



SECTION 09200

LIME PLASTER

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PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Conventional stucco system for exterior applications.
- B. Sustainable stucco system.
- C. Lime plaster finish system installed over a solid substrate for interior application.

1.2 RELATED SECTIONS

- A. Section 03300 - Cast-In-Place Concrete.
- B. Section 04220 - Masonry Units.
- C. Section 04290 - Adobe Masonry Units.
- D. Section 06110 - Wood Framing.
- E. Section 07190 - Vapor Barriers.
- F. Section 07270 - Air Barriers.
- G. Section 09205 - Metal Lath.
- H. Section 09210 - Gypsum Plaster.
- I. Section 09220 - Portland Cement Plaster.
- J. Section 09260 - Gypsum Board Systems.
- K. Section 09910 - Paints.

1.3 REFERENCES

- A. ASTM International (ASTM):
 - 1. ASTM A 641 - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire.

2. ASTM A 653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
3. ASTM B 69 - Standard Specification for Rolled Zinc.
4. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar.
5. ASTM C 847 - Standard Specification for Metal Lath.
6. ASTM C 897 - Standard Specification for Aggregate for Job-Mixed Portland Cement-Based Plasters.
7. ASTM C 1032 - Standard Specification for Woven Wire Plaster Base.
8. ASTM C 1063 - Standard Specification for Installation of Lathing and Furring to Receive Interior and Exterior Portland Cement-Based Plaster.
9. ASTM C 1396 - Standard Specification for Gypsum Board.
10. ASTM D 1784 - Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds.

B. Portland Cement Association (PCA): Portland cement Plaster (Stucco) Manual.

1.4 PERFORMANCE REQUIREMENTS

A. Structural (wind and axial loads):

1. Design for maximum allowable deflection, normal to the plane of the wall, of L/360.
2. Design for wind load in conformance with code requirements.

B. Moisture Control:

1. Prevent the accumulation of water into or behind the stucco, either by condensation or leakage into the wall construction, by the design and detailing of the wall assembly.
 - a. Provide corrosion resistant flashing where water is likely to penetrate components in the wall assembly to direct water to the exterior, including, above window and door heads, beneath window and door sills, at roof/wall intersections, decks, abutments of lower walls with higher walls, above projecting features, and at the base of the wall.
 - b. Air Leakage Prevention: Prevent excess air leakage in the design and detailing of the wall assembly. Provide continuity between air barrier components in the wall assembly.
 - c. Vapor Diffusion and Condensation: Perform a dew point analysis of the wall assembly to determine the potential for accumulation of moisture in the wall assembly as a result of water vapor diffusion and condensation. Adjust insulation thickness and/or other wall assembly components accordingly to minimize the risk of condensation.
 - d. Waterproofing/Air Barrier over sheathing, concrete and masonry.
 - e. At expansion joints, back joints with barrier membrane.

C. Grade Condition:

1. Do not apply stucco below grade or on surfaces subject to continuous or intermittent water immersion or hydrostatic pressure. Provide minimum 4 inch (102 mm) clearance above earth grade, minimum 2 inch (51 mm) clearance above finished grade (pavers/sidewalk). Provide increased clearance in freeze/thaw climate zones.

D. Sloped Surfaces: Including foam trim and projecting architectural features attached to stucco.

1. Avoid the use of stucco on build-outs or weather exposed sloped and horizontal surfaces.
2. Build out trim and projecting architectural features from the stucco wall surface with code compliant EPS foam. Foam trim and projecting architectural

features shall have a minimum 1:2 (27 degree) slope along their top surface. Foam horizontal reveals shall have a minimum 1:2 (27 degree) slope along their bottom surface. Increase slope for northern climates to prevent accumulation of ice/snow and water on surface. Where trim/feature or bottom surface of reveal projects more than 2 inches (51 mm) from the face of the wall plane, protect the top surface with waterproof base coat. Avoid the use of trim and features that exceed the maximum allowable thickness of EPS permitted by code (typically 4 inches (102 mm)) unless approved by the code official. Periodic inspections and increased maintenance shall be required to maintain surface integrity of finishes on weather exposed sloped surfaces. Limit projecting features to easily accessible areas and limit total area to facilitate maintenance and minimize maintenance burden.

3. Do not use EPS foam on weather exposed projecting ledges, sills, or other projecting features unless supported by framing or other structural support and protected with metal coping or flashing.

E. Joints:

1. Provide two piece expansion joints in the stucco system where building movement is anticipated: at joints in the substrate or supporting construction, where the system is to be installed over dissimilar construction or substrates, at changes in building height, at floor lines, at columns and cantilevered areas. Provide one piece expansion/control joints every 144 ft² (13 m²). Do not exceed length to width ratio of 2-1/2:1 in expansion joint layout and do not exceed more than 18 feet (5.5 m) in any direction without an expansion joint. Cut and wire and tie lath to the expansion/control joint accessory so lath is discontinuous beneath the accessory. At expansion joints, back the joint with barrier membrane.
2. Provide one piece expansion/control joints at through wall penetrations, including above and below doors or windows.
3. Provide minimum 3/8 inch (9.5 mm) wide joints where the system abuts windows, doors and other through wall penetrations.
4. Provide accessories at stucco terminations and joints.
5. Provide sealant at stucco terminations.

F. Fire Protection:

1. Do not use foam trim in excess of 4 inches (102 mm) thick unless approved by the code official.
2. Refer to the applicable code compliance report for other limitations and fire-resistive assemblies that may apply.

G. Stucco Thickness:

1. Application to Metal Plaster Bases:
 - a. Woven wire fabric lath: Stucco thickness shall be 3/4 inch (19 mm) applied in two coats.
 - b. Galvanized diamond mesh metal lath (Minimum 2.5 lb/yd² (1.4 kg/m²)): stucco thickness shall be 3/4 to 7/8 inch (19 to 22 mm) applied in two coats.
2. Thickness shall be uniform throughout the wall area.

1.5 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Manufacturer's data sheets on each product to be used, including:

1. Preparation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Installation methods.

- C. Evidence of applicator's experience including project identification with names of Owner and Architect/Engineer.
- D. Certification of compliance of materials with product specifications.
- E. Selection Samples: For each finish product specified, two complete sets of color chips representing the manufacturer's full range of available colors and patterns.
- F. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square representing actual product, color, and patterns.
- G. Quality Sample(s): Apply eco stucco over primed substrate sample. Prepare sample to show substrate, primer, base coat, finish coat, and sealer if scheduled in accordance with design requirements. Submit full size mock over masonry substrate. Approved sample shall be available at the job site with final sign off by the architect and/or the owner.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications:
 1. Insured and engaged in application of Portland cement stucco for a minimum of three years.
 2. Knowledgeable in the proper use and handling of eco stucco materials.
 3. Employ skilled mechanics who are experienced and knowledgeable in waterproofing/air barrier, lathing and furring, Portland cement stucco application, and familiar with the requirements of the specified work.
 4. Successful completion of minimum of three projects of similar size and complexity to the specified project.
 5. Provide the proper equipment, manpower and supervision on the job site to install the system in compliance the Project plans and specifications.
- B. Mock-Up: Provide a mock-up for evaluation of surface preparation techniques and application workmanship.
 1. Finish areas designated by Architect.
 2. Do not proceed with remaining work until workmanship, color, and sheen are approved by Architect.
 3. Refinish mock-up area as required to produce acceptable work.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver manufactured materials in original packages or containers, fully identified with manufacturer's labels intact and legible.
- B. Inspect materials upon delivery and immediately report to Architect any damaged or defective materials.
- C. Store materials in a sheltered area with minimum ambient temperature of 45 degree F (7 degree C).
- D. Store products in manufacturer's unopened packaging until ready for installation.
- E. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

1.8 PROJECT CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within

limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

- B. Environmental Requirements: Do not apply lime plaster when substrate or ambient air temperatures are below 45 degree F (5 degree C) or above 86 degree F (30 degree C). Maintain these conditions 24 hours before, during and 48 hours after installation of lime plaster.
- C. Maintain ambient and surface temperatures above 40 degree F (4 degree C) during application and drying period of waterproofing/air barrier. Maintain ambient and surface temperatures above 40 degree F (4 degree C) during application and for 24 hours after set of stucco.
- D. Prevent uneven or excessive evaporation of moisture from stucco during hot, dry or windy weather. For installation under any of these conditions provide special measures to properly moist cure the stucco.
- E. Provide protection of surrounding areas and adjacent surfaces from application of materials.
- F. Prevent excess interior humidity (including that caused by the use of temporary interior propane heaters) during and after construction.

1.9 PROJECT COORDINATION

- A. Protect substrate from climatic conditions to prevent weather damage until the installation of the waterproofing/air barrier.
- B. Provide protection of the waterproofing/air barrier installation with stucco no later than 60 days after installation.
- C. Commence the stucco installation after completion of all floor, roof construction and other construction that imposes dead loads on the walls to prevent excessive deflection (and potential cracking) of the stucco.
- D. Sequence interior work such as drywall installation prior to stucco installation to prevent stud distortion (and potential cracking) of the stucco.
- E. Provide site grading such that the stucco terminates above earth grade minimum 4 inches (102 mm) and above finished grade (pavers/sidewalk) minimum 2 inches (51 mm). Provide increased clearance in freeze/thaw climate zones.
- F. Coordinate installation of foundation waterproofing, roofing membrane, windows, doors and other wall penetrations to provide a continuous air barrier. Provide protection of rough openings before installing windows, doors, and other penetrations through the wall and provide sill flashing. Coordinate installation of waterproofing/air barrier components with window and door installation to provide weather proofing of the structure and to prevent moisture infiltration and excess air infiltration.
- G. Install window and door head flashing immediately after windows and doors are installed.
- H. Install diverter flashings wherever water can enter the wall assembly to direct water to the exterior.
- I. Install copings and sealant immediately after installation of the stucco and when finish coatings are dry.

- J. Attach penetrations through stucco to structural support and provide air tight and water tight seals at penetrations.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturer: eco stucco™, which is located at: 3060 Kerner Blvd. Suite S ; San Rafael, CA 94901; Toll Free Tel: 877-326-6872; Tel: 415-455-9896; Email: [request info \(info@ecostucco.com\)](mailto:info@ecostucco.com); Web: www.ecostucco.com
- B. Substitutions: Not permitted.
- C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 LATH

- A. Minimum No. 17 gauge 1.5 inch (38 mm) self-furred galvanized steel woven wire fabric in compliance with ASTM C 1032.
- B. Minimum 2.5 lbs/yd² (1.4 kg/m²) self-furred galvanized steel diamond mesh metal lath in compliance with ASTM C 847.

2.3 MECHANICAL FASTENERS

- A. Non-corroding fasteners, as recommended by manufacturer for type of framing.
 - 1. Wood Framing: Minimum 11 gauge, 7/16 inch (11 mm) diameter head galvanized roofing nails with minimum 3/4 inch (19 mm) penetration into studs or minimum #8 Type S wafer head fully threaded corrosion resistant screws with minimum 3/4 inch (19 mm) penetration into studs.
 - 2. Steel Framing: Minimum #8 Type S or S-12 wafer head fully threaded corrosion resistant screws with minimum 3/8 inch (9.5 mm) penetration into studs.
- B. Tie Wire: 18 gauge galvanized and annealed low-carbon steel in compliance with ASTM A 641 with Class I coating.

2.4 ACCESSORIES

- A. Primer: Conventional PVA.
- B. Weep screed, casing bead, corner bead, corner lath, expansion, and control joint accessories. Accessories shall meet the requirements of ASTM C 1063 and its referenced documents.
- C. PVC Plastic: In compliance with ASTM D 1784, cell classification 13244C.
- D. Zinc: In compliance with ASTM B 69.
- E. Galvanized Metal: In compliance with ASTM A 653 with G60 coating.

2.5 JOB-MIX MATERIALS

- A. Water: Clean and potable.
- B. Sand: Clean, well graded sand free of deleterious materials in compliance with ASTM C 897 or ASTM C 144.

2.6 STUCCO

- A. Common Scratch and Brown Coat Stucco: As manufactured by Mediterranean Colors, LLC.
 - 1. Job-site proportioned, Portland cement based stucco for trowel or pump application, field mixed with graded sand (ASTM C 897 or C 144) and water.
- B. Proprietary Scratch and Brown Coat Polymer Modified Stucco: As manufactured by Mediterranean Colors, LLC.
 - 1. Factory proportioned, fiber reinforced Portland cement based stucco, field mixed with graded sand (ASTM C 897 or C 144) and water.
- C. PRIMA/ PRIMA LITE Scratch and Brown Coat: As manufactured by Mediterranean Colors, LLC.
 - 1. Job-site proportioned, lime based stucco for trowel or pump application, field mixed with graded sand (ASTM C 897 or C 144) and water.
 - 2. Substrate: Sheathing, concrete and masonry as scheduled or indicated.
 - a. Scratch Coat: 3/8 inch (9.5 mm).
 - b. Brown Coat 3/8 inch (9.5 mm).
 - 3. Substrate: Straw-Bale.
 - a. Scratch Coat: 3/4 inch (19 mm).
 - b. Brown Coat: 1/2 inch (13 mm).

2.7 BASE COAT

- A. eco stucco PRIMA: As manufactured by Mediterranean Colors, LLC.
 - 1. Scratch and Brown Coat - job-site proportioned, lime stucco for trowel or pump application, field mixed with graded sand (ASTM C 897 or C 144) and water.
- B. eco stucco PRIMA LITE: As manufactured by Mediterranean Colors, LLC.
 - 1. Scratch and Brown Coat - job-site proportioned, lime stucco for trowel or pump application, field mixed with graded sand (ASTM C 897 or C 144) and water.
- C. eco stucco UNILIME: As manufactured by Mediterranean Colors, LLC.
 - 1. Lime plaster capable of achieving a nominal 1/8 inch (3 mm) thickness in one pass.
- D. eco stucco DECOLIME: As manufactured by Mediterranean Colors, LLC.
 - 1. Lime plaster capable of achieving a nominal 3/32 inch (2 mm) thickness in one pass.

2.8 REINFORCING MESH

- A. eco stucco GMESH: As manufactured by Mediterranean Colors, LLC.
 - 1. Nominal 260 g/m² - symmetrical, interlaced open-weave glass fiber fabric made with alkaline resistant coating for compatibility with eco stucco materials.
- B. eco stucco COMBO 90: As manufactured by Mediterranean Colors, LLC.
 - 1. Nominal 160 g/m² - woven glass fiber mesh factory-banded over 90 degree PVC bead designed to reinforce outside corners.
- C. eco stucco ARROW 45: As manufactured by Mediterranean Colors, LLC.
 - 1. Nominal 260 g/m² - Woven factory pre-cut 45 degree angle designed to provide reinforcement at corners of windows and doors.

2.9 FINISH COAT

- A. eco stucco MURALIME: As manufactured by Mediterranean Colors, LLC.
 - 1. Ready-mix lime plaster - 1/64 to 1/16 inch (0.4 to 2 mm) nominal thickness.
 - 2. Finish: Marble.
 - 3. Finish: Sandstone.
 - 4. Finish: Wash.
- B. eco stucco UNILIME: As manufactured by Mediterranean Colors, LLC.
 - 1. Job-mix lime plaster - 1/8 inch to 1/4 inch (3 mm to 6 mm) nominal thickness.
 - 2. Finish: Limestone.
 - 3. Finish: Travertine.
 - 4. Finish: Sandstone.
- C. eco stucco DECOLIME: As manufactured by Mediterranean Colors, LLC.
 - 1. Ready-mix lime plaster - 3/32 to 1/8 inch (2 to 3 mm) nominal thickness.
 - 2. Finish: Fossil.
 - 3. Finish: Limestone.
 - 4. Finish: Sandstone.
- D. eco stucco TRADILIME: As manufactured by Mediterranean Colors, LLC.
 - 1. Job-mix lime plaster - 1/8 inch to 1/4 inch (3 mm to 6 mm) nominal thickness.
 - 2. Finish: Fossil.
 - 3. Finish: Limestone.
 - 4. Finish: Sandstone.

2.10 COLOR

- A. Natural Mineral Pigments: Premix pigments in clean mixing water prior to adding to plaster.
 - 1. Standard Color: As selected by architect.
 - 2. Custom Color: As selected by architect.

2.11 MIXING

- A. PRIMA: As manufactured by Mediterranean Colors, LLC.
 - 1. Scratch Coat: 1 part PRIMA and 2 parts of sand, proportioned by volume.
 - 2. Brown Coats: 1 part PRIMA and 2.5 parts of sand, proportioned by volume.
 - a. Small Mixers:
 - 1) Discharge half of the required sand.
 - 2) Add all of the required lime.
 - 3) Dry-Mix thoroughly (about 2 minutes until uniform color is achieved).
 - 4) Add the remaining sand.
 - 5) Continue dry-mixing thoroughly.
 - 6) Pour water slowly and keep mixing until required workability is achieved (Approx. 10 minutes).
 - b. Large Mixers:
 - 1) Discharge equal parts of the required sand.
 - 2) Add equal parts of lime.
 - 3) Dry-mix thoroughly (about 2 minutes until uniform color is achieved).
 - 4) Add more sand (in equal parts).
 - 5) Mix well again (1-2 minutes).
 - 6) Add remaining lime and remaining sand.
 - 7) Continue dry-mixing thoroughly.
 - 8) Pour water slowly and keep mixing until required workability is

achieved (Approx. 12 minutes).

- B. UNILIME: Ready-mix lime base plaster as manufactured by Mediterranean Colors, LLC.
 - 1. Mix ratio: 5 qt. (4.5 to 5 lt.) of clean water per 55 lb (25 kg) bag.
 - 2. When color applies, pre-blend pigments with water to prevent starring.
 - 3. Add water into a clean mixing bucket.
 - 4. Discharge UNILIME and using a low speed electric mixer mix to a uniform consistency, adding color when applicable.
 - 5. Allow to settle for 10-15 minutes.
 - 6. Mix again before use to obtain a smooth and lump-free workable mud.

- C. TRADILIME: Job-mix lime plaster as manufactured by Mediterranean Colors, LLC.
 - 1. Sand Mix ratio: 1 part lime to 1.5 parts sand (30 mesh).
 - 2. Mechanically dry mix TRADILIME and sand.
 - 3. Water Mix ratio: 8 qt. (7.5 L) of clean water per 33 lb (15 kg) bag.
 - 4. When color applies, pre-blend pigments in water to prevent starring.
 - 5. Add water into a clean 5 gal (20 L) pail.
 - 6. Discharge TRADILIME and mix to a uniform consistency, adding color when applicable.
 - 7. Allow to settle for 15 minutes and remix before use.

- D. MURALIME: Ready-mix lime paint as manufactured by Mediterranean Colors, LLC..
 - 1. Mix ratio with water: 5.3 qt. (5 L) of clean water per 22 lb (10 kg) box.
 - 2. When color applies, pre-blend pigments with water to prevent starring.
 - 3. Add water into a clean 5 gal (20 L) pail.
 - 4. Discharge MURALIME and using a low speed electric mixer mix to a uniform consistency, adding color (wet or dry) when applicable.
 - 5. Allow to settle for 15 minutes.
 - 6. Mix again, adjusting the required quantity of water based on the chosen decorative technique:
 - a. Plaster Two Coats: Add up to 2 Qt.of water per 22 lb. bag.
 - b. Plaster One Coat: Add 2 to 3 Qt. of water per 22 lb. bag.
 - c. Paint: Add 6 to 8 Qt. of water per 22 lb. bag.

- E. DECOLIME: Ready-mix lime plaster as manufactured by Mediterranean Colors, LLC.
 - 1. Mix Ratio: 5 qt. (4.5 to 5 lt.) of clean water per 55 lb (25 kg) bag.
 - 2. When color applies, pre-blend pigments with water to prevent starring.
 - 3. Add water into a clean mixing bucket.
 - 4. Discharge DECOLIME and using a low speed electric mixer mix to a uniform consistency, adding color when applicable.
 - 5. Allow to settle for 15 minutes.
 - 6. Mix again before use to obtain a smooth and lump-free workable mud.

2.12 MATERIALS

- A. PRIMA: As manufactured by Mediterranean Colors, LLC.
 - 1. Physical Data:
 - a. Density: 0.6 kg/dm³.
 - b. pH: 12.
 - c. Flexural strength (28 days): 2.4 N / mm²
 - d. Compressive strength (28 days): 7.7 N / mm²
 - e. Adherence: ≥ 0.3 N / mm².

- B. PRIMA LITE: As manufactured by Mediterranean Colors, LLC.
 - 1. Physical Data:

- a. Density: 0.6 kg/dm³.
 - b. pH: 12.
 - c. Flexural strength (28 days): 1.2 N / mm²
 - d. Compressive strength (28 days): 2.5 N / mm²
 - e. Adherence: \geq 0.3 N / mm².
- C. UNILIME: As manufactured by Mediterranean Colors, LLC.
- 1. Physical Data:
 - a. Density: 1300 kg/m³.
 - b. pH: 11.
 - c. Compressive Strength (28 days): 7 MPa.
 - d. Flexural Strength (28 days): 4 MPa.
 - e. Dynamic Elasticity: 2949 MPa.
 - f. Adherence: \geq 0.6 Mpa.
 - g. Aggregate Grade: 20 mesh (0.8 mm).
- D. MURALIME: As manufactured by Mediterranean Colors, LLC.
- 1. Physical Data:
 - a. Density: \leq 0.75 \pm 0.05 kg/dm³.
 - b. pH: 12.
 - c. Specific Gravity: 0.9.
 - d. Dynamic Elasticity: \leq 3000 Mpa.
 - e. Aggregate Grade: 35 mesh (0.5 mm).
- E. DECOLIME: As manufactured by Mediterranean Colors, LLC.
- 1. Physical Data:
 - a. Density: 1.65 kg/Liter.
 - b. pH: 12.
 - c. Flexural strength (28 days): 2 N / mm².
 - d. Dynamic Elasticity: 8500 MPa.
 - e. Adherence: \geq 0.6 Mpa.
 - f. Aggregate Grade: 35 mesh (0.5 mm).
- F. TRADILIME: As manufactured by Mediterranean Colors, LLC.
- 1. Physical Data:
 - a. Density: 1.6 -1.8 kg/dm³.
 - b. pH: 12.
 - c. Flexural strength (28 days): 0.6 N / mm².
 - d. Compressive strength (28 days): 1.8 N / mm².
 - e. Dynamic Elasticity: 3500 - 6500 Mpa.
 - f. Adherence: \geq 0.3 N / mm².

2.13 MISCELLANEOUS MATERIALS

- A. Penetrating Sealer: Meta Creme by Dry-Treat Inc. 1104 Philadelphia Pike
Wilmington DE 19809, USA.
- B. eco stucco Natural Bee Wax: As manufactured by Mediterranean Colors, LLC.
- C. eco stucco Natural Black Soap: As manufactured by Mediterranean Colors, LLC.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify the suitability of existing conditions before starting work. Do not begin work of this Section until unsatisfactory conditions have been corrected. Secure grounds,

screeds, corner beads, casing beads, plaster stops, and accessories.

- B. Inspect surfaces for:
 - 1. Contamination: Algae, chalkiness, dirt, dust, efflorescence, fungus, grease, laitance, mildew or other foreign substances.
 - 2. Surface absorption and chalkiness.
 - 3. Cracks: Measure crack width and record location of cracks.
 - 4. Damage and deterioration.
 - 5. Moisture damage--record any areas of moisture damage.
- C. Inspect sheathing application for compliance with applicable requirement:
 - 1. Exterior Gypsum Sheathing shall comply with GA-253.
 - 2. Glass Mat Faced Gypsum Sheathing shall comply with manufacturer's instructions.
 - 3. Exterior Grade and Exposure 1 wood based sheathing shall comply with APA Engineered Wood Association E 30.
- D. Report deviations from the requirements of project specifications or other conditions that might adversely affect the stucco installation to the Architect.

3.2 PREPARATION

- A. Concrete (Cast-in-Place):
 - 1. Provide a surface that is slightly scarified, water absorbent, straight and true to line and plane.
 - 2. Remove form ties and trim projecting concrete so it is even with the plane of the wall.
 - 3. Remove form release agents by washing with a trisodium phosphate detergent and rinsing with clean water.
 - 4. Establish surface profile by sandblasting, water-blasting, wire brushing, chipping or other appropriate means.
 - 5. Remove all dust, dirt, grease, laitance or other bond inhibiting material.
 - 6. Pre-moisten absorbent surfaces with water prior to placement of stucco.
- B. Concrete Masonry Units:
 - 1. Remove projecting joint mortar so it is even with the plane of the wall.
 - 2. Remove surface contaminants such as efflorescence, existing paint or any other bond inhibiting material by sandblasting, water blasting, wire brushing, chipping or other adequate means.
 - 3. Pre-moisten the surface with water just prior to placement of stucco, or apply one uniform coat of bonding agent by brush or roller.
- C. Sheathing:
 - 1. Gypsum sheathing in compliance with ASTM C1396.
 - 2. Glass mat faced gypsum sheathing in compliance with ASTM C 1177.
 - 3. Exterior or Exposure 1 wood-based sheathing (plywood and oriented strand board (OSB)).
 - 4. Verify installation of sheathing in compliance with applicable requirement.
 - 5. Protect the substrate with a moisture barrier as required by the applicable code and install lath and accessories.
- D. Interior Surfaces:
 - 1. Comply with manufacturer's written instructions for substrate preparation.
 - 2. Remove hardware, electrical switch and outlet plates, lighting fixtures and other items already in place. After completion of work, reinstall items using workers skilled in the trades involved.
 - 3. Protect adjacent surfaces and items that are not to receive plaster finish, but

which cannot be removed, from finish work. Use masking materials that will not damage protected items and surfaces. Leave tape 1/16 inch (1.5 mm) from the edge of plaster surface for easy, clean removal.

4. Lightly sand any high gloss or glossy sealed surface with 150 grit sand paper.
5. Clean substrates of substances that could impair bonding including mold, mildew, oil, grease, salts, contamination and dirt using a Tri-Sodium Phosphate or equal paint preparation cleaner. Allow surface to fully dry before plaster application.
6. For older substrates knock down high points with putty knife, scraper, or drywall sanding screen. Clean and fill any mortar joints and depressions with UNILIME, leveling with the substrate. High gloss surface shall be sanded and lead paint removed in accordance with OSHA regulations.
7. Substrate: For gypsum board substrates, apply coats of joint compound over joints and fasteners to achieve a minimum of a Level 3 or better. Touch up and sand as needed prior to applying primer.
8. Primer: Brush primer along the edges and inside corners; roll on over the wall plane. Provide a primer application that will ensure a proper suction and bonding of the plaster. Let primer dry overnight prior to base coat application.
9. Prepare all materials in accordance with manufacturer's recommendations.

3.3 INSTALLATION

- A. Substrate: Cast-In-Place Concrete and Concrete Masonry Units:
 1. Install foundation weep screed at the base of the wall.
 2. Install casing beads at stucco terminations - doors, windows and other through wall penetrations. Install two piece expansion joints (or back-to-back casing beads) at joints in the supporting construction, building expansion joints, where the stucco is to be installed over dissimilar construction or substrates, at changes in building height, at floor lines, columns, and cantilevered areas. Install one piece expansion joints at corners of windows, doors and similar through wall penetrations, and every 250 sf (23 m²). Install corner bead at outside corners and corner lath at inside corners. Install full accessory pieces where possible and avoid small pieces. Seal adjoining pieces by embedding ends in sealant. Abut horizontal into vertical joint accessories. Attach at no more than 7 inches (178 mm) on center into concrete/masonry with appropriate fasteners.
 3. Pre-moisten concrete masonry units and absorbent concrete prior to the placement of stucco (unless bonding agent has been applied to the surface).
 4. Scratch and Brown Coat Application:
 - a. Scratch Coat: apply the stucco with sufficient pressure to ensure intimate contact with the substrate and complete coverage to a thickness of 3/16 inch (5 mm). Score the stucco horizontally upon completion of each panel in preparation for a second coat.
 - b. Brown Coat: As soon as the first coat is firm enough to receive the second coat without damage, apply the second coat. Alternatively, moist cure the first coat up to 48 hours and dampen the scratched surface with water immediately before applying the second coat. Apply the second coat with sufficient pressure to ensure intimate contact with the first coat to an approximate thickness of 3/8 to 1/2 inch (9.5 to 12 mm). Use a rod or straight edge to bring the surface to a true, even plane. Fill depressions in plane with stucco.
 5. One Coat Application: Apply the stucco with sufficient pressure to ensure intimate contact with the substrate and complete coverage to an approximate thickness of 1/2 inch (13 mm).
 6. After the stucco has lost sufficient moisture so that the surface sheen has disappeared, float the surface lightly with a darby or wood float to compress

- the surface and to provide a smooth, yet open, even surface.
7. Moist cure after the stucco has set by lightly fogging the surface for at least 48 hours. Fog as frequently as required during the 48 hour period to prevent loss of moisture from the stucco. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75 percent the frequency of moist-curing can be reduced.
 8. In hot weather or windy conditions, moist cure the surface for at least the first 3 to 4 days to prevent loss of moisture from the stucco. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75 percent the frequency of moist-curing can be reduced. Protect from frost and adverse weather conditions for a minimum of 72 hours.
- B. Installation Over Frame Construction with Sheathing:
1. Weep Screed Installation:
 - a. Install foundation weep screed at the base of the wall securely to framing with mechanical fastener. Locate foundation weep screed so that it overlaps the joint between the foundation and framing by a minimum of 1 inch (25 mm). Locate the foundation weep screed minimum 4 inches (100 mm) above earth grade, 2 inches (51 mm) above finished grade
 2. Weather Protection:
 - a. Protect sills of rough openings with barrier membrane.
 - b. Apply moisture barrier in compliance with the applicable building code. Wrap paper into rough opening and lap over barrier membrane at jambs. Lap paper over foundation weep screed attachment flange and window/door head flashings.
 3. Casing Bead and Expansion Joint Installation:
 - a. Install casing beads at stucco terminations, including doors, windows and other through wall penetrations. Install expansion joints (or back-to-back casing beads) at building expansion joints, where the stucco is to be installed over dissimilar construction or substrates, at changes in building height, at floor lines, columns, and cantilevered areas. Install one piece expansion joints at corners of windows, doors, and similar through wall penetrations, and every 144 sf (13 m²). Install full accessory pieces where possible and avoid small pieces. Seal adjoining pieces by embedding ends in sealant. Abut horizontal into vertical joint accessories. Attach at no more than 7 inches (178 mm) into framing with appropriate fasteners.
 4. Lath Installation:
 - a. Diamond Mesh Metal Lath:
 - 1) General: Install metal lath with the long dimension at right angles to structural framing. Terminate lath at expansion joints. Do not install continuously beneath joints.
 - 2) Seams/Overlaps: Overlap side seams minimum 1/2 inch (13 mm) and end seams minimum 1 inch (25 mm). Stagger end seams. Overlap casing beads and expansion joints minimum 1 inch (25 mm) over narrow wing accessories, minimum 2 inches (51 mm) over expanded flange accessories. Do not install lath continuously beneath expansion joints.
 - 3) Attachment: Fasten securely through sheathing into structural framing at 7 inches (178 mm) on center maximum vertically and 16 inches (406 mm) on center horizontally. Wire tie at no more than 9 inches (225 mm) on center at: side laps, accessory overlaps, and where end laps occur between supports.
 - b. Woven wire fabric lath - follow installation as for metal lath except overlap all seams by one mesh minimum.

- c. Paper-backed lath - follow installation as for metal lath. Lap lath over lath, not paper to lath, overlap. For horizontal overlaps the paper backing shall lap shingle style behind the lath to lath overlap.
 - 5. One Piece Expansion Joint Installation:
 - a. Install one piece expansion joints over lath at through wall penetrations, including above and below doors or windows (unless another type of expansion joint is provided at these locations or one piece expansion joints are provided). Install one piece expansion joints over lath every 144 sf (13 m²). Wire tie one piece expansion joints to lath at no more than 7 inches (178 mm) on center. Ensure lath is discontinuous beneath joints.
 - 6. Inside and Outside Corners:
 - a. Install corner lath at inside corners and corner bead at outside corners over lath. Attach through lath into framing at no more than 7 inches (178 mm) on center with appropriate fasteners.
 - 7. Stucco Installation:
 - a. Scratch Coat: apply stucco with sufficient pressure to key into and embed the metal lath. Apply sufficient material, 3/8 to 1/2 inch (9.5 to 13 mm), to cover the metal lath and to permit scoring the surface. Score the stucco horizontally upon completion of each panel in preparation for a second coat.
 - b. Brown Coat: As soon as the first coat is firm enough to receive the second coat without damage, apply the second coat. Alternatively, moist cure the first coat up to 48 hours and dampen the scratched surface with water immediately before applying the second coat. Apply the second coat with sufficient pressure to ensure intimate contact with the first coat and as needed to bring the stucco to a uniform thickness that matches the grounds of the accessories. Use a rod or straight edge to bring the surface to a true, even plane. Fill depressions in plane with stucco. Final thickness of stucco shall be minimum 3/4 inch (19 mm), maximum 7/8 inch (22 mm).
 - c. After the stucco has become slightly firm float the surface lightly with a darby or wood float to compress the surface and to provide a smooth, even surface. Moist cure after the stucco has set by lightly fogging for at least 48 hours. Fog as frequently as required during the 48 hour period to prevent loss of moisture from the stucco. Avoid eroding the stucco surface with excess moisture. If relative humidity exceeds 75 percent the frequency of moist curing can be reduced.
- C. Foam Build-Outs:
 - 1. Where foam build-outs terminate at a dissimilar material such as a window, door or other non-stucco surfaces, back-wrap the foam build-out by installing detail mesh onto the terminating edge of the stucco. Embed the mesh in the foam adhesive. Allow sufficient mesh to complete the back wrapping procedure.
 - 2. Install foam build-outs directly over hardened stucco with foam adhesive. Apply adhesive with the correct sized notched trowel to the back of the insulation board and immediately place build-out in the proper location on the wall. Press firmly into place.
 - 3. As soon as the foam build-out is firmly attached rasp the entire surface smooth.
 - 4. Complete the back-wrapping procedure by applying the foam base coat to the exposed edges of the foam build-out and minimum 2-1/2 inches (64 mm) onto the face. Pull the back-wrap mesh around the foam build-out and fully embed it into the foam base coat. Use a corner trowel for neat straight corners.
 - 5. Apply the foam base coat to the foam build-out and approximately 3 inches

- (76 mm) onto the adjacent stucco surfaces to an approximate thickness of 1/8 inch (3 mm).
6. Immediately embed the reinforcing mesh in the wet base coat. Trowel from the center to the edges of the mesh to avoid wrinkles and remove excess base coat. Overlap mesh seams minimum 2-1/2 inches (64 mm). Overlap mesh onto adjacent stucco wall surfaces minimum 2-1/2 inches (64 mm) at terminations of the foam. Do not install foam build-outs over joints in the stucco wall assembly. Terminate foam build-outs and back-wrap.
- D. Base Coat Installation:
1. Wait until stucco is at least 7 days old or the pH level of the surface is below 10 before applying base coat. Moist cure stucco beforehand and allow the surface to dry before applying finish.
- E. Installation over Straw Bale and Adobe/Cob Construction:
1. Scratch Coat: The surface shall be sound. Potential depressions or hollows shall be carried out and allowed at least 7 days to cure. The scratch coat shall be cast on (sprayed, harled, spatter dash, roughcast), improving the bond between plaster and substrate at a thickness of 1/2 inch (13 mm) in one pass to 3/4 inch (19 mm) in two passes - mixed accordingly to the method of application. Let cure for 10 days avoiding direct sunlight and drying winds.
 2. Brown Coat: Moist cure the scratch coat prior to application. Apply using firm and even pressure. When using a laying on trowel application, thickness shall be even throughout. Ensure not to overwork the surface. Upon completion, adequate protective and curing measures shall be put in place.
- F. Finish Installation:
1. Apply finish directly over the stucco or the base coat when dry. Apply finish by troweling with a stainless steel trowel to achieve the finish specified:
 - a. Moist cure the stucco or the base coat before the finish installation.
 - b. Avoid application in direct sunlight.
 - c. Apply finish in a continuous application, and work a wet edge towards the unfinished wall area. Work to an architectural break in the wall before stopping to avoid cold joints.
 - d. Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying. Adjustments in the scheduling of work may be required to achieve desired results; cool or damp conditions extend working time and retard drying and shall require added measures of protection against wind, dust, dirt, rain and freezing. Adjust work schedule and provide protection.
 - e. Do not install separate batches of finish side-by-side.
 - f. Do not apply finish into or over joints or accessories. Apply finish to outside face of wall only.
 - g. Do not apply finish over irregular or unprepared surfaces, or surfaces not in compliance with the requirements of the project specifications.
 - h. In hot weather conditions saturate the brown coat with water the night preceding the finish installation.
 2. Apply finish directly over the brown coat. Apply finish by troweling with a stainless steel trowel to achieve the finish specified:
 - a. Moist cure the brown coat before the finish installation.
 - b. Avoid application in direct sunlight.
 - c. Apply finish in a continuous application, and work a wet edge towards the unfinished wall area. Work to an architectural break in the wall before stopping to avoid cold joints.
 - d. Weather conditions affect application and drying time. Hot or dry conditions limit working time and accelerate drying. Adjustments in the

scheduling of work shall be required to achieve desired results; cool or damp conditions extend working time and retard drying and may require added measures of protection against wind, dust, dirt, rain and freezing. Adjust work schedule and provide protection.

- e. Do not install separate batches of finish side-by-side.
- f. Do not apply finish into or over joints or accessories. Apply finish to outside face of wall only.
- g. Do not apply finish over irregular or unprepared surfaces, or surfaces not in compliance with the requirements of the project specifications.
- h. In hot weather conditions saturate the brown coat with water the night preceding the finish installation.

3.4 INSTALLATION

A. Base Coat:

- 1. PRIMA: Scratch coat 3/8 inch (9.5 mm) - brown coat 1/2 inch (13 mm).
- 2. UNILIME: Nominal thickness 1/8 inch (3 mm). Apply with a stainless steel trowel in a single coat. Let surface moisture evaporate and lightly trowel float, knocking down high spots and other irregularities.
- 3. DECOLIME: Nominal thickness 3/32 to 1/8 inch (2 to 3 mm). Apply with a stainless steel trowel in a single coat. Let surface moisture evaporate and lightly trowel float, knocking down high spots and other irregularities.

B. Finish Coat:

- 1. Wash: Brush application over either suitable base coat or other porous, mineral finish - nominal thickness is achieved in 2 coats "wet-in-wet".
- 2. Plaster: Trowel apply an initial coat over entire surface. Leave surface smooth, yet "open" and matte in appearance. The surface shall be dry to the touch and set enough that a finger pressed into the surface no longer leaves an impression. Hand trowel finish coat in continuous application over entire plane. Trowel to desired texture matching control sample.
- 3. Trowel apply an initial coat over entire surface. Leave surface smooth, yet "open" and matte in appearance. The surface shall be dry to the touch and is set enough that a finger pressed into the surface no longer leaves an impression. Hand trowel finish coat in continuous application over entire plane. Trowel to desired texture matching control sample.
- 4. Trowel apply an initial coat over entire surface. Leave surface smooth, yet "open" and matte in appearance. The surface shall be dry to the touch and is set enough that a finger pressed into the surface no longer leaves an impression. Hand trowel finish coat in continuous application over entire plane. Trowel to desired texture matching control sample.

C. Wet Area Application:

- 1. Provide the following construction in tub and shower enclosure areas where scheduled.
- 2. Substrate:
 - a. Ensure framing is straight, properly aligned and spaced a maximum of 16 inches (406 mm) on center. Corners shall be reinforced.
 - b. Cement backer boards shall be fastened a maximum of 8 inches (203 mm) on center with ends supported by framing. Install boards 1/4 inch (6 mm) above floor, tub or shower pan and caulk.
 - c. Fill all joints with latex or acrylic modified thin-set (complying with ANSI A118.4). Embed 2 inches (51 mm) wide high-strength alkali resistant glass fiber tape in the mortar and level.
 - d. Allow joints to cure for 24-48 hours prior to priming. Apply primer evenly with brush, roller or proper spray equipment over the clean, dry

substrate and allow to dry thoroughly before applying base coat. Primer shall have sealing properties to prevent joints bleeding thru.

3. Base Coat:
 - a. Apply base coat over the cement board with a stainless steel trowel to a uniform thickness of approximately 1/8 inch (3 mm).
 - b. Work horizontally or vertically in strips of 40 inches (1016 mm), and immediately embed the mesh into the wet base coat by troweling from the center to the edge of the mesh.
 - c. Overlap mesh not less than 2-1/2 inches (64 mm) at mesh seams.
 - d. Feather seams and edges.
 - e. Corner Treatment: Double wrap all inside and outside corners with minimum 2-1/2 inches (64 mm) overlap in each direction with mesh is used in lieu of an accessory.
 - f. Corner Treatment: Embed corner mat in base coat, allow drying and then overlapping up to corner with standard reinforcing mesh embedded in base coat.
 - g. Avoid wrinkles in the mesh. The mesh shall be fully embedded so that no mesh pattern shows through the base coat. Re-skim with additional base coat if necessary.

4. Finish:
 - a. Apply a first finish coat directly over the base coat with a stainless steel trowel to a thin (scratch) layer.
 - b. Let surface moisture evaporate.
 - c. Apply a second coat with a stainless steel trowel to a smooth texture eliminating any voids, sand pits, trowel marks, or other surface defects.
 - d. Let surface moisture evaporate.
 - e. Using a plastic trowel, compress the surface.
 - f. Let surface dry to touch (pushing finger shall not leave impression).
 - g. Spray Black Soap diluted in hot water 2 spoons / Qt. of water, evenly, avoiding water drips along the treated surface.
 - h. With a clean soft cloth, buff the surface further to a glossy, slick texture while allowing the soap to penetrate.
 - i. Let the treated surfaces cure 10 days before use.

- D. Sealer:
 1. Meta Creme: Generously coat the surface with an even layer using a foam roller, brush. Leave the product to penetrate for minimum of 1 hour, and then thoroughly polish off excess product with a clean dry cloth/s.
 2. Bee's Wax: Cloth apply and buff over plaster 7 to 10 days following the application.
 3. Natural Black Soap: Spray or trowel apply wet into wet immediately following the application.

- E. Inspection:
 1. During application, clean adjacent surfaces and completed finishes of foreign materials resulting from the Work.
 2. Inspect completed installation with Architect to verify that finishes meet the visual standard established by the control sample, including the accuracy and consistency of color, physical texture, visual texture, and surface sheen. In addition, verify that the expected standards of craftsmanship have been maintained throughout the project.
 3. Verify the absence of cold joints, scaffold lines, or other surface effects that interrupt the overall visual balance.
 4. Clean, tightly troweled surfaces at all corners consistent with the level of quality found in the field portions of the plane.
 5. Crisp and clean transitions where plaster meets dissimilar materials.

6. Plaster again areas that do not meet the standards described above and repair other surfaces that may have been stained, marred, or otherwise damaged.

3.5 CLEANING AND PROTECTION

- A. Provide protection of installed materials from water infiltration into or behind them.
- B. Provide protection of installed stucco from dust, dirt, precipitation, and freezing.
- C. Point up around trim and other locations where plaster abuts dissimilar materials.
- D. Remove temporary coverings used to protect adjacent surfaces.
- E. Clean and repair adjacent surfaces and items soiled or damaged during work in this Section.

END OF SECTION