

deGruchy's

LIME  WORKSTM.us

Makers of

ecologicTM
Mortar

Materials for Professional Masonry
Restoration and Sustainable Building
Systems

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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 maybe necessary. Proper care of masonry walls includes upkeep of deteriorated mortar joints just to name one example. Without such upkeep water infiltration problems may arise, creating the possibility of devastating structural problems, aesthetic qualities of a building may suffer, and historical context maybe lost forever.

Should my building even be completely repointed?

LimeWorks.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 than 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 a 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

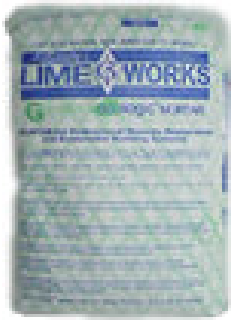
What kind of material should I use?

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, (a hard, brittle and impermeable material that can aid in accelerating deterioration rather than protect many vintage masonry buildings built with lime based mortar. If your building was built before 1940 it may have been exclusively 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 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 will reach over 750 psi without additives and still maintain a high liquid and vapor permeability, which allows mortar joints to breathe and allows moisture to escape. Ecologic Mortar comes in 9 stock colors each of which can be used on their own as a repointing mortar or blended together to create a custom colored mortar. Use the LimeWorks.US Color-Matching System "Mortar kit" to begin to identify which of the 9 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



Rubber Gloves



Jointer



Silica Dust Mask



Regional Inclusions



Safety goggles



Churn Brush

Add-On-Tools



Drill mixer



Brush



Leaf/Square Slicker

Starter “Take-away” Repointing kit

- 1-Bag Ecologic Mortar
- 1-Stucco Trowel
- 1-Margin Trowel
- 2-Pair Rubber gloves
- 2-Silica Dust Mask
- 1- Mortar Kit

- 1-5 Gallon Pail
- 1-3/8”Jointer
- 1-Safety Glasses
- 1-Churn Brush
- 1-Container of Inclusions
for 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 www.LimeWorks.US for tips on appropriate joint preparation methods.



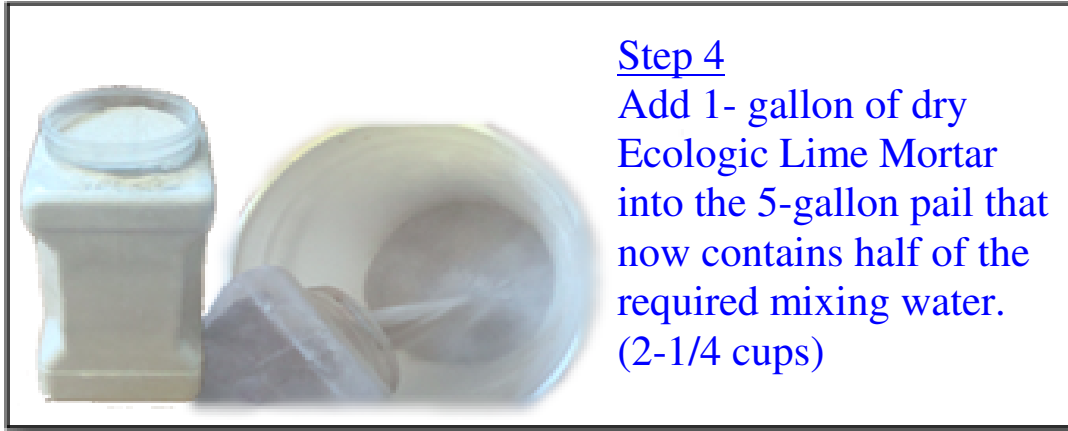
Step 2

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 dry out. This step is critical to a successful repointing project



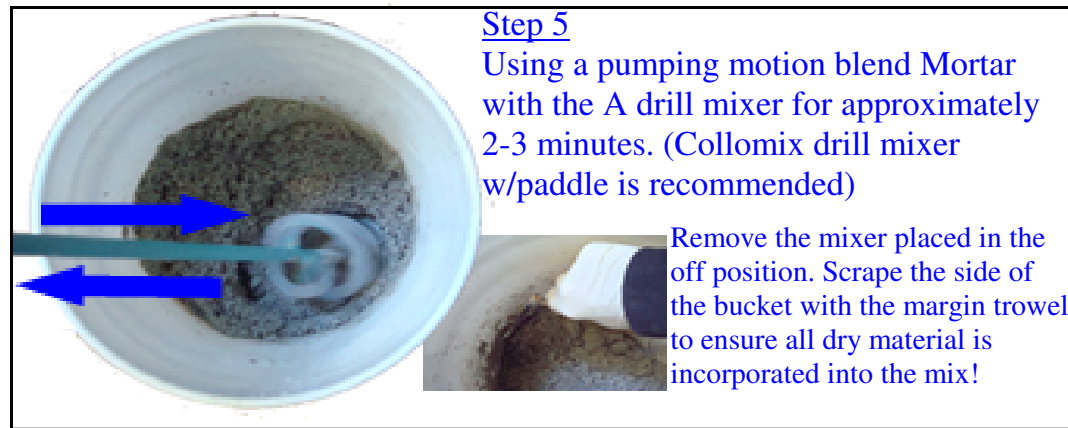
Step 3

Begin by putting on goggles, rubber gloves, and dust mask!
Add $\frac{1}{2}$ of the appropriate amount of water to a 5-gallon pail. Approximately $4\frac{1}{2}$ cups of water are required to a gallon of dry Ecologic Lime mortar by volume.



Step 4

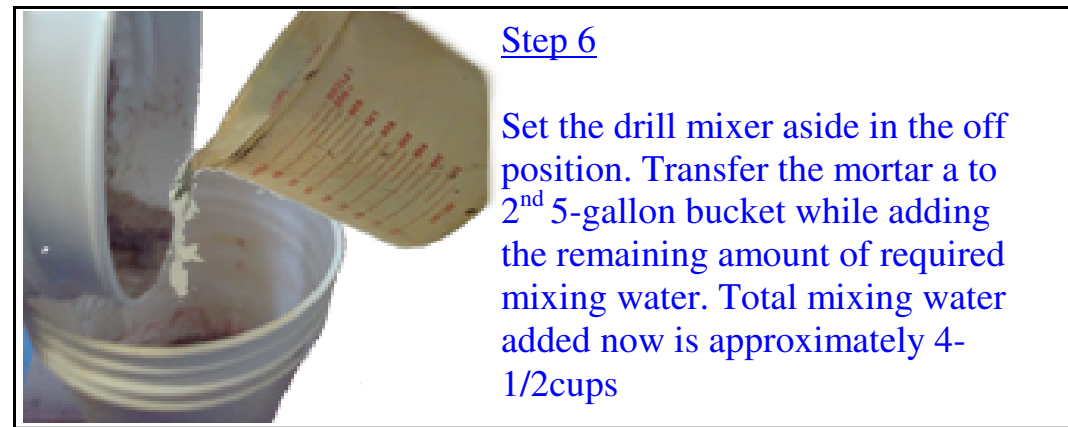
Add 1- gallon of dry Ecologic Lime Mortar into the 5-gallon pail that now contains half of the required mixing water. (2-1/4 cups)



Step 5

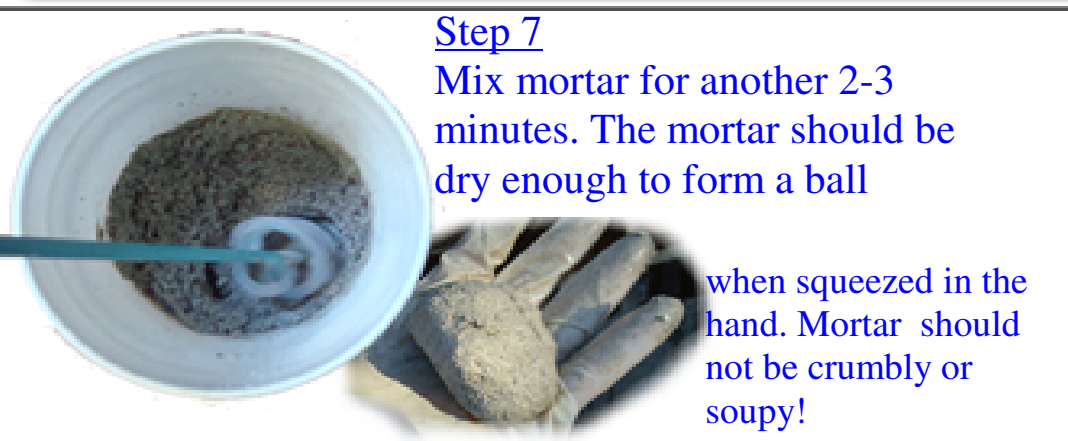
Using a pumping motion blend Mortar with the A drill mixer for approximately 2-3 minutes. (Collomix drill mixer w/paddle is recommended)

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 drill mixer aside in the off position. Transfer the mortar a to 2nd 5-gallon bucket while adding the remaining amount of required mixing water. Total mixing water added now is approximately 4-1/2 cups



Step 7

Mix mortar for another 2-3 minutes. The mortar should be dry enough to form a ball

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 jointer slide the mortar into the bed joint with enough force to bond the new mortar to the old.



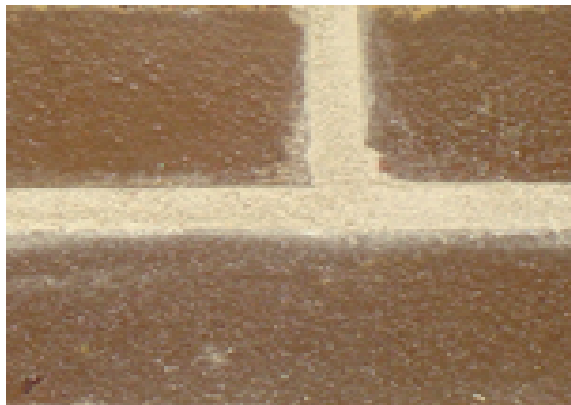
Step 9

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



Step 10

Using the jointer cut off excess mortar. Next firmly press against the joint with the jointer 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 JOINT!**

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 AKA 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. Reaches its initial set in about 6 hours.

Masonry unit - stone, clay bricks, terra cotta or cementitious block used in the construction of a masonry wall.

For Questions:

E-Mail gogreen@LimeWorks.US **OR**

Call 215.536.6706 for help, for professional onsite consultation, training, and workshops or to discuss the details of your application

For a Custom Prepared Mortar Simulation:

Go to www.LimeWorks.US and at left menu fill out our form found at “Send us a sample”

Mail via regular USPS:

LimeWorks.US, PO Box 151, Milford Square, PA 18935

To order:

Call 215.536.6706

Fax 215.536.2281

Email Order@LimeWorks.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 jointer for the job. The appropriate size jointer 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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