



Lancaster Lime Works
NATURAL LIME FOR PRESERVATION AND BUILDING

H-1 Binder

TECHNICAL DATA SHEET

Product Name: H-1 Binder

Manufacturer:

Lancaster Lime Works
1251 Beaver Valley Pike
Willow Street, PA 17584
717.207.7014
www.lancasterlimeworks.com

Product Description:

Lancaster Lime Works H-1 Binder All Purpose Hemp Binder consists of a non-hydraulic, high PH, high calcium, high surface area fully carbonating lime and other natural ingredients. It has no portland cement, natural cement, gypsum, latex, gum binders, casein, sand or any other type of modern chemical binders added. It is VOC free.

Designed as a binder when mixed with hemp hurd in the making of hemp blocks and hemp shuttering infill. The H-1 Binder is used as the binder for stucco and plaster coats when mixed with the correct sand. Limewash is made from the H-1 Binder when mixed with clean water. The high PH of the lime will prevent mold, mildew, and biological growth while the hemp is drying. It is resistant from fire and insect damage.

For plaster the H-1 Binder should be mixed with concrete sand at a ratio of 325 lbs of concrete sand to 50 lbs of H-1 Binder and clean water. Install the plaster as per instructions for the Lancaster Lime Works Lime Putty Plaster which can be found on our website.

When mixed with hemp hurd it provides a self-healing, permeable and insulative result. Hemp blocks and hemp infill have a R value of approx 2.4 per inch depending on the density of the installation. They also provide the benefits of thermal mass.

Hempcrete is not recommended for use in consistently wet/damp locations or below grade. When properly covered with lime plaster and limewash made from this same binder from Lancaster Lime Works it will perform perfectly in normal weather conditions. Normal moisture/humidity/moisture conditions are beneficial to its longevity.



Lancaster Lime Works

NATURAL LIME FOR PRESERVATION AND BUILDING

Basic Use:

Mixing:

Although mixing with a hoe in a large tub will work, a top loading vertical shaft mixer is the easiest and most thorough mixer to use.

Combine one bag of H-1 Binder with 33 lbs of loose high quality hemp shiv in the mixer then immediately add 10-11 gallons of water. Mix thoroughly for 8-10 minutes.

Depending on temperatures and humidity the binder/hemp mix may dry and more water should be added as needed to achieve a mix that will hold together in a baseball shape when squeezed together.

Generally, the framing is installed at 24" on center for a 2/6 wall. However, as the framing members get larger the spacing between the framing can also increase. The width of the shuttering material is up to the installer. However, we suggest waiting 24 hours before gently sliding off the shuttering and moving up the wall to the next location.

Install the damp hempcrete in approx 6" layers and compact down to approx 4" thick before adding the next layer

General Application Guidelines:

Working time: After mixing with water and protected from direct sun, the expected working time is 10-15 hours depending on temperature and humidity.

Yield: Mixing 50 lbs of H-1 Binder with 33 lbs of hemp will yield approx 4.5 cubic feet of hempcrete.

After the hempcrete has set and adequately dried to a moisture content of 15-20% or less it must be covered with two layers of either Lancaster Lime Works Lime Putty Plaster or plaster made from H-1 Binder and then three layers of Limewash (Limewash is a must on the exterior). Care must be taken to ensure all flashing details are properly installed to ensure all precipitation related moisture can drip freely from the surface of the finished plastered surface. As with all lime products H-1 Binder must be protected from running water.

Safety/Health:

Caustic! Always wear eye and skin protection when handling. Wear appropriate safety gear and minimize contact with exposed skin. For protection from accidental ingestion or inhalation, wear a dust mask. Always keep white vinegar on site to neutralize lime upon contact with skin.