

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

ST. ASTIER NATURAL HYDRAULIC LIME PLASTER

PART 1 – GENERAL

1.1 Summary

- A. This Section includes St. Astier Natural Hydraulic Lime plaster system.
- B. Related Sections
 - 1. Section [_____ – _____]: Wall substrate surface.

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 C91 – Standard Specification for Masonry Cement.
 - 3. ASTM C109 – Test Method for Compressive Strength of Hydraulic Cement Mortars.
 - 4. ASTM C141 / C141M – Standard Specification for Hydrated Hydraulic Lime for Structural Purposes.
 - 5. ASTM C144 – Standard Specification - Aggregate for Masonry Mortar.
 - 6. ASTM C926 – Standard Specification for Application of Portland Cement-Based Plaster.
 - 7. ASTM C979 – Standard Specification for Pigments for Integrally Colored Concrete.
- B. Portland Cement Association
 - 1. PCA – Portland Cement Plaster (Stucco) Manual.
- C. 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

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.

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

or its authorized distributors.
- B. Installer: Company specializing in performing plaster/stucco work with a minimum of three (5) 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.]

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).
3. [Pre-Mix : EcoMortar G-S.]
4. [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. [Pre-Mix : EcoMortar F.]
3. Color Pigment: ASTM C979 mineral oxide type, [_____]color.
4. Water: Clean, fresh, potable and free of mineral or organic matter capable of affecting plaster.

D. Finish Aggregate.

5. 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).

2.3 Mixes

- A. Scratch Coat: 1 part [NHL 5] [NHL 3.5] and [1.5] [2] [3] parts of sand, proportioned by volume.

[1. Fiber Reinforcement: add [fiber] [hair] to scratch coat]
- B. Brown Coats: [1 part [NHL 5] [NHL 3.5] and [2] [2.5] [3] parts of sand, proportioned by volume.] [Ready-Mix: EcoMortar G-S]
- C. Finish Coat: [1 part [NHL 2] [NHL 3.5] and [2.5] [3] parts of sand, proportioned by volume.] [Ready-Mix: Ecomortar F]
- 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. Strawbale : Surface to be sound enough to receive plaster coat.
- C. Mechanical and Electrical: Verify surfaces within walls have been tested and approved.

3.2 Preparation

- A. Mist surfaces to reduce excessive suction.
- B. Prior to the scratch coat being applied, any excessive depression or hollow requiring dubbing out should be carried out using 1 to 1.5 minimum (NHL 3.5 to sand) mixed with straw.

3.3 Installation

A. [Installation of Accessories:]

1. [Install accessories in accordance with ASTM C1063.]
2. [Place corner bead at external wall corners.]
3. [Place casing beads at terminations of plaster finish. Butt and align ends. Secure rigidly in place.]
4. [Install door and glazed frames plumb and level in opening. Secure rigidly in place.]

B. [Control and Expansion Joints:]

1. [Install interior control and expansion joints.]
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 as indicated on Drawings.]
4. [For vertical exterior surfaces, install control and expansion joints as indicated on Drawings.]

C. Plastering

1. Apply plaster in accordance with manufacturer's instructions.
2. Apply scratch coat to a nominal thickness of 3/4 inch in two passes, and brown coat to nominal thickness of [1/2] [3/4 in two passes] inch over strawbale surfaces.
3. Apply finish coat to a nominal thickness of [1/8] [3/16] [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.

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