

# HERITAGE PURE LIME PUTTY

## *Product Data Sheet*

### Product Highlights

Slaked lime putty is a traditional material used up until the introduction of portland cement. It is lime paste produced from fresh quicklime and water. The slaking process, which requires the addition of 2 or 3 molecules of water for each molecule of lime, yields calcium paste or lime putty, an aqueous gel of thin crystals of calcium hydroxide. Before cement was invented, slaked lime putty was commonly used binder in mortar and plaster formulations. It was also a main ingredient of historic lime paints. Today it is used in historic masonry restoration work.

Portland cement wasn't widely available in the United States until the early 1870s. More rigid and less permeable than lime, portland cement can cause extensive damage to historic masonry buildings that were originally constructed with lime mortars. Slaked lime putty is recommended for masonry buildings constructed before 1872, and it is often specified when a historic building (pre-1930) is being repointed in the absence of a mortar analysis.

### Recommended Uses

This product is recommended as a binder for lime mortars and plasters.

### Mixing Instructions

Typical lime mortar should be mixed using 1 part slaked lime and two and a half or three parts damp sand (by volume). Plasters and frescos may contain more lime in the mix especially when use as a finish coats. No addition of water is recommended for pointing mortars. Stucco or mortar for laying bricks may require addition of water.

### Application Procedures

The mortar should resemble the consistency of brown sugar for repointing work. (More water can be added for bricklaying.) This drier consistency enables the material to be tightly packed into the joint, allows for cleaner work, and prevents shrinkage cracks as the mortar cures. Joints should be pointed in layers or "lifts" where the joints are deeper than one and one quarter inch (1 ¼"). Apply in layers not greater than one half (1/2) the depth until a uniform depth is formed. Compact each layer thoroughly and allow it to become thumbprint hard before applying the next layer.

The joints should be finished to match the original historic point profile. Remove all excess mortar from face of brick before it dries.

### Curing Procedures

Lime mortar sets by carbonation rather than by hydration, and it requires more time to set than portland cement-based mortar. During carbonation, the mortar hardens as the lime putty slowly converts back to limestone by absorbing carbon dioxide from the atmosphere. It is necessary to initiate the carbonation process by misting the material with water after the tooling of the joint profile has been completed. Nine (9) complete wet-and-dry cycles are required, usually within the first three days after application.

The speed at which the carbonation process initially starts depends on the conditions. Carbon dioxide is sequestered in the mortar as the moisture evaporates from the surface of the joint. Air temperature, wall surface temperature, direct sunlight, air circulation, application width and depth, and the tooling style will dictate the frequency of misting and the length of time required to complete the nine wet and dry cycles.

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Water misting is still necessary in wetter climates, but the amount of water used will vary as will the timing between water misting applications.

The mortar must make contact with the atmosphere in order to cure properly. Acceptable curing methods include sheltering the repointed wall with plastic sheeting, periodic hand misting, and regular mist spraying using a system of pipes, mist heads, and timers. Adjust curing methods to ensure that the pointing mortar is damp without eroding the surface of the mortar. Curing methods will vary in different parts of the country and at different times of the year, calling for different amounts of water to be used in the wet-and-dry cycles. Adjustments also have to take into account how much time is remaining before freezing weather arrives. This mortar should not be exposed to temperatures above 85 degrees F or below 40 degrees during the curing cycle. The full carbonation cycle can take up to 28 days, and longer depending on the weather conditions. This mortar should not be installed when there is a danger of freezing temperatures unless it is enclosed and protected from temperatures below 40 degrees F.

It is important to note that keeping the wall in a damp condition for 72 hours, which is a common instruction in specifications for cement-based mortar, provides no benefit at all and will slow the carbonation process.

### **Clean-Up**

After the replacement mortar has fully hardened, thoroughly clean the exposed masonry surfaces of excess mortar and foreign matter. Use wood scrapers, stiff-nylon or fiber brushes and clean water that is spray-applied at garden-hose pressure. When repointing work precedes the cleaning of

existing masonry, allow the mortar to harden to the point that cleaning can be accomplished without eroding the surface of the mortar. This can be carried out as early as three days after repointing is finished and as long as one month later depending on the curing conditions. When possible, it is better to clean existing masonry before repointing. Do not use metal scrapers or brushes. Do not use acidic or alkaline cleaners.

### **Safety Requirements**

**CAUTION!** Avoid contact with eyes and skin. Prolonged contact with skin may cause irritation. Wash skin thoroughly with water after handling. In case of eye contact, flush with plenty of water for at least 15 minutes. If irritation persists, consult a physician immediately. Gloves and eye protection is recommended when handling or opening this package. **KEEP OUT OF REACH OF CHILDREN.**

### **Limitations**

Not suitable for mortars used within: -Marine environment or other damp conditions where a fast set-time is required; -Fireboxes in fireplaces; -Landscaping retaining walls; -Architectural curbing; -Swimming pools -Paving;

### **Storage**

Keep away from extreme heat and direct sunlight in buckets for long periods of time. Keep from freezing.

### **Shelf Life**

Save any unused material and return it to the original shipping bucket. Pour one inch of water on the top of the material and cover with plastic sheet or burlap and reseal the bucket. This material can be kept indefinitely if every three



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months the material is inspected and remixed adding water as needed.

### **Limited Warranty**

U.S. Heritage Group, Inc. warrants this product to be of merchantable quality when used or applied in accordance with the manufacturer's instructions. This product is not warranted as suitable for any purpose or use other than the general purpose for which it is intended. Liability under this warranty is LIMITED to the replacement of the product (as purchased) found to be defective, or at the shipping companies' option, to refund the purchase price. In the event of a claim under this warranty, notice must be given in writing to U.S. Heritage Group, Inc., 3516 North Kostner Ave., Chicago, IL 60641. THIS LIMITED WARRANTY IS ISSUED AND ACCEPTED IN LIEU OF ALL OTHER EXPRESSED WARRANTIES AND EXPRESSLY EXCLUDES LIABILITY FOR CONSEQUENTIAL DAMAGES.

