

## Preparation for Repointing Brick or Stone

Posted At : June 29, 2010 5:05 PM | Posted By : Admin

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### How to Remove Mortar Before Repointing

The biggest challenge in restoring masonry walls and buildings is replacing Portland-cement-based mortars with a natural lime mortar. The difference between the two is easy to determine. Using a pointing chisel to remove lime mortar is quite easy; the mortar is soft and breaks easily in front of the chisel. Portland-based mortars are quite hard, and hand-chiseling takes many blows from the hammer to remove just a couple inches of joint.

This hard mortar is very damaging for brick and soft stone. One reason they are so damaging is that Portland-based mortars (Type N, Type S, and most mortars available today) are not water permeable, so they do not allow moisture to escape from the wall. Also, Portland-based mortar is not flexible, but brittle, so the masonry units are stressed by freezing temperatures and imperceptible building movements. This can take the faces of brick right off of buildings that should be preserved and protected. Natural lime mortar will wick moisture away, and flex with the small movements of temperature changes and settling that occurs in every building over time.

To remove Portland-based mortars efficiently, a grinder should be used to cut a groove in the center of the joint. Usually a thin blade works better than a thick one, and a 4" blade will cut through the Portland-based pointing back to the original lime-based mortar. Cutting the center of the mortar joints prevents slips from damaging the original brick or stone. Special care should be taken on head (vertical) joints to cut only as deep as the grinder can without cutting into the masonry units. This can take strength and focused attention because the grinder is harder to control when removing very hard material. Center-cutting the joints relieves the pressure that the hard mortar puts on the faces of brick and stone.

The second step is to hand chisel the joints out. Usually the best method is to place a flat chisel right where the mortar meets the edge of the brick or stone, aiming toward the center groove that was cut with the grinder. A pointing chisel can also be used to go across. Pick a 2" or 3" section of joint and aim the pointing chisel toward the area that has already been removed. The chisels will break the bond between the Portland-based mortar and the brick or stone.

Usually the repointed joints are less than an inch deep, so removal is safe as long as care is taken with the faces of the masonry units. Remove mortar at least 2x the height of the joint. A 3/8"-wide joint should be chiseled back to at least 3/4". This will ensure an adequate bond between the new mortar and the brick or stone.

Once the mortar is removed, the joints should be vacuumed, or blown out with compressed air. A low pressure jet of water, such as from a nozzle on a garden hose, can also be used. If the joints are vacuumed or blown out, it is a good idea to dampen the wall before applying the new mortar.

Never use a pressure washer on soft brick or stone. High-pressure water can damage walls of even hard stone (like granite), so the nozzle should be kept well back from the face of the stone. Pressure washers often remove the beauty of the weathered faces of

stone, including the green moss that can make a building look old.