

Overview

This guide provides specific information for use of the Earthhaus BUILD Plaster System over light straw clay construction. The Earthhaus BUILD Plaster System over straw clay construction is standardized; however, the materials are versatile and the system may be modified based on the needs of a unique project. The BUILD Pozzolanic Hydraulic Lime (PHL) Plaster System supports the unique requirements of light straw clay construction with the following high performing properties.



- Specialized plaster formulas made with high plasticity lime and pumice pozzolan for excellent workability, adhesion, and durability.
- A breathable plaster system that allows the straw clay to release moisture which reduces the risk of mold and structural issues.
- A slow and steady plaster curing process which allows for flexibility during early structural movement and reduces the probability of cracking.

EXTERIOR SYSTEM	PRODUCT	THICKNESS	COVERAGE
Scratch Coat	PHL Binder	1 coat: ⅜"	65 ft²
Brown Coat	PHL Binder	1 coat: ⅜"	75 ft²
Exterior Finish <i>option 1</i>	Lime Stucco Coarse	1 coat: ¼"	50 ft²
Exterior Finish <i>option 2</i>	Lime Stucco Fine	1 coat: ⅛"	100 ft²
Finish Color	Mineral Pigment: Bulk or Pigment Packs	–	–
Sealer <i>optional</i>	Breathable Sealer	–	TBD



Sand Aggregate

PHL Binder requires the addition of local sand aggregate which functions to improve structural integrity, increases plaster volume, and helps reduce shrinkage during drying (how to source and select local sand is provided in the PHL Binder Installation Guide).

Scratch Coat: one bag of PHL Binder + three 5-gallon buckets of sand aggregate

Brown Coat: one bag of PHL Binder + five 5-gallon buckets of sand aggregate

INTERIOR SYSTEM	PRODUCT	THICKNESS	COVERAGE
Scratch Coat	PHL Binder	1 coat: ¼"	100 ft²
Brown Coat	PHL Binder	1 coat: ⅜"	75 ft²
Interior Finish <i>option 1</i>	Sand Finish	1 coat: ⅛"	100 ft²
Interior Finish <i>option 2</i>	Stone Finish	1 coat: ⅙"	250 ft²
Finish Color	Mineral Pigment: Bulk or Pigment Packs	–	–
Sealer <i>optional</i>	Olive Oil Soap Sealer	–	700 ft²

Light Straw Clay Substrate Preparation

Preparation is key to successful BUILD Plaster application on light straw clay walls. Light straw clay construction is a complex and detailed process and every project will have unique considerations and techniques for preparing the straw clay for plaster application. Consider the following when preparing for PHL Binder application:

1. Inspect the Walls

It is important to thoroughly inspect the straw clay surfaces for defects, such as cracks, holes, or uneven areas that might affect the adhesion or appearance of the plaster. Additionally, the surface should be free from dust, or any substances that could impair the bond between the light straw clay substrate and the PHL plaster.

2. Fully Dried Light Straw Clay

Ensure the light straw clay wall is completely dry before plaster is applied. The presence of excess moisture in the wall can lead to issues with plaster adhesion, curing and may contribute to mold growth within the walls.

3. Dampen Walls Prior to Plaster Application

Light straw clay is porous and can rapidly absorb the water from the PHL plaster which can lead to poor adhesion and potentially weaken the plaster. To prevent absorption from occurring, pre-dampen the light straw clay immediately before plastering with a fine mist of water, leaving the surface moist without creating any visible standing water or runoff. The goal is to achieve straw clay walls that are damp enough to reduce their absorbency in order to allow the PHL plaster to adhere properly and cure slowly.

4. Plaster Stops and Lath

Ensure that adequate plaster stops are used where plaster terminates or meets other materials. Dissimilar materials like wood should be protected with felt paper and covered with expanded metal lath to prevent cracking.

5. Protect Surrounding Areas

Ensure that windows, doors, and any other elements that should not be plastered are adequately covered and protected.

PHL Binder Installation Over Light Straw Clay

The following is a brief PHL Binder installation overview. See the [PHL Binder Installation Guide](#) for comprehensive guidelines.

Tools & Equipment

The PHL Binder scratch and brown coat can be applied either by hand using a hawk and trowel or by spray application using a plaster sprayer. A plaster sprayer is the preferred method for scratch coat application as it tends to embed the plaster deeper into the straw clay substrate. When using a hawk and trowel, take care to “massage” the plaster into the straw clay to ensure adequate adhesion.

Scratch Coat Installation

The function of the scratch coat is to create a mechanical bond to the straw clay and give texture (tooth) for the adhesion of the brown coat. The standard scratch coat thickness is $\frac{3}{8}$ ". When the scratch coat has been applied and is still wet, a plaster scarifier tool is used to horizontally scratch the plaster $\frac{1}{4}$ " deep to maximize bonding with the brown coat. When the scratch coat is complete, the straw clay should be completely covered with no straw clay substrate showing through. The scratch coat should cure for 10 days before applying the brown coat.

Brown Coat Installation

The function of the brown coat is to apply the plaster to its final shape, and if needed build and even out the wall. The standard brown coat thickness is $\frac{1}{2}$ ". The brown coat is finished based on your choice of Finish Coat:

- **Exterior Finish**

Sponge float the brown coat if applying Lime Stucco Coarse Finish. Sponge float and smooth the brown coat if applying Lime Stucco Fine Finish.

- **Interior Finish**

Sponge float and smooth the brown coat for Sand and Stone Finishes.

Allow 10 days for the brown coat to cure before applying a Finish Plaster. For comprehensive finish plaster guidelines, see the [Lime Stucco Installation Guide](#) and [Interior Finishes Installation Guide](#).

Calculating Quantities & Pricing

Materials quantities are calculated through our website calculators and pricing is shown in the results. Quantities are based on standard coverages and thicknesses; plaster coverages may vary based on application of thicker or thinner coats and on the condition of the substrate.

[PHL Binder Calculator](#)

[Lime Stucco | Fine Finish Calculator](#)

[Lime Stucco | Coarse Finish Calculator](#)

[Sand Finish Calculator](#)

[Stone Finish Calculator](#)

Consultation

For general construction questions, please refer to your state and local building codes. For general product questions, email build@earthausplaster.com. Technical Consultation for BUILD is available within the scope of Earthaus Plaster products and processes and can be scheduled through our website: [Schedule a Technical Consultation Call](#).