

04060 Mortar

- .1 Sand to be round edged sand such as river sand. Observe the color mixes found in the original mortar sand and select pointing mortar sand accordingly. Sand should meet ASTM C144 standard as to gradation and purity. Butterjoints 1/16" to 1/4" use fine sand. Standard joints 3/8" lime with medium sand. Stone rubble joints 3/8" to 1" lime with coarse sand\*
- .2 Lime to be hydrated lime. White Portland cement may be substituted for up to 20% of the lime in the mortar mix to improve workability. Lime should conform to ASTM C207. Cement, if used, should conform to ASTM C150 with not more than .60 percent alkali to avoid staining and efflorescence. Masonry prior to 1872 used no Portland cement. Masonry erected 1912 to 1931 used small amount of Portland cement.
- .3 Water to be clean and free of salt and acids.
- .4 Mixing proportions for lime and sand to be no more than one part lime to two parts sand and no less than one part lime to three parts sand.  
**NOTE:** Chimney mortar may vary from the above to improve weathering. White Portland cement may be substituted for up to 33% of the lime in the mortar mix to improve mortar weatherability.
- .5 A pointing test panel shall be prepared on the \_\_\_\_\_ wall of the building for approval before general work begins.
- .6 Mortar should be used within thirty minutes of final mixing. Retempering is not allowed.
- .7 No mortar additives are allowed.

04900 Masonry restoration

1. Old mortar shall be removed to at least a depth two and a half times the joint height. Disintegrated mortar beyond that depth should also be removed.
2. Carbide blade saws and impact hammers may not be used. A grinder may be used where joints are uniform, but care must be taken not to damage bricks or soft stone.

3. Joints should be rinsed with water before filling. At the time of filling, joints should be damp, but without standing water. \*\*
- .4 Mortar should be added to joints in quarter inch increments, allowing each layer to reach thumbprint hardness before the next layer is applied.
- .5 The joints are to be tooled after the last mortar layer is thumbprint hard to match the historic tooling.
- .6 Remove excess mortar with a bristle brush.
- .7 Additional cleaning to be done with water only.
- .8 Bid shall detail information as to approximate square footage of areas to be pointed. Attached eight by ten inch photographs may be copied to detail the contemplated work.

\* One place to find coarse sand is in those tubes hardware stores sell for weight in the back of winter pick-up trucks. You also might find it at a garden or landscape center. In wide joints, you need coarse or even pebbly sand mixes.

\*\* Basement stone is often damp and you do not need to rinse, but use a sprayer to mist. If the stone is dry, it sucks in water too fast and you want a slow bond to take place.