



Interior System

SECTION 09225

LIME PLASTER

PART 1 GENERAL

1.01 SECTION INCLUDES

Lime plaster finish system installed over a solid substrate for interior application.

1.02 RELATED SECTIONS

- A Section 03300 – Cast-In-Place Concrete.
- B Section 04220 – Masonry Units.
- C Sections 04290 – Adobe Masonry Units.
- D Section 09210 – Gypsum Plaster.
- E Sections 09220 – Portland cement Plaster.
- F Section 09260 – Gypsum Board Assemblies: Preparation of substrate.
- G Section 0990 – Paint and Coatings: Primer application.

1.03 REFERENCES

- A C 25 – Test Methods for Chemical Analysis of Limestone, Quicklime and Hydrated Lime.
- B C 206 –Finishing Hydrated Lime.
- C D 2486 - Standard Specification for Finishing Hydrated Lime.
- D D 3363 - Standard Test Method for Film Hardness by Pencil Test.
- E E 84 - Standard Test method for Surface Burning Characteristics of Building Materials.

1.04 SUBMITTALS

- A Product Data: Provide manufacturer's technical data on products specified, including installation instructions.
- B Sample(s): Apply eco stucco™ UNILIME over primed substrate sample. Prepare sample to show substrate, primer, lime plaster, and [sealer] 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.
- C LEED®

1.05 QUALITY ASSURANCE

- A Installer Qualification: Company specializing in performing work of this Section with a minimum of two (2) years of documented experience in plastering. Include list of at least 3 completed projects of similar scope with project names and addresses and contact information of architects, general contractors, and owners.
- B Installer shall extend typical one-year manufacturer warranty on work performed.

1.06 DELIVERY, STORAGE, AND HANDLING

- A Deliver materials in original packaging with manufacturer's labels identifying manufacturer and product.
- 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° F (7° C).

1.07 PROJECT CONDITIONS

- A Environmental Requirements: Do not apply lime plaster when substrate or ambient air temperatures is under 45° F (5° C) or over 86° F (30°C).
- B Maintain these conditions 24 hours before, during and 48 hours after installation of lime plaster.
- C Provide temporary enclosures in areas where work is being performed.
- D Restrict traffic from area where lime plaster has been applied during initial curing,

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A Acceptable Manufacturer: Mediterranean Colors, LLC – 10 Liberty Ship Way – Sausalito – CA – 94965 Phone: (415) 331-3886 - E-mail: info@medcolors.com.
- B Substitutions: Not permitted.

2.02 PRIMER *(supplied by others)*

- A PVA Type –preferably low to no VOC
- B AFM Safecoat Primer

2.03 JOB-MIX MATERIALS *(supplied by others)*

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

2.04 BASE COAT *(select one)*

- A eco stucco™ Natural Hydraulic Lime (NHL 3.5) — Scratch and Brown Coat - job-site proportioned, lime based stucco for trowel or pump application, field mixed with graded sand (ASTM C 897 or C 144) and water.
- B eco stucco™ UNILIME – Ready-mix lime base plaster for trowel application to provide a key over sealed, non-porous substrates.

(Note: UNILIME may be mixed with pigments and specified as a single finish coat application with a nominal thickness of 1/8”)

2.05 FINISH COAT *(select one)*

- A eco stucco™ TRADILIME –job-mix lime plaster – 1/8” -1/4” nominal thickness The grade of the sand contributes to final appearance. [limestone] [sandstone] [travertine]
- B eco stucco™ MURALIME – ready-mix lime paint – Applied in a two-coat brush application.
- C eco stucco™ MINERA – ready-mix lime plaster – 1/8” nominal thickness. [fossil] [marble] [sandstone]
- D eco stucco TRADILIME ST – ready-mix lime plaster – 1/8” nominal thickness. [travertine] [limestone] [sandstone]
- E eco stucco TRADILIME SF ready-mix lime plaster – 1/8” nominal thickness. [limestone] [sandstone] [fossil]

2.06 COLOR *(as shown on drawings)*

- A Standard Color: [] as selected by architect.
- B Custom Color: [] as selected by architect.

2.07 MIXING

- A Natural Hydraulic Lime (NHL 3.5)
 - 1. Scratch Coat: 1 part NHL and 2 parts of sand, proportioned by volume

2. Brown Coat: 1 part NHL 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).

(Best results are achieved by adding water slowly. The plaster should be more like dough than slurry. The longer the final mixing time, the more workable (fatter) the plaster will be).

- B UNILIME: Ready-mix lime plaster – Mix 1 part water to 5 parts by volume of lime or 7 to 8 quarts of water for 66 lb. bag. Let set for 15 minutes and remix briefly before use.
- C COLORS: Natural mineral pigments – Dry-mix according to color selection. Premix all red-based pigments with a small amount of hot water and mechanically shake for 2 to 5 minutes prior to adding to plaster.
- D TRADILIME: Job-mix lime plaster
 1. 16 Mesh Sand: Mix 1 part lime to 1 part by volume of sand and 1 part water to 5 parts by volume of lime. Let set 15 minutes and briefly remix before use.
 2. 20 Mesh Sand: Mix 1 part lime to 1.5 parts by volume of sand and 1 part water to 5 parts by volume of lime. Let set 15 minutes and briefly remix before use.
 3. 30 Mesh Sand: Mix 1 part lime to 2 parts by volume of sand and 1 part water to 5 parts by volume of lime. Let set 15 minutes and briefly remix before use.

- E MURALIME: Ready-mix lime wash – Mix 1 part water to 2 parts by volume of lime or 4 to 5 quarts of water per 22 lb. pail. Let set for 15 minutes and remix with 6 to 8 quarts.
- F MURALIME: Ready-mix lime plaster – Mix 1 part water to 2 parts by volume of lime or 4 to 5 quarts of water per 22 lb. pail. Let set for 15 minutes and remix with 1/2 to 3 quarts.
- G MINERA – Ready-mix lime plaster – Mix 1 part water to 5 parts by volume of lime or 5 to 6 quarts of water for 55 lb. bag. Let set for 15 minutes and remix briefly before use.
- H TRADILIME ST/SF: Ready-mix lime plaster – Mix 1 part water to 5 parts by volume of lime or 4 to 5 quarts of water per 44 lb. pail. Let set for 15 minutes and remix briefly before use.

Note: Dry mix for 5 minutes after all materials (including color) are in the mixer. Add the required water to achieve a uniform mix of workable consistency. Keep mix ratio consistent from batch to batch and mix each batch separately. Use only the minimum amount of water necessary for a workable mix. Retemper as needed. Use of excess water is detrimental to performance. Mix only as much material as can readily be used.

2.08 MISCELLANEOUS MATERIALS

- A Penetrating Sealer: AFM Safecoat® (supplied by others)
- B Bee's Wax (supplied by others)
- C Eco stucco™ Natural Black Soap

(AFM Safecoat and Bee's Wax are typically applied 7 to 10 days following the application. Black soap aims at waterproofing polished finishes in wet areas. It is impregnated into the finish while polishing).

PART 3 EXECUTION

3.01 EXAMINATION

- A Verify the suitability of existing conditions before starting work. Do not begin work of this Section until unsatisfactory conditions have been corrected.
- B Secure grounds, screeds, corner beads, casing beads, plaster stops, and accessories.

3.02 PREPARATION

- A Comply with manufacturer's written instructions for substrate preparation.
- B 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.
- C 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" from the edge of plaster surface for easy, clean removal.

- D Lightly sand any high gloss or glossy sealed surface with 150 grit sand paper.
- E 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.
- F 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 must be sanded and lead paint removed in accordance with OSHA regulations.
- G 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 throughout the surface dedicated to eco stucco™.
- H Primer: Brush primer along the edges and inside corners; roll on over the wall plan. A thorough primer application will ensure a proper suction and bonding of the plaster. Let primer dry overnight prior to eco stucco™ UNILIME base coat application.
- I Prepare all materials in accordance with manufacturer's recommendations.

3.03 APPLICATION

A Base Coat (*select one*)

1. NHL 3.5: [Adobe/Cob] [Rammed Earth][Rastra R or Perform Wall™] [Foam Building Blocks][Straw Bale] [Brick / Concrete Block]– scratch coat 3/8" – brown coat 1/2".
2. UNILIME: [Painted Surface][Gypsum Plaster] [Cast-Concrete] [New Drywall] [New Blue Board] [AAC Blocks] - nominal thickness 1/8". Apply with a stainless steel trowel in a single coat. Let surface moisture evaporate and sand float while knocking down high spots and other irregularities.

B Finish Coat (*select one*)

1. UNILIME: Trowel-apply in a single finish coat directly over suitable substrates listed in section 3.03.A.2 – nominal thickness 3/32".
2. MURALIME
 - a. Wash: Brush application over either suitable base coat listed in Section 3.03.A or other porous, mineral finish - nominal thickness is achieved in 2 coats "wet-in-wet".
 - b. Plaster: Trowel apply an initial coat over entire surface. Leave surface smooth, yet "open" and matte in appearance. The surface should 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. [TRADILIME] [MINERA] [TRADILIME ST] [TRADILIME SF] Trowel apply an initial coat over entire surface. Leave surface smooth, yet "open" and matte in appearance. The surface should 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 Sealer (*select one*)

1. AFM Safecoat® Penetrating WaterStop (*supplied by others*): Brush apply over plaster 7 to 10 days following the application,
2. Bee's Wax (*supplied by others*): Cloth apply and buff over plaster 7 to 10 days following the application.
3. Natural Black Soap: Specify over smooth finishes achieved with either MURALIME or MINERA. Spray or trowel apply during the polishing stage.

3.04 INSPECTION

- A During application, designated crew shall clean adjacent surfaces and completed finishes of foreign materials resulting from their work.
- B Inspect completed installation with project manager to verify that all finishes meet the visual standard established by the control sample, including the accuracy and consistency of color, physical texture, visual texture, and surface sheen if applicable. In addition, verify that the highest standards of craftsmanship have been maintained throughout the project.
- C Absence of cold joints, scaffold lines, or other surface effects that interrupt the overall visual balance.
- D Clean, tightly troweled surfaces at all corners consistent with the level of quality found in the field portions of the plane.
- E Crisp and clean transitions where plaster meets dissimilar materials.
- F Plaster again area that do not meet the standards described above and repair other surfaces that may have been stained, marred, or otherwise damaged.

3.05 CLEANING AND PROTECTION

- A Protect adjacent finished surfaces from potential damage during plaster installation.
- B Remove temporary coverings used to protect adjacent surfaces and reinstall hardware, plates, lighting fixtures and other items previously removed.
- C Clean and repair adjacent surfaces and items soiled or damaged during Work of this Section.
- D Apply penetrating sealer or bee's wax in high-traffic areas.
- E Apply penetrating sealer or black soap in water-exposed area.

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