM E119 by a qualified testing agency.
- B. Where indicated on construction documents provide cement plaster assemblies identical to those of assemblies tested for STC ratings according to ASTM E90 and classified according to ASTM E413 by a qualified testing agency.

## 1.9 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. ASTM International (ASTM):
  - A653/A653M-13.....Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
  - A1064/A1064M-14..Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete
  - C11-13.....Terminology Relating to Gypsum and Related Building Materials and Systems.
  - C91/C91M-12 .....Masonry Cement
  - C150/C150M-12 ....Portland Cement
  - C206-14 .....Finishing Hydrated Lime
  - C207-06(R2011) .....Hydrated Lime for Masonry Purposes
  - C260/C260M-10a ...Air Entraining Admixtures for Concrete.
  - C847-14a .....Metal Lath
  - C897-05(R2014) .....Aggregate for Job-Mixed Portland Cement Based Plasters
  - C926-14a .....Application of Portland Cement-Based Plaster
  - C932-06(R2013) .....Surface-Applied Bonding Compounds for Exterior Plastering
  - C933-14 .....Welded Wire Lath
  - C979/C979M-10 ....Pigments for Integrally Colored Concrete
  - C1002-14.....Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
  - C1063-14d.....Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster
  - E90-09 .....Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements
  - E119-14 .....Test Methods for Fire Tests of Building Construction and Materials
  - E413-10 .....Classification for Rating Sound Insulation
- C. Commercial Item Description (CID):

A-A-55615-95(R2006)..... Shield, Expansion (Wood Screw and Lag Bolt  
Self-Threading Anchors)

**PART 2 - PRODUCTS**

**2.1 METAL PLASTERING BASES:**

- A. Expanded Lath:
  - 1. ASTM C847, galvanized except as modified by ASTM C1063 and this specification. Self-furring where applied over solid backing.
  - 2. Flat diamond mesh weighing not less than 1.8 kg per square meter (3.4 pounds per square yard).
- B. Stucco Mesh: Flat expanded diamond mesh pattern, with openings approximately 38 by 75 mm (1-1/2 by 3 inches), weighing not less than 1.9 kg per square meter (3.6 pounds per square yard), with backing as specified.
- C. Wire Lath:
  - 1. Zinc coated (Galvanized).
  - 2. Welded Wire Lath: ASTM C933, with backing as specified.
  - 3. Self-furring where applied over solid backing.
  - 4. Recycled Content of Metal Products: Post consumer content plus one-half of preconsumer content not less than 30 percent.
- D. Building Paper Backing for Metal Plastering Bases:
  - 1. Backing attached to lath as specified in ASTM C933.
  - 2. Vapor Permeable Backing: Fed. Spec. UU-B-790, Type I, Grade D.
  - 3. Water Resistant Backing: Fed. Spec. UU-B-790, Type I, Grade B.

**2.2 ACCESSORIES FOR CEMENT PLASTER (STUCCO):**

- A. Provide accessories that are roll formed galvanized steel, except that cornerite and strip lath that are formed from steel sheets with manufacturer's standard galvanized coating.
- B. Provide welded wire corner reinforcements of galvanized 1.4 mm (17 gauge) steel wire conforming to ASTM A1064/A1064M.
- C. Provide furring, including hangers, bolts, inserts, clips, fastenings, and attachments of number, size, and design to develop the full strength of the members.
- D. Control Joints: ASTM C1063, zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanged and removable protective tape on plaster face of control joint.

- E. Foundation Weep Screed: Fabricated from hot-dip galvanized-steel sheet, ASTM A653/A653M, G60 (Z180) zinc coating.
- F. Cornerite: Fabricated from metal lath with ASTM A653/A653M, G60 (Z180), hot-dip galvanized-zinc coating.
- G. External- (Outside-) Corner Reinforcement: Fabricated from metal lath with ASTM A653/A653M, G60 (Z180), hot-dip galvanized-zinc coating.
- H. Cornerbeads: Fabricated from zinc-coated (galvanized) steel.
  - 1. Smallnose cornerbead with expanded flanges; use unless otherwise indicated on construction documents.
  - 2. Smallnose cornerbead with perforated flanges; use on curved corners.
  - 3. Smallnose cornerbead with expanded flanges reinforced by perforated stiffening rib; use on columns and for finishing unit masonry corners.
  - 4. Bullnose cornerbead, radius 19 mm (3/4 inch) minimum, with expanded flanges; use at locations indicated on construction documents.
- I. Casing Beads: Fabricated from zinc-coated (galvanized) steel; square-edged style; with expanded flanges.

## **2.3 FASTENERS:**

- A. Tie, wire, screws, staples, clips, nails, and other fasteners ASTM C1063, except as otherwise specified.
- B. Provide fasteners for securing metal plastering bases having heads, or inserted through washers large enough to engage two (2) strands (two (2) on each side of screw) of the metal plastering base.
- C. For fire rated construction; provide fasteners of 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.

## **2.4 CEMENT:**

- A. Portland: ASTM C150/C150M, Type I.

## **2.5 LIME:**

- A. ASTM C206, Type S; or ASTM C207, Type S.

## **2.6 AGGREGATES (SAND):**

- A. ASTM C897, graded as required to suit texture of finish specified.

## **2.7 BONDING AGENT:**

- A. ASTM C932.

## **2.8 FACTORY PREPARED FINISH COAT FOR CEMENT PLASTER (STUCCO):**

- A. Factory prepared dry blend of materials, integrally colored, designed for exterior finish coat application.
- B. Pigments: ASTM C979/C979M, lime proof mineral oxide.
- C. Particle Size: Not more than 35 percent, by weight of all ingredients, including cement, aggregate, hydrated lime, admixture and coloring pigment is to pass a number 100 sieve.

## **2.9 ADMIXTURES:**

- A. Air Entrainment: ASTM C260/C260M.

## **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 construction documents. Where shown use wire lath or stucco mesh.
- B. On ceiling or soffit framing use flat diamond mesh lath.
- C. Over steel columns, provide expanded lath.
- D. Where metal plastering bases are used as a base for exterior cement plaster over wall sheathing, provide wire lath or stucco mesh with water resistant backing.

### **3.2 APPLYING METAL PLASTERING BASES:**

- A. In accordance with ASTM C1063, except as otherwise specified or indicated on construction documents.
- B. Form true surfaces, straight or in curves where shown on construction documents, without sags or buckles and with long dimension of lath at right angles to direction of supports.
- C. Terminate lath for ceiling or soffit construction at casing bead (floating angle construction) at perimeter angles between walls and ceilings or soffits.
- D. Lath with backing to 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 provided:
  - 1. Lap backing 50 mm (2 inches) for both horizontal and vertical laps.
  - 2. Install horizontal laps in a ship lap fashion to conduct water to the outside and over flashing or waterproofing.
- E. Do not install continuous metal plastering bases through expansion and control joints. Terminate at each side of joint.

- F. Attach lath directly to masonry and concrete with hardened nails, power actuated drive pins or other approved fasteners. Install fasteners at dimples or crimps only.
- G. Wood plugs are not acceptable.

### **3.3 INSTALLING PLASTERING ACCESSORIES:**

- A. Install accessories in accordance with ASTM C1063, 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.
  - 2. Install in one (1) piece, within the limits of the longest commercially available lengths.
- B. Corner Beads: External-corner reinforcement corner bead at exterior corners, as required to establish grounds, and where shown on construction documents.
- C. Strip Lath:
  - 1. Install centered over joints between dissimilar materials, such as hollow tile, brick, concrete masonry units, concrete, and joints with expanded 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 152 mm (6 inches) on centers.
- D. Casing Beads:
  - 1. Provide at locations where shown on construction documents and at following locations where plaster terminates to provide finish trim:
    - a. Against non-plastered surfaces such as masonry, concrete, and wood.
    - b. Against trim of steel frames and trim of other materials and equipment, except where trim overlaps plaster.
    - c. Around perimeter of openings except where edge is covered by flanges. Locate to conform to dimensions shown on shop drawings.
    - d. Where plaster for new walls or furring (vertical or horizontal) terminates against existing construction.
    - e. Both sides of expansion and control joints unless shown otherwise on construction documents.

2. Provide at perimeter angles between walls and ceilings so as to provide floating angle (unrestrained) construction in accordance with ASTM C1063.
- E. Cornerites:
1. Provide at interior corners of walls, partitions, and other vertical surfaces to be plastered, except where 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 101 mm (4 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. Extend joints 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 are to be prepared and conditioned in accordance with ASTM C926, except as otherwise specified.

### **3.5 PORTLAND CEMENT BASED PLASTER:**

- A. Provide portland cement based plaster where cement plaster (stucco) is shown and specified, and as follows:
1. Three-Coat work is to be used over all metal plastering bases, with or without solid backing.
- B. Proportion, mix and apply plaster in accordance with ASTM C926, except as otherwise specified.
1. Provide air entrained plaster for all exterior work.
  2. Finish coat is to have a sand float finish.

**END OF SECTION 09 24 00**