SECTION 09 24 00 – GUIDE SPECIFICATION FOR PORTLAND CEMENT PLASTER FOR FRAMED WALLS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes: Work includes all labor, materials, and equipment necessary to install all aspects of a portland cement plaster assembly.

B. Related Sections *[Delete unneeded sections.]*

C. 05 40 00 – Light gauge cold-formed steel framing

D. 06 11 00 – Wood Framed Construction

E. 06 16 00 – Sheathing

F. 07 90 00 – Joint Sealers

1.02 REFERENCES *[Delete unneeded references.]*

A. ASTM C150 – Portland Cement

B. ASTM C847 – Standard Specification for Metal Lath

C. ASTM C1032 - Woven Wire Plaster Base

D. ASTM C933 - Welded Wire Lath

E. ASTM C144/C897 – Aggregate for Job-Mixed Portland Cement-Based Plaster

F. ASTM C926 – Application of Portland Cement-Based Plaster

G. ASTM C1063 – Installation of Lathing and Furring for Portland Cement Based Plaster

H. PCA (Portland Cement Association) – Plaster (Stucco) Manual

I. ICC-ES Acceptance Criteria for Weather-resistive Barriers (AC38)

1.03 ASSEMBLY DESCRIPTION

A. General: Polymer-modified, fiber-reinforced Portland cement plaster is comprised of a water-resistive barrier, optional sheathing, lath, scratch, brown coats, and a finish coat. Minimum nominal ¾ inch cement thickness.

B. Application Methods: The plaster may be applied by hand tools or machine pumps but must have sufficient force to adhere to the substrate.

C. Framing shall have a deflection of L/360 or stiffer

1.04 SUBMITTALS

A. Product Data: All product data sheets, details, and warranty information that pertain to the project in accordance with Submittal Procedures.

B. Samples: Submitted upon request.

C. Samples of the finish coat shall be of an adequate size as required to represent each color and texture to be utilized on the project and produced using the same techniques and tools required to complete the project. No sample shall be less than 12” by 12”.

D. Retain approved samples at the construction site throughout the application process.

1.05 QUALITY ASSURANCE

A. Qualifications:

1. Manufacturer: All plaster component materials shall be by Edison Coatings, Inc., 3 Northwest Drive, Plainville, CT 06062, www.edisoncoatings.com.

2. Plastering Contractor: Work is to be performed by installer having a minimum of five (5) years' experience as the same business entity for work relating to this Section. Submit installer qualifications.

   a. Provide proof of current contractor's license and bond where required.

B. On-Site Mock-Ups: A minimum 10' x 10' mockup shall be produced for each type of installation and finish, using the same quality/techniques to be utilized on the project.

C. Retain approved mock-up at job site throughout the application process.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver all materials to the construction site in their original, unopened packaging with labels intact.

B. Inspection: Inspect the materials upon delivery to assure that specified products have been received. Report defects or discrepancies to the responsible party according to the construction documents; do not use reported material for application.

C. Storage: Store all products per manufacturer's recommendations. Generally, store materials in a cool, dry location; away from direct contact with the ground and/or concrete; out of direct sunlight; and protect from weather and other damage.

1.07 PROJECT CONDITIONS

A. Environmental Requirements: Follow product manufacturer's recommendations for environmental conditions and surface preparation.

B. Temperatures: Before, during and following the application of the portland cement plaster, the ambient and surface temperatures must remain above 40 degrees F (4 C) for a minimum period of 24 hours. Protect stucco from uneven and excessive evaporation, especially during hot, dry and/or windy weather. Protect the portland cement plaster from freezing for a period of not less than 24-hours after set has occurred.

C. Substrates: Prior to installation, inspect the wall for surface contamination, bond breakers, or other defects that may adversely affect the performance of the materials, and shall be free of foreign matter. Do not apply the portland cement plaster to substrates with temperatures less than 40 degrees F (4 C) or that contain frost or ice.

D. Inclement Weather: Protect applied material from deleterious effects until cured or dry.

E. Existing Conditions:

   a. Contractor shall walk the project prior to starting work and notify the architect or owner's representative of any deficiencies that will negatively impact the plaster or

parge coating. Do NOT proceed until remedied and contractor can provide warranty.

b. Contractor shall advise architect of any horizontal surfaces with inadequate slope.

F. Jobsite Resources: Notify architect if General Contractor fails to provide access to electrical outlets, clean, potable water, and a suitable and safe work area at the construction site throughout the application of the lath and portland cement plaster.

G. Good Practice: During the rainy season, colored finish plaster can be damaged if the gutters and downspouts are not in place. It is recommended to have gutters and downspouts installed as soon as possible after final plastering is complete.

a. All wood based products covered shall be dry and have a moisture content below 19%. DO NOT COVER WET FRAMING.

b. Inclement Weather: Protect applied material from deleterious effects until cured or dry.

c. Existing Conditions:

1. Contractor shall walk the project prior to starting work and notify the architect or owner's representative of any deficiencies that will negatively impact the plaster assembly. Do NOT proceed until remedied.

d. Contractor shall advise architect of any horizontal surfaces with inadequate slope.

e. Jobsite Resources: Notify architect if General Contractor fails to provide access to electrical outlets, clean, potable water, and a suitable and safe work area at the construction site throughout the application of the lath and portland cement plaster.

f. Good Practice: During the rainy season, colored plaster can be damaged if the gutters and downspouts are not in place. It is recommended to have gutters and downspouts installed as soon as possible after plastering is complete.

1.08 SEQUENCING AND SCHEDULING

A. Sequencing: Coordinate the installation of the lath and portland cement plaster with all other construction trades. To reduce stucco cracking, apply plaster only after the building is 90 percent dead loaded, and the interior gypsum has been installed.

B. Plastering contractor shall request and attend a pre-installation meeting with general contractor and architect prior to the framing being completed. Plastering contractor shall advise architect of control/expansion joint layout concerns. There shall be no cost to the owner for moving one-piece control joints prior and up to this meeting date, additional lineal footage of control joints from plans shall warrant a change order.

C. Staffing: Provide sufficient manpower and proper supervision to ensure continuous operation, free of cold joints, scaffolding lines, curing, variations in texture, etc.

1.09 Warranty

A. Warranty: Submit documentation on all products. At completion of work, contractor shall provide a written warranty documentation for the assembly and products used.

B. Warranty Length: Manufacturer shall provide a Limited Warranty for materials replacement for a period of 10 years following substantial completion of each installation.

C. Contractor shall warranty labor and workmanship for a period of 2 years following substantial completion of each installation.

2 MAINTENANCE

A. The following materials shall be presented to the owner following the application of the work:
    1. One container of finish for each color and texture utilized on the project.
    2. Supply a maintenance program for Owners O&M manual as required.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. All stucco mixes, admixtures and bonding agents shall be as manufactured by Edison Coatings, Inc., 3 Northwest Drive, Plainville, CT 06062 www.edisoncoatings.com.

B. Lath and Trim Accessories
   a. Stockton Products
   b. Structa Wire
   c. Tree Island/K-Lath
   d. Fry reglet
   e. Plastic Components

2.02 BASECOAT

A. CEM-PLAST 54 BASE with fiber reinforcement, by Edison Coatings
   a. Cement: Portland cement complying with ASTM C150.
   b. Lime: Hydrated Lime complying with ASTM C207.
   c. Sand: Sand shall comply with ASTM C144 or C897.
   d. Fiber: Complying with ASTM C1116

B. Water: No water is used in the specified system.

C. Admixture: ICE -9 RL as manufactured by Edison Coatings, Inc., www.edisoncoatings.com

2.03 WATER-RESISTIVE BARRIER

[Delete the options that are not used in the project. Choose the WRB option.] refer to SMA website for approved product list

A. Over Open Framing **[and non-Wood-based Sheathing]**:

[One layer of D kraft building paper, minimum 30 minute, complying with UBC Standard 14-1.]

[One layer of asphalt-saturated felt complying with ASTM D226 Type I]

[Equivalent material recognized in a current evaluation report as complying with the ICC-ES Acceptance Criteria for Water-Resistive Barriers (AC38).]

B. Over Wood-based Sheathing:

[Two layers of D kraft building paper, minimum 30 minute, complying with UBC Standard 14-1.]

[Two layers of asphalt-saturated felt complying with ASTM D226 Type I]

[Double layer of equivalent material recognized in a current evaluation report as complying with the ICC-ES Acceptance Criteria for Water-resistive Barriers (AC38).]

[SMA approved fluid applied WRB and one layer D paper, felt or equivalent]

2.04 LATH

A. *[Choose one of the following lath options and delete the other options.] refer to SMA website for approved product list*

[Woven-Wire Lath: Nominal No. 17 gauge (0.058 inch), 1.5-inch opening, galvanized steel complying with ASTM C1032.]

[Welded Wire: Nominal No. 16 gauge (0.065 inch), 2-inch-by-2-inch opening, or No. 17 gauge 1 ½ by 1 ½ inch opening, galvanized steel complying with ASTM C933.]

[Expanded Lath: Nominal [2.5 lb/yd2] [3.4 lb/yd2] weight, galvanized steel complying with ASTM C847.]

[Rib Lath: Nominal 3.4 lb/yd2 weight, galvanized steel complying with ASTM C847. *[For open soffit use only.]*]

2.05 SHEATHING

A. *[Sheathing is optional. If sheathing is specified, then choose one the following and delete the others. If no sheathing will be used then delete this entire section.]*

[Gypsum Sheathing: Water-resistant treated core gypsum sheathing must comply with ASTM C79 or C1396.]

[Glass Matt Sheathing: Glass mat faced, water-resistant treated core gypsum sheathing must comply with ASTM C1177 and be recognized in a current evaluation report.]

[Gypsum Board: Water-resistant exterior fiber-reinforced gypsum sheathing must comply with ASTM C1278 and be recognized in a current Evaluation Report.]

[Fiberboard: Minimum 1/2-inch-thick (13mm), asphalt-impregnated fiberboard must comply with ASTM C208 as a regular density sheathing.]

[Wood-based Structural Panels: <insert thickness>-inch-thick [plywood] [OSB]. [Plywood must be exterior or Exposure 1 and comply with DOC PS-1 or UBC Standard 23-2, or APA recommendations.] [OSB must be Exposure 1 and comply with DOC PS-2, or UBC Standard 23-3, as applicable.]] *[Insert the thickness and choose plywood or OSB references.]*

2.06 ACCESSORIES

[Delete the accessories from this section as needed.] Refer to SMA website for current approved product list.

A. Sealants: **[Polyurethane, polyurethane modified, polysulfide, or silyl-terminated polyether elastomeric sealant complying with ASTM C920 or 100% silicone]**.

B. Flashing (by others) : Flashing complying with IBC Section 1405.4 (2013) or IRC Section R703.8, as applicable, WRB must integrate in a "Shingle Fashion " with flashings.

C. Fasteners: Nails, staples, or screws used to rigidly secure lath and associated accessories shall be corrosion-resistant and meet the minimum requirements of ASTM C1063.

D. Zinc and Zinc-Coated (Galvanized) Accessories: The following accessories shall be fabricated from **[zinc] [or] [zinc-coated (galvanized) steel [pure zinc trims are most corrosion resistant, but much more susceptible to damage and more expensive. Typically limited to ocean front projects]]**.

E. Corner Aid: Minimum 26-gauge thick; expanded flanges shaped to permit complete embedding in plaster; minimum 2 in. wide; **[Square-edge] [Bull-nose]** style; use unless otherwise indicated. [for extra corrosion protection, trims can be double zinc dipped, extra charges will occur, specify PVC nose for acrylic finish coats]

F. Strip Mesh: Metal Lath, 3.4 lb/yd^2 expanded metal; 6 in. wide x 18 in. long. [used as "butterflies" to minimize re-entrant cracking]

G. Vent Screed: Minimum 26-gauge thick; thickness governed by plaster thickness; minimum 4-inch (102 mm) width, double "V" profile, with perforated expanse between "V's" of longest possible lengths.

H. Casing Bead: Minimum 26-gauge thick; thickness governed by plaster thickness; maximum possible lengths; expanded metal flanges, with square edges.

I. Drip Screed: Minimum 26-gauge thick, depth governed by plaster thickness, minimum 3-1/2 in. high flange, maximum possible lengths.

J. Control and Expansion Joints: Depth to conform to plaster thickness; use maximum practical lengths.

1. Control Joints: One-piece-type, folded pair of unperforated screeds in **<insert shape: M-shaped, double V, etc.>** configuration; removable protective tape on plaster face of control joint.

2. Expansion Joints: [Two-piece-type formed to produce a slip-joint.] [Pair of casing beads with sealant between.]

K. Plastic Trim: Fabricated from high-impact PVC.

1. Cornerbeads: With perforated flanges. **[Square-edge] [Bull-nose]** style; use unless otherwise indicated.

2. Casing Beads: With perforated flanges in depth required to suit plaster bases indicated and flange length required to suit applications indicated. **<insert style>** style; use unless otherwise indicated.

3. Control Joints: One-piece-type, folded pair of unperforated screeds in **<insert shape: M-shaped, double V, etc.>** configuration; removable protective tape on plaster face of control joint.

4. Expansion Joints: [Two-piece-type formed to produce a slip-joint.]

2.07 FINISHES

A. **CEM-PLAST 54 Finish, by Edison Coatings, Inc., www.edisoncoatings.com**

1. Cement: Portland cement complying with ASTM C150.
2. Lime: Hydrated Lime complying with ASTM C207.
3. Sand: Sand shall comply with ASTM C144 or C897.
4. Water: No water is used in the specified system.
5. Admixture: ICE -9 RL as manufactured by Edison Coatings, Inc., www.edisoncoatings.com

B. Color and Texture: Color and finish texture shall be as approved by the Architect.

BASE COATS

A. Scratch Coat: CEM-PLAST 54 BASE

a. Cement: Portland cement complying with ASTM C150.
b. Lime: Hydrated Lime complying with ASTM C207.
c. Sand: Sand shall comply with ASTM C144 or C897.

B. Brown Coat: CEM PLAST %$ Base with Fiber Reinforcement

C. CEM-PLAST 54 BASE with fiber reinforcement

a. Cement: Portland cement complying with ASTM C150.
b. Lime: Hydrated Lime complying with ASTM C207.
c. Sand: Sand shall comply with ASTM C144 or C897.
d. Fiber: Complying with ASTM C1116

D. Water: No water is used in the specified system.

E. Admixture: ICE -9 RL as manufactured by Edison Coatings, Inc., www.edisoncoatings.com

PART 3 - EXECUTION

EXAMINATION

A. Prior to the application of the portland cement plaster basecoat the plastering contractor shall ensure that:

1. Surface and site conditions are ready to receive work.

2. Grounds and Blocking: Verify that the items within the walls for other sections of work have been installed.

3. Notify architect/owner of any defects that may impact the finished assembly. Proceed as directed.

B. Substrates:

1. Acceptable substrates must be sound, secure and suitable for lath and plaster.

2. Substrates and adjacent materials must be dry and clean. Substrate surface must be flat, free of protrusions or planar irregularities greater than ¼-nch in 10-feet (6mm in 3m).

C. Flashings: All flashing around windows, at deck attachments, utility penetrations, roof lines, etc. and all kick-out flashing must be properly installed prior to application of portland cement plaster. Notify owner if flashings are missing, proceed as directed.

D. Unsatisfactory conditions or concerns shall be reported to the general contractor and/or builder and/or architect and/or owner. Do not proceed until directed in writing by architect or general contractor.

PREPARATION

A. Substrate/Framing: inspect all work prior to starting lath and plastering. Notify architect of any issues impacting performance, proceed as directed.

B. Surrounding Areas: Protect surfaces near the work of this section from damage, disfiguration, and overspray. Mask off all dissimilar materials.

INSTALLATION, GENERAL

A. General Installation: Refer to, ASTM C926, ASTM C1063, and/or the appropriate manufacturer's product data sheet for additional installation requirements and recommendations.

INSTALLING WEATHER PROTECTION

A. Water-Resistive Barrier: Apply water-resistive barrier complying with Section 1404.2 of the IBC or Section R703.2 of the IRC. Start at base of wall and overlap flashing flanges and in a "shingle-fashion" by a minimum of two (2) inches horizontal and six (6) inches vertical. Integrate with flashings to ensure incidental moisture drains down and weeps out. Reverse laps shall not be allowed.

B. Window Flashing (by others): Contractor shall inspect and verify the flashing between the window/door and the cement plaster is appropriate for the condition. Notify architect of any concerns. Refer to SMA flashing guidelines for nail flange style windows.

C. Flashing: Install flashing and trim per current Building Code <**insert local code>**. *[Install flashing and trims properly to ensure moisture does not accumulate and can easily drain to the exterior. All openings shall be properly flashed and designed to allow water to escape to the outside of the wall. All penetrations shall be properly flashed and/or sealed using approved methods. Walls should be designed to prevent bulk water from getting behind the stucco or running down the face of the stucco. The bottom of the wall is required to have weep screed or another effective means to drain any water that may get behind the stucco.]*

INSTALLING LATH/TRIMS

A. General: Installed per ASTM C1063 or per Architect's direction. Trims shall be full length and installed plumb/level to within 1/8 inch in eight (8) feet.

B. Weep screed shall be installed at the base of all framed walls.

C. Trims shall be attached per the trim manufacturer's instructions; however, do not exceed 24 inches on center spacing.

D. Apply lath per manufacturer's recommendations. Laps shall occur at horizontal and vertical joints. Attach lath six (6) to seven (7) inches on center along framing supports (studs). Fastener shall penetrate wood by a minimum ¾ inch, penetration of wood-based sheathing shall count as 50% of dimensional lumber. Metal framing by a minimum of three (3) full threads and engage the lath.

E. Lath shall lap the flange of accessories by more than 50%.

F. Control Joints: Installed per Architects direction. Single-piece control joint may be installed over continuous lath if approved by Building Official and/or Architect. If lath is discontinuous, framing shall support lath terminations. Notify architect of issues or changes.

G. Expansion Joints: Install per Architect's direction. Two-piece joints (expansion) must have lath terminate each side.

H. Contractor shall honor control or expansion joints in substrates.

I. Do not mix lath products on same wall.

J. Avoid excessive laps with expanded metal lath

K. Do not use rib lath on walls

L. Use wire nose corner for cement finish, PVC nose for acrylic finish

M. Lath shall cover more than 75% of solid flanges.

INSTALLING PORTLAND CEMENT PLASTER

A. All installation is to be performed in conformance with ASTM C926. The following are additional technical notes, but do not represent a complete procedure.

1. Per ASTM C926, apply portland cement plaster base coats by hand-troweling or machine-spraying to a total nominal thickness of 3/4 inch for direct application to masonry substrates. Reference Table 4 in ASTM C926 regarding application thicknesses.

2. Separation must be provided where plaster abuts dissimilar materials or openings.

3. Each plaster coat must be applied to an entire wall without interruption to avoid cold joints and abrupt appearance changes.

B. Apply dash bond coat, followed by scratch coat, followed by fiber-reinforced brown coat, followed by finish coat. Each coat shall be permitted to set before the next coat is applied. Plaster coats that have become dry shall be evenly dampened with water prior to applying subsequent coats.

C. Curing: Polymer-modified plaster is self-curing and does not require misting. Under dry, hot and/or windy conditions protect the plaster from drying too rapidly by shading or draping damp burlap over the surface

INSTALLING FINISH COAT

A. General: Mix and apply per manufacturer's product data sheet.

B. Do not apply to soft, contaminated or frozen previous coat.

C. Avoid applying to excessively hot walls.

D. Verification: Verify the desired color, material and texture to match the approved sample and/or mock-up prior to installation.

E. Avoid scaffold lines and cold joints

F. Fog coat (cement finish only) as needed to blend color variations

G. Finish coat shall be free of eye-catching imperfections.

CLEANING/PATCHING/TOLERANCE

A. Cleaning: Remove any and all materials used, overspray from adjacent surfaces, and all protective masking.

B. Patch and repair as needed, including but not limited to fog coating, imperfections and blisters.

C. Cracks shall be repaired per system manufacturer's instructions.

D. The brown coat of plaster shall be in tolerance:

1. Residential: Not to exceed ¼ inch in eight (8) feet

2. Commercial: Not to exceed ¼ inch in ten (10) feet

E. Eye catching variations in color or texture pattern will not be accepted.

PROTECTION

Protection: Protect applied material from inclement weather until dry and prevent it from freezing for a minimum of 24-hours after set and/or until dry. Refer to manufacturer's product data sheet for additional requirements.

END OF SECTION 09 24 00