

## HERITAGE PREBLENDED STRAIGHT LIME PUTTY MORTAR (TYPE L)

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### Product Highlights

Our Heritage Preblended Straight Lime Putty Mortar is the traditional mix of lime putty and sand. This mortar is flexible, which protects the masonry units during freeze-thaw cycles, and unlike more rigid portland cement-based mortar it wicks water out of the wall and protects friable masonry units from water damage. This process also helps prevent the walls from holding excessive moisture, which can lead to mold and water damage.

Although portland cement is a major ingredient in today's mortars, it 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. This product 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 for repointing and laying brick and stone in historic structures. It can be applied as a poultice to draw the salts out of the masonry unit as a treatment for efflorescence. It may take several applications over several seasons to fully extract all the salt from the masonry walls, but this process effectively and gently removes potentially damaging salt deposits.

### Mixing Instructions:

Remove material from 3.5 gallon pail to either a five gallon bucket or wheelbarrow and mix by hand using a mortar hoe, paddle drill or shovel for 5 minutes. Mechanical mixers can be used (3 minutes maximum) if they are the vertical shaft type. Standard mortar paddle mixers are not recommended due to the excessive amounts of water needed to mix the ingredients properly.

### Surface Preparation:

When used in a controlled way, angle grinders with diamond-impregnated metal blades — with a maximum 1/8-inch-thickness and 4-inch diameter — can be very helpful in removing old mortar. It is when angle grinders are used to “clean out the entire joint,” often in two passes and edging the top and bottom sides of the masonry units, that irreversible damage can and often does occur.

The center cut method is a combination of grinding-tool and hand-chiseling techniques used to remove existing mortar from a wall without damaging the masonry units. This technique allows the use of grinding tools to remove existing mortar joints if the width of the existing bed joint is at least 3/8 inch. This method was developed to protect existing masonry units and joint profiles by eliminating contact between cutting blades and masonry units. The center cut method is for horizontal joints only. Center cutting of the vertical head joints should not be done.

Once the center is cut from the joint, the top and bottom of the mortar between the masonry units can be easily removed by carefully using a five-in-one, a chisel and hammer, or pneumatic carving tools. Strictly adhere to a written quality-control program to prevent damage due to worker fatigue. The quality-control program should include provisions for demonstrating the ability of operators to use tools without damaging masonry, supervising performance, and preventing damage due to worker fatigue. It is a common misconception that removing existing mortar by hand necessarily causes less damage to masonry units than does using angle grinders. The use of five-in-ones, tile scrapers, and chisels and hammers can also cause irreversible damage.

To rake out the existing lime mortar, soak the joint with water to soften the mortar before removal. Rake out or scrape the mortar by hand with a five-in-one or a chisel and hammer. Lime mortar removal does not usually require the use of angle grinders or other power tools. Rake out joints to a minimum depth of 2.5 times the width of the existing mortar joint but not less than that required to reach sound existing mortar.

### Examples:

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1/16" Mortar joint needs to be cut out to a depth of 3/16" minimum  
1/8" Mortar joint needs to be cut out to a depth of 5/16" minimum  
1/4" Mortar joint needs to be cut out to a depth of 5/8" minimum  
3/8" Mortar joint needs to be cut out to a depth of 15/16" minimum  
1/2" Mortar joint needs to be cut out to a depth of 1-1/4" minimum  
3/4" Mortar joint needs to be cut out to a depth of 1-7/8" minimum  
1" Mortar joint needs to be cut out to a depth of 2-1/2" minimum

Remove existing mortar from masonry surfaces within the raked-out joints to provide reveals with square backs and to expose masonry for contact with the repointing mortar. Brush, vacuum, or flush the joints with water to remove dirt and loose mortar. Do not spall or chip masonry units in the process of mortar removal. For the long-term performance and appearance of the replacement mortar, do not feather the edge of the existing mortar. Feather edging occurs when a joint has not been raked out deeply enough. To promote bonding between the existing and the replacement mortars, the meeting point should be clean-cut at a 90-degree angle.

Do not widen the existing masonry joints by cutting into the surrounding edges of the masonry units when removing the existing mortar.

## Application Procedures

This mortar is delivered wet and ready to use. No additional ingredients are needed. The product can settle during shipment due to vibrations, so simply remix it in the same pail or transfer it to a wheelbarrow or five-gallon bucket for remixing.

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 1/4"). 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 joint 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. 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

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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! Contains non-hydraulic lime putty and silica sand. May be irritating to eyes and nose. Prolonged inhalation may cause delayed lung injury, including silicosis and possible cancer. Avoid contact with eyes and skin. 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. Dust mask, gloves and eye protection is recommended when handling or opening this package. KEEP OUT OF REACH OF CHILDREN.

## Limitations:

Not suitable for:

- 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 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 manufacture'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.