PRODUCT DATA SHEET

U.S. HERITAGE GROUP, INC.
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HERITAGE PREBLENDED LIME PUTTY MORTAR - (TYPE O)

Product Highlights

This heritage mortar consists of lime putty and sand with an enclosed pouch of dry portland cement. Once the pre-proportioned cement pouch is added, the mortar achieves a Type O formula of 1:2:9; which refers to one part portland cement; two parts lime; and nine parts sand. This mortar is relatively flexible and permeable compared to modern cement-based mortars, and it is more resistant to extreme temperatures and moisture than our Heritage Preblended Pure Lime Putty Mortar (Type L). This formulation is specifically designed for buildings constructed between 1872 and 1931, when mortar was softer than today's mortar blends but often higher in strength than the traditional pure lime mortars.

This mortar complies with ASTM C270-07 Standard Specification for Mortar for Unit Masonry, Proportion Specification.

Recommended Uses

This mortar is recommended for structures constructed between 1872 and 1930. This is the most popular mortar specified when the presence of natural or portland cement in the original formulation is confirmed through mortar testing.

This formulation is also a good choice for historic structures in marine environments, areas exposed to high moisture and extreme conditions, and for work carried out near the end of the construction season when colder temperature may be a concern. This mortar cures more quickly and achieves lasting durability more rapidly than pure lime mortars.

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.

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Examples:
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.

Application Procedures

After the portland cement pouch is mixed thoroughly into the lime putty sand material you have up to 2 hours to complete your work before the mortar becomes difficult to work with. The texture of the mortar should resemble that of brown sugar.

Tempering with water is permitted during use.

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 joint profile.

Remove all excess mortar from face of brick before it dries.

Curing Procedures:

Acceptable curing methods include covering the repointed wall with plastic sheeting, periodic hand misting, and periodic 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.

Because this formulation contains portland cement as an ingredient the wet/dry cyles required for pure lime mortars is not required for optimum performance.

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, portland cement, 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:

This material will not adhere properly when skimmed across the surface of cracks.

The use of Muratic acid in field-mixed solutions or brand-name cleaners can discolor the mortar and cause premature failure.

This mortar formulation, Type O (one part portland cement, two parts hydrated lime and nine parts sand) when tested from field applications according to ASTM C780 reflect compressive strength properties of Type N mortar (one part portland cement, one part hydrated lime and six parts sand - 750 psi in 28-days) when blended according to the Proportion Specification of ASTM C270. If compressive strength properties of Type O are desired (350 psi in 28-days) than specifying a Type K mortar formulation by proportion (i.e., one part portland cement, three parts hydrated lime and twelve parts sand) should be considered.

Sands used in this product do not meet ASTM C144-04 Standard Specification for Aggregates for Masonry Mortar.

Storage:

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

Shelf Life:

If you have opened the bucket but do not plan to use the material immediately, 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. Once the portland cement pouch has been added the product has approximately two hours of working time.

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.