deGruchy's LIMEWORKS.us™

Phone: 215-536-6706
Fax: 215-453-1310

3145 State Road, Telford, PA 18969

www.LimeWorks.us

Makers of ecologic® Brand
Mortar & Plaster
For Historic Restoration
and Green Building

Repointing with ecologic® Lime Mortar

Product Mixing & Installation Guide

Why should I repoint a masonry building?
Depending on the buildings age and the amount of attentive care given to it over the course of its history the repointing of mortar joints may be necessary. Proper care of masonry walls includes upkeep of deteriorated mortar joints. Without such upkeep water infiltration problems may arise, creating the possibility of devastating problems, aesthetic qualities of a building may suffer, and historical context may be lost forever.

Should my building even be completely repointed?
Lime*Works*.us recommends doing as little intervention as possible in regard to the pointing mortar if in fact the large majority is still intact. A homeowner should replace only what is missing wholly, or eroded back more the 3/8", with fresh mortar, which will match very closely to the original mortar in composition, color, texture, and tooling. We call that process "Patch Pointing" and it is cost conservative as well as functionally superior option over pointing the whole building in an incorrect manner. The total repointing of a building is often unwarranted. Small shrinkage cracks evident in old lime mortar is not a reason to execute complete repointing. These shrinkage cracks may have been there from installation and lime mortar work can have minor fissures unlike Portland cement-based mortar.

What kind of material should I use?
Today there are a variety of mortars a homeowner can easily purchase and use to repair their buildings. Nearly all of those "off-the-shelf" mortars are based on Portland cement (OPC). OPC is a hard, brittle, and impermeable material that can aid in accelerating deterioration rather than protect many vintage masonry buildings originally built with lime as the primary binder. Cement-based, and lime-based mortars are not equal and should not be treated as such. Lime mortar "breathes", by processing moisture within a wall back out to the atmosphere rather than trapping water in the wall like a Portland Cement mortar is known to do, when the remaining backup mortar is lime-based. When water is trapped in a masonry wall it can freeze and expand, thus resulting in pushing masonry units out of position and even cracking the units. This makes a relatively small problem of what were only deteriorated mortar joints into a possibly larger maintenance issue, costing multiple times more than the misguided and improper repair carried out.

About Ecologic™ Mortar
Ecologic™ Mortars are simply a prepared blend of Natural Hydraulic Lime, properly graded sand, and pigments to which you just add water, mix, and go to work. NO Portland Cement is present or required in Ecologic™ Mortar to make them work. Ecologic™ Mortar comes in 12 stock colors and 4 sample blends, each of which can be used on their own as a repointing mortar or blended together to create a custom colored mortar. Use the Lime*Works*.us Color-Matching System called the "Mortar Kit" to begin to identify which of the 12 stock Ecologic™ Mortar colors, or 4 sample blends might be used to begin to formulate the base starting point when simulating the mortar to be used for repointing your older building.

Starter Tools for Repointing

Ecologic™ Mortar	Mortar Kit	5 Gallon Pail	Stucco Trowel

Margin Trowel	3/8" Slicker	Rubber Gloves	Silica Dust Mask

Regional Inclusions	Safety Goggles	Churn Brush

Starter Tools for Repointing

Drill Mixer	Brush	

Starter "Take-away" Repointing Kit

1 – Bag Ecologic™ Mortar   1 – 5 Gallon Pail
1 – Stucco Trowel   1 – 3/8" Slicker
1 – Margin Trowel   1 – Safety Glasses
2 – Pair Rubber Gloves   1 – Churn Brush
2 – Silica Dust Mask   1 – Container of Inclusions for
1 – Mortar Kit   Regional Modification

Available at Shows & Demonstration Workshops

Repointing with Ecologic™ Lime Mortar in Small Batches

Step 1

Make sure mortar joints are appropriately cleaned out to receive fresh Ecologic™ Lime Mortar.
Please refer to our playlist Like A This for tips on appropriate joint preparation methods.

Step 2

Soak masonry with water until thoroughly saturated and let sit until there is no standing water. Wetting allows the new mortar to cure slowly rather than drying out. This step is **critical** to a successful repointing project.

Step 3

Begin by putting on goggles,
rubber gloves, and a dust mask!
Add ½ of the appropriate amount of
water to a 5-gallon pail.
Approximately 3 ½ cups (US) of water are
required to a gallon of dry Ecologic™ "G"
(coarse sanded) Lime Mortar by volume.

For a compact mix that is installed using a
trowel and slicker. Add 4 ½ cups (US) of water
to a gallon of "F" (fine sanded) mortar for a
compact mix for pointing.

In all cases you can slightly adjust water
content based on your applications and the
workability properties you desire.

Step 4

Add 1-gallon of dry
Ecologic™ Lime Mortar
into the 5-gallon pail that
now contains half of the
required mixing water.

Step 5

Using a pumping motion blend Mortar with
the drill mixer for approximately 2 – 3
minutes. (Collomix drill mixer w/paddle is
recommended)

Remove the mixer placed in the off position.
Scrape the side of the bucket with the margin
trowel to ensure all dry material is
incorporated into the mix

Step 6

Set the driller mixer aside in the off position. Transfer the mortar to a 2nd 5-gallon bucket while adding the remaining amount of required mixing water.

Step 7

Mix mortar for another 2 – 3 minutes. For repointing the mortar should be dry enough to form a ball. (For repointing deep stone joints the mortar can be loose to grout in the deeper joints.)

When squeezed in the hand. Mortar should not be crumbly or soupy!

Step 8

Using a Margin Trowel apply thoroughly mixed repointing mortar onto your Hawk or Stucco Trowel. Using a slicker slide the mortar into the bed joint with enough force to bond the new mortar to the old
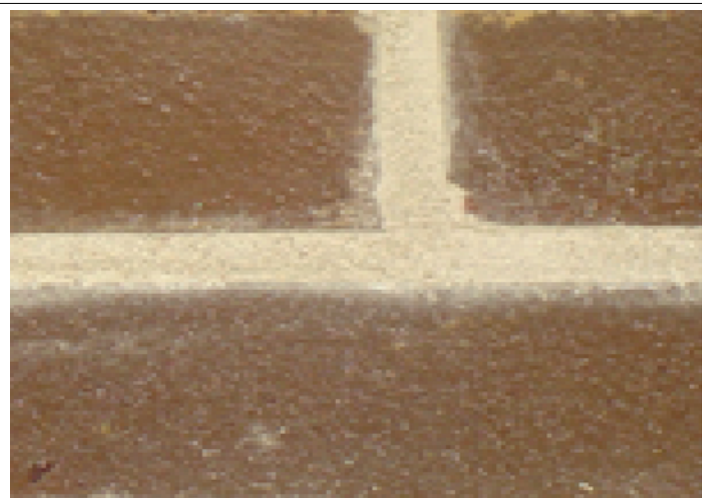
Step 9

Once the bed joint is thoroughly packed with repointing mortar and slightly overfilled, apply mortar to the head joint, also packing thoroughly and slightly overfilling with the slicker.

Step 10

Using the slicker cut off excess mortar. Next firmly press against the joint with the slicker to reveal a slight edge of the surrounding brick.

Step 11

After the new mortar is thumbprint hard, lightly brush across the mortar joints with a horsehair brush to remove loose particles. To antique the joint tap the very stiff mortar joints directly with a churn brush.

DO NOT SWIPE SMEAR WET JOINTS!

Glossary of Terms

Repointing   The process of replacing deteriorated or weathered mortar between masonry units.

Bed Joint   The horizontal mortar joint that masonry units lay on.

Head Joint   The vertical mortar joint between two masonry units.

Collar Joint   The cavity behind masonry units between the wythes of a masonry wall

Mortar   A plastic workable material traditionally made of lime and sand used to lay up masonry units

Wythe   Each successive layer of vertically laid masonry units.

Portland Cement   An artificial binder made of limestone and clay burnt at very high temperatures. Possesses hydraulic (water-setting) properties. Is known to be hard, brittle, impermeable, and reaches its initial set in about 2 hours.

Non-Hydraulic Lime   A natural binder made of limestone burnt at low temperatures. Does not have any hydraulic properties. It is an "air" lime that sets with air by drawing in carbon dioxide from the atmosphere over a 6 week period in a process called carbonation. (This is also known as "Lime Putty" and is a traditionally weak material).

Natural Hydraulic Lime (NHL)   A natural binder made of limestone with natural chemical impurities that allow it to have hydraulic setting properties, but remains highly vapor permeable, malleable, and able to act as a catalyst to process water out of a masonry wall.

Masonry Unit   Stone, clay, bricks, terra cotta, or cemenitious block used in the construction of a masonry wall.

For Questions:
Email techsupport@Lime*Works*.us OR
Call 215.536.6706 for help, for professional on-site consultation, training, and workshops, or to discuss the details of your application

For a Custom Prepared Mortar Simulation:
Go to www.Lime*Works*.us then from the drop-down menu follow the following options:
Services → Mortar Analysis/Sending a Sample

Mail via regular USPS:
Lime*Works*.us, 3145 State Road, Telford, PA 18969

To order:
Call 215.536.6706
Fax 215.453.1310
Email Order@Lime*Works*.us

Helpful Tips

- Do all your prep work before you start repointing.
- Start from the top of the wall and work your way down.
- Use the appropriate sized slicker for the job. The appropriate size slicker should be a 1/16' smaller than the joint.
- Make up enough mortar to use within 1 hour of pointing work.
- Cover your work from the sun, strong wind & rain using dampened burlap to encourage a slow cure.
- Slow cure lime mortar work by lightly misting the protected work with dampened burlap twice a day for three days.

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