MANUFACTURER'S SPECIFICATIONS
Section 09225 – ST. ASTIER LIME PLASTER (NHL)
PLASTER ON HEMPCRETE

ST. ASTIER NATURAL HYDRAULIC LIME PLASTER

PART 1 – GENERAL

1.1 Summary

A. This Section includes three (3) coat lime plaster system with St. Astier Natural Hydraulic Lime.

B. Related Sections

1. Section 05400 – Cold Formed Metal Framing
2. Section 06112 – Framing and Sheathing: Wood Studs

1.2 References

A. American Society for Testing and Materials

1. ASTM C25 – Test Methods for Chemical Analysis of Limestone, Quicklime and Hydrated Lime.
2. ASTM C109 – Test Method for Compressive Strength of Hydraulic Cement Mortars.
3. ASTM C141 / C141M – Standard Specification for Hydrated Hydraulic Lime for Structural Purposes.
4. ASTM C144 – Standard Specification - Aggregate for Masonry Mortar.
5. ASTM C926 – Standard Specification for Application of Portland Cement-Based Plaster.
6. ASTM C979 – Standard Specification for Pigments for Integrally Colored Concrete.

B. European Standard

1. EN 459-1 Building Lime – Part 1: Definitions, Specifications and Conformity Criteria
2. EN 459-2 Building Lime – Part 2: Test Methods
3. EN 459-3 Building Lime – Part 3: Conformity Evaluation

C. Federal Specification Unit

1. FS UU-B-790 – Building Paper, Vegetable Fiber: Kraft, Waterproofed, Water Repellent and Fire Resistant.

D. Portland Cement Association

1. PCA – Portland Cement Plaster (Stucco) Manual.

1.3 Performance Requirements

A. Structure to be designed in such a way as to minimize the transfer of stress from building to plaster skin.

B. Fabricate vertical elements to limit surface to 1 / 480 deflection under load of [100 lbs. See local Building Code requirements.].

C. Fabricate horizontal elements to limit finish surface to 1 / 360 deflection under superimposed dead load and wind uplift loads.

1.4 Submittals

A. Section 01330 – Submittal Procedures: Submittal Procedures.

B. Product Data: Submit data on plaster materials, characteristics and limitations of products specified with reference to successful installations in North America for a minimum of ten (10) years.

C. Samples: Submit two samples, 12 inch by 12 inch in size, illustrating finish color and texture.

1.5 Quality Assurance

A. Perform Work in accordance with Manufacturer's Instructions.

1.6 Qualifications

A. Manufacturer: All St. Astier NHL shall be obtained from:
TransMineral USA, Inc.
201 Purrington Road
Petaluma, CA 94952
707-769-0661
707-769-0352 Fax
transmin@sonic.net
www.limes.us
www.transmineralusa.com

or its authorized distributors.

B. Installer: Company specializing in performing plaster/stucco work with a minimum of three (3) years experience with similar products.

1.7 Mock-up

A. Section 01400 – Quality Requirements: Requirements for mock-up.

B. Construct mock-up, ___ feet long by ____ inch wide, including exterior and interior wall and ceiling system illustrating surface finish and color.

C. Locate where directed by Architect.

D. [Incorporate accepted mock-up as part of Work.]

E. [Remove mock up when directed by Architect.]

1.8 Pre-Installation Meetings

A. Section 1300 – Administrative Requirements: Pre-Installation Meeting.

B. Convene minimum one week prior to commencing work of this SECTION.

1.9 Environmental Requirements

A. Provide environmental conditions at areas where Work of this SECTION is being performed to allow limeplaster to properly cure.

B. Take precautionary measures necessary to assure that excessive temperature changes do not occur.

C. Do not apply limeplaster unless minimum ambient temperature of 45 degrees F and a maximum of 85 degrees F has been and continues to be maintained for a minimum of 48 hours prior to application and until plaster is cured.

D. Hot Weather Requirements: Protect limeplaster from uneven and excessive evaporation during dry, hot weather. Provide tarping over the outside of all scaffolding.

PART 2 – PRODUCTS

2.1 Lime Plaster (NHL)

A. Manufacturer

1. CESA – Imported and distributed by TransMineral USA, Inc.
2. Substitutions not permitted.

2.2 Components

A. Performance requirements. Pozzolanic or other additions (including additions such as titanium dioxide or limestone filler) not permitted. Manufacturer to disclose all components as per REACH (Registration, Evaluation, Authorization and Restriction of Chemicals) and HPD (Health Product Declaration).

[1. NHL 2: Product must fulfill all requirements of EN-459 and ASTM C-141 and have:
   a. Available lime: 50 to 60%.
   b. Damaging components: chemical and mineralogical analysis.
      - SO3 < 0.50%.
      - Compatibility with backgrounds containing sulfate or gypsum.
      - Alkalis content to be compatible with old masonry. Total alkalis < 0.5%
   c. Expansion: < 1mm (C-141 autoclave expansion test method 11.5).
   d. Whiteness index: Y 76 ± 1
   e. Compressive strength (per EN-459): 4.5 MPa ± 0.5.
   f. Compressive strength at full carbonation. Provide testing data (2 years) for required mixing ratios.
   g. The product shall be reworkable at 24 hours as tested in accordance with C-141 11.7.]

[2. NHL 3.5: Product must fulfill all requirements of EN-459 and ASTM C-141 and have:
   a. Available lime: 20 to 25%.
   b. Damaging components: chemical and mineralogical analysis.
      - SO3 < 0.50%.
      - Compatibility with backgrounds containing sulfate or gypsum.

- Alkalis content to be compatible with old masonry. Total alkalis < 0.5%

c. Expansion: < 1mm (C-141 autoclave expansion test method 11.5).
d. whiteness index: Y 72 ± 1
e. Compressive strength (per EN-459): 7 Mpa ± 0.75
f. Compressive strength at full carbonation. Provide testing data (2 years) for required mixing ratios.
g. The product shall be reworkable at 24 hours as tested in accordance with C-141 11.7.]

[3. NHL 5: Product must fulfill all requirements of EN-459 and ASTM C-141 and have:
a. Available lime: 15 to 20%.
b. Damaging components: chemical and mineralogical analysis.
- SO3 < 0.50%.
- Compatibility with backgrounds containing sulfate or gypsum.
- Alkalis content to be compatible with old masonry. Total alkalis < 0.5%

b. Expansion: < 1mm (C-141 autoclave expansion test method 11.5).
c. Whiteness index: Y 67 ± 1
d. Compressive strength (per EN-459): 8.5 Mpa ± 0.75
e. Compressive strength at full carbonation. Provide testing data (2 years) for required mixing ratios.
g. The product shall be reworkable at 24 hours as tested in accordance with C-141 11.7.]

B. Plaster Base Materials

1. Binder: St. Astier Natural Hydraulic Lime [NHL 3.5] [NHL 5].
2. Aggregate: Natural or Manufactured Sharp Sand with at least 4 grades forming a substantial part of the sand and no more than 3% of particles smaller than grade #200 (0.075mm). No more than 34% retained in any single mesh.
3. [Fibers: ½ inch nominal length glass fibers meeting requirements of ASTM C1116.] [Fibers: animal hair]

C. Plaster Finish Materials

1. Binder: St. Astier Natural Hydraulic Lime [NHL 3.5] [NHL 2].
2. Color Pigment: ASTM C979 mineral oxide type, [____]color.

3. Water: Clean, fresh, potable and free of mineral or organic matter capable of affecting plaster.

D. Finish Aggregate.

1. Aggregate: Natural or Manufactured Sharp Sand with at least 4 grades forming a substantial part of the sand and no more than 3% of particles smaller than grade #200 (0.075mm). No more than 34% retained in any single mesh.

2.3 Mixes

A. Scratch Coat: [1 part [NHL 3.5] [NHL 5] and [2] [2.5] parts of sand, proportioned by volume.] Ready-Mix Ecomortar G-S]

[1. Fiber Reinforcement: add [fiber] [hair] to scratch coat]

B. Brown Coats: [1 part [NHL 3.5] [NHL 5] and [2] [2.5] [3] parts of sand, proportioned by volume.] [Ready-Mix: Ecomortar G-B]

C. Finish Coat: [1 part [NHL 3.5] [NHL 2] and [2.5] [3] parts of sand, proportioned by volume.] [Ready-Mix: Ecomortar [F-2] [F-3.5]]

D. Mix only as much plaster as can be used prior to initial set.

E. [Add color pigments to finish coat.]

F. Mix materials dry, to uniform color and consistency, before adding water.

G. Protect mixtures from freezing, frost, contamination, and excessive evaporation.

PART 3 – EXECUTION

3.1 Examination

A. Section 01300 – Administrative Requirements: Coordination and project conditions.

B. Mechanical and Electrical: Verify surfaces within walls have been tested and approved.

3.2 Preparation

A. Surfaces must be damp (not wet) to reduce excessive suction.

3.3 Installation

A. Control and Expansion Joints:

1. [Install interior control and expansion joints every twenty (20) feet or as indicated on Drawings.]
2. [Install exterior contraction joints after initial set, scribed as indicated on Drawings by cutting through 2/3 of lime plaster depth, neatly, in straight lines.]
3. [For horizontal exterior surfaces, install control and expansion joints not to exceed 100 square feet or as indicated on Drawings.]
4. [For vertical exterior surfaces, install control and expansion joints not to exceed 144 square feet or as indicated on Drawings.]

B. Plastering

1. Apply plaster in accordance with manufacturer's instructions.
2. Apply scratch coat to a nominal thickness of 3/8 inch, and brown coat to nominal thickness of 3/8 inch over metal lath surfaces.
3. Apply finish coat to a nominal thickness of [1/8] [3/8] [1/4] inch.
4. After curing, dampen previous coat prior to applying finish coat. ALLOW 7 to 10 DAYS BETWEEN COATS.
5. Apply finish coat [to indicated color and texture.] [to [light dash] [medium dash] [heavy dash] [fine sand float] [medium sand float] [heavy sand float] [combed] [glacier] [aggregate surfaced] [_____] texture with selected color..
6. Avoid excessive working of the surface. Delay troweling as long as possible to avoid drawing excess fines to surface.

3.4 Erection Tolerances

A. Section 01400 – Quality Requirements: Tolerances.

B. Maximum Variation from Flat Surface: 1/4 inch in 10 feet.

3.5 Adjusting

A. Section 01700 – Execution Requirements: Testing, adjusting, and balancing.

B. Remove damaged or defective plaster by cutting and replace with specified materials to match adjacent plaster.

3.6 Schedules

END OF SECTION