

HERITAGE HIGH LIME HYDRATE MORTAR

TYPE O

Product Data Sheet

Description and Use

Heritage High Lime Hydrate Mortar – Type O is an engineered factory-blended pointing (tuckpointing) and bedding mortar, designed to match the performance characteristics of transition period lime-cement mortar mixes, that facilitates safe repairs of bedding mortar for solid load-bearing masonry buildings originally constructed with portland cement. This product may be used for pointing but Lime Putty Mortar Type O or Hydraulic Lime Mortar should be used for maximum durability when pointing in areas subject to freeze-thaw cycles or in masonry elements subjected to extreme exposure.

This single component product is pre-blended and ready to use, only water is needed. Formulated only from high-calcium Type S hydrated lime, white portland cement, engineered aggregate blends, and mineral pigments (upon request), Heritage High Lime Hydrate Mortar – Type O contains no pozzollans, polymers, or admixes of any kind. High Lime Hydrate Type O is a soft, permeable and flexible high lime hydrated Type O mortar formulation, providing better protection than Type N or typical Type O blends of masonry units from damage caused by building movement, thermal expansion/contraction, freeze-thaw cycles and salt migration (efflorescence).

Heritage High Lime Hydrate Mortar – Type O should be installed when mortar analysis and/or date of construction indicates early (pre-1932) portland cement blends were used. Characteristics of high lime Type O lime-cement blends based on Type S hydrated lime include high water retention, high plasticity, high permeability along with fast set, good early compressive strength and good early freeze-thaw resistance, USHG high lime hydrate mortars contain negligible amounts of soluble salts. This minimizes the risk of sulfate damage and alkali silica reaction.

Repairs to solid load-bearing masonry walls should only be attempted using appropriate materials, tools and techniques and only by educated/trained installers. Many homeowners can successfully execute pointing and small repairs. Structural repair conditions should be evaluated by professionals. Installation guides and training/certification, offered by US Heritage Group, are strongly recommended for all installers.

Features and Benefits

- Authentic product formulation ensures compatibility with historic masonry units and mortar.
- Standard aggregate blends and color selection facilitates quick, convenient installation.
- Custom-matched aggregate profiles and colors produce unbelievable visual accuracy.
- USHG provides unmatched product and project support, for one pail or hundreds, to ensure excellent results for every installation.

Sales, Product and Project Support

US Heritage Group supports, sells and ships all products directly to ensure we consistently deliver the highest quality results possible. Contact USHG for a variety of support services:

- Specifier education
- Project-specific technical advice
- Specification guides and support
- Custom color and aggregate matching
- Installation guides and training

Product Standards (Conformance)

ASTM C144	Aggregate for Masonry Mortar
ASTM C150	Portland Cement
ASTM C207	Hydrated Lime for Masonry Purposes (Type S)
ASTM C270	Mortar for Unit Masonry
ASTM C1713	Mortars for the Repair of Historic Masonry
ASTM E2260	Guide for Repointing Historic Masonry
NPS Preservation Brief #2	Repointing Mortar Joints in Historic Masonry Buildings

Packaging and Coverage

3.5-gallon plastic pail (40lbs. material weight)	0.37 cubic feet of mixed material
80lbs. bag	0.74 cubic feet of mixed material

See USHG **Installer Guide to Products and Services** for unit coverage and cost estimations

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.

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Surface Preparation

Successful installation relies on proper surface preparation that involves careful evaluation, cleaning of masonry and mortar removal. Do not attempt to point walls with higher than 20% WME. Never install any mortar as a surface/skim coat. For additional surface preparation details see **Heritage Lime Mortar Installation Guide** then contact USHG with project-specific issues.

1. Clean masonry units as needed to remove soiling, efflorescence, coatings, etc.
2. Remove and repair or replace any unsound masonry units and bedding mortar.
3. Square-cut joints to min depth twice joint width.
4. Clean surfaces to remove all dust and debris.
5. Dampen masonry unit joints to surface-saturated dry condition
6. Protect installation area from rain, sun, high winds, extreme hot and cold temperatures before, during and after pointing.

Mixing Instructions

High Lime Hydrate Type O Mortar ships pre-blended. Mortar should be mixed with water just prior to use, by hand using a mortar hoe, or shovel. Mechanical mixing can be accomplished by paddle drill or vertical shaft mixer. Standard paddle (horizontal shaft) mixers are not recommended for drier pointing mix.

1. Add 1.75 gallons of water to dry mortar per 80lb bag of mortar to achieve pointing consistency.
2. Mix material 5 minutes by hand and drill or 3 minutes in vertical shaft mixer
2. Evaluate Mix Consistency and add water to adjust. Only add water if necessary after mixing in measured increments. Weeping or flowing mortar is too wet.
 - a. **For bedding/laying only:** add enough water to achieve spreadable consistency.
 - b. **For pointing:** add enough water, if required for mortar to stick to hawk and pointer.

Application

Mortar should be installed in layers or "lifts" where the joints are deeper than one quarter inch ($\frac{1}{4}$ "). Do not attempt to remove any freshly installed wet mortar.

1. When installing mortar in lifts divide overall depth evenly for each lift.
2. Compact each layer thoroughly and allow it to become thumbprint hard before applying the next layer.
3. Scrape film from top of each mortar lift when thumbprint hard prior to installing additional lifts
4. Overfill final lift $1/8$ " (min) past final finish depth.

Cleaning

This section applies only to removal of installed lime mortar residue. Masonry should be cleaned before repointing. Do not use metal scrapers or brushes.

1. **Immediately after installation of mortar during thumbprint hard and surface dry condition:** thoroughly clean the exposed masonry surfaces of excess mortar. Use dry wood scrapers,

stiff-nylon or fiber brushes. Do not use water to clean uncured mortar!

2. **During initial damp curing conditions:** Allow the mortar to time harden and test to check that cleaning can be accomplished without surface erosion or lime-run. Dampen with then use wood scrapers, stiff-nylon or fiber brushes.
3. **After initial curing period:** Use appropriate masonry cleaner, following manufacturer instructions.

Finishing

Joints must be finished immediately after installation as soon as initial "thumbprint hard" condition is reached.

1. Dampen joints prior to tooling.
2. Tool damp firm joints by scraping top of mortar from the joints using pointer end, wood handle or other stiff tool into desired profile, matching the original or surrounding joints.
3. Hit tooled joints with churn brush to consolidate mortar, expose aggregate and achieve natural weathered appearance.
4. Immediately dampen tooled joints to support curing process.

Curing

High Lime Hydrate Type O Mortar cures by hydration through reaction with water and by carbonation through reaction with carbon dioxide. Uninterrupted execution of the curing process, immediately after installation, is essential to achieve proper mortar performance. Protect mortar from driving rain, sun, high winds, and temperatures above 90 or below 40 degrees during initial curing period. Protect High Lime Hydrate Mortar Type O from freezing for **21 days** after installation.

1. Dampen fresh mortar using pump sprayer or garden hose on mist setting.
2. Repeat the misting procedure if the wall begins to dry out.
3. Keep mortar damp for the first 3 days after application.

Storage and Shelf life

Save any unused dry material and return it to the original shipping container. Protect from freezing, extreme heat, moisture and direct sunlight. This material can be kept in the original factory sealed containers for 6 months. Dispose of containers with any material that has hardened.