Maintain

Pozzolanic Hydraulic Lime 5.0 (PHL 5.0)

Packaging

- 50 lb paper bag
- 50 lb pail
- 2,500 lb super sack (with silo)

Yield

.54 cubic feet per 50 pounds of mortar when mixed with water.

Shelf Life

6 months in an unopened bag or 1 year in a sealed pail if stored in dry conditions.

Appearance

Natural color is bright white but is also available in 51 standard colors or can be custom blended with select sands and pigments for precise matches.

Pot Life

Up to 2-hours if kept out of direct sun and heat. Can be re-tempered with water one time to supplement evaporation and extend pot life.

Application at a Glance

Suitable for pointing mortar joints of all sizes and for all types of historic masonry (brick, terra cotta, limestone, granite, sandstone, concrete etc.).

Application Limitations

- PHL mortars must be installed in tempratures that are 35 degrees Farenheit and rising for the first 7 days following installation.
- Maximum recommended temperature for installation is 85 degrees.
- PHL mortars must be shaded with burlap during installation and the following 7 days if tempratures are greater than 85 degrees farenheit.
- Maintain a damp or humid environment for the first 7 days the mortar is curing.
- Do not apply with grout bags or grout guns.
- Do not add any admixtures, just water.
- Do not wash with strong acidic cleaners.

Product Description

Maintain Pozzolanic Hydraulic Lime 5.0 (PHL) is a carefully blended proprietary mixture of hydrated lime and pozzolans that is suitable for repointing all types of historic masonry located in moderate and extreme weather climates. Maintain PHL Limes contain no portland cement and is an ideal pointing mortar for all historic brickwork, stone, terracotta and concrete units.

Our PHL lime mortars comply with ASTM C1707 "Standard Specification for Pozzolanic Hydraulic Lime for Structural Purposes" as well as ASTM C110 "Standard Testing Methods for Physical Testing of Quicklime, Hydrated Lime and Limestone. All of our mortars have undergone extensive laboratory testing to ensure their quality and durability.

Product Highlights

- Improves frost durability of masonry and reduces spalling
- High lime content increases water retention and significantly reduces shrinkage.
- Excellent bond strength to all masonry units
- Rarely requires chemical washing after installation
- Customizable paste colors and sand blends
- Extremely long pot-life and can be re-tempered to reduce waste
- Moderate compressive strength
- High in flexural strength
- High in vapor permeability
- Wicks moisture and salts out of masonry
- Reduces stress on masonry units caused by thermal movement
- Absorbs carbon dioxide during the mortar's life, reducing its carbon footprint

Properties	Results	Requirement
7-day compressive strength	610 psi	n/a
14-day compressive strength	700 psi	n/a
28-day compressive strength	790 psi	350 psi min
6-month compressive strength	910 psi	n/a
1-year compressive strength	900 psi	n/a
Time of initial set	10 hrs	24 hrs max
Time of final set	30 hrs	48 hrs max
Vapor Transmission	19.77 perms	Type "O" Mortar 12.19 perms
Air content	3.57%	7.0% max
Water retention	82%	80% min
Water soluble alkali	0.071 %	0.2% max
SO_3	0.007 %	3.0% max
CO_2 (as produced basis)	2.4	16.0% max
Fineness retained on 30 mesh sieve	0.0%	0.5% max
Fineness retained on 200 mesh sieve	1.6%	15% max
Autoclave Expansion	0.08%	7.0% max

The above test data is derived from laboratory controlled samples produced with lime and mason sand (no pigment). Technical data may vary slightly depending on different curing methods, aggregates and pigments that are added.

Pozzolan Hydraulic Lime Application Guide

Wall Preparation

1. Carefully grind or chisel out mortar joints to a depth of at least 2 times the width of the joint or until sound original mortar is located. The minimum depth of thin joints is ¾".
2. Remove all mortar fins left by the grinder from the top and bottom masonry units so pointing mortar obtains a direct bond to all units.
3. Remove all dust and debris from joints by vaccum.
4. Perform the above steps without damaging the masonry units or building.
5. Lime mortar is an extremely dry mix so walls must be thoroughly pre-wet to prevent drying out of the fresh mortar which can lead to pre-mature failure and/or a shift in color. Pre-wet the wall with copious amounts of water. Consider setting a lawn sprinkler directly onto the masonry for an hour. Simply misting the wall with a hand sprayer or Hudson sprayer is NOT sufficient.
6. Protect the walls from high winds, direct sunlight and/or heat by tenting the area with dampened burlap attached at the wall on the top and draped over the scaffold.

Mixing

1. Mortar can be mixed by hand or in a modern cement mixer. Mix the mortar for 5 minutes, allow to rest for three minutes and re-mix for another three minutes. Use a timer to ensiure proper mixing duration.
2. Add water slowly as the mixer is running to help control the amount added.
3. Add just enough water to make the mortar workable. The final consistency of a good pointing mortar should be that of brown sugar and for a bedding mortar, it should be slightly wetter .
4. To test for proper pointing mortar consistency, grab a handful of mixed mortar and form it into a ball. Toss the ball into the air and let it land in your palm several times. The ball of mortar should just barely hold together without breaking apart but it should not leave very much (if any) residue on your skin. For bedding mortar, do the same but squeeze the mortar ball in your palm. If the mortar just starts to ooze between your fingers you have a good consistency for laying masonry.

Installation

1. Compact mortar into joints using back fillers. Never use grout bags or pointing guns which require too wet of a mix and, thuis segregate the paste from the aggregate.
2. Fill deepest voids first so that all joints are of the same depth. Allow this mortar to set for 12 to 24-hours before final pointing occurs.
3. Fill the rest of the joints in one lift. Apply mortar using a medium pressure to control mortar consolidation and permeability.
4. Historic mortar joints were rarely struck in a concave pattern so have fun with the joint profile you choose to strike your mortar with.
5. If using mortar in extremely sunny and/or hot climates, drape the scaffold with dampened burlap to shade the masonry and the craftsmen during installation.

Curing

1. Protect newly pointed walls with continuously dampened burlap that is raised 1-2 inches away from the wall for a period of at least 3-7 days immediately following installation. If you cannot drape burlap then gently mist the wall frequently to keep the wall damp during the curing period.
2. Lime mortar achieves its initial strength from curing but most of its strength is derived from carbonating (absorbing CO2) over its lifespan. Humidity and frequent misting drives carbon dioxide into the fresh lime mortar which is critical for both short term and long term strength gain and durability.

Washing & Sealing

1. If the lime mortar has been mixed to the proper consistency, there should be few mortar smears and therefore it should not be necessary to wash your masonry. To remove mortar smears, simply scrub contaminated areas with a green Scotch-Brite scouring pad and warm water within a week of installation.
2. If it is absolutely necessary to clean your work with a chemical, use Prosoco's SureKlean Vanatrol at its weakest dilution ratio. Follow the product data sheet for proper use of this chemical.
3. You may use only a Soloxane based masonry water repellant from a trusted manufacturer to apply to masonry laid or pointed with PHL limes. Cold walls like parapets or chimneys are typically good locations to apply a masonry water repellant for added weather protection. NEVER USE A FILM FORMING SEALER OVER ANY MASONRY as this entraps moisture within the wall.

About CenturyWerks LLC

We believe in the proper restoration of timeless architecture through enduring craftsmanship with a refined approach to restoration. Derived from over 135 years of masonry materials experience, CenturyWerks, LLC manufactures a full line of premium masonry, concrete and plaster repair products under three lines:

- Conserve: For patching & sculpting historic masonry
- Maintain: For repointing historic or specialty masonry
- Repair: For restoring historic or unique concrete

For more information on CenturyWerks, our unique services, product lineup and demonstration videos, visit centurywerks.com.

CenturyWerks LLC | 3210 N. Troy St. | Chicago IL 60618 | Tel: (773) 389-3324