Pepper Construction

Quality Technical Bulletin

Tuckpointing: Taking Care of the Past

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Suggested Mortar Types for Different Exposures
(*Always consult the Architect regarding mortar*)

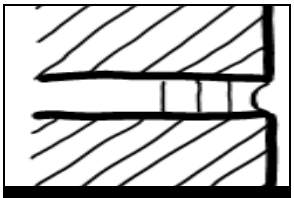
For Granite & Hard Brick
Sheltered Exposure: O
Moderate Exposure: N
Severe Exposure: S

For Limestone & Molded Brick
Sheltered Exposure: K
Moderate Exposure: O
Severe Exposure: N

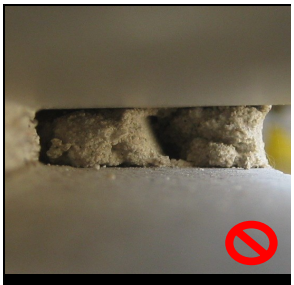
For Hand Made Brick
Sheltered Exposure: L
Moderate Exposure: K
Severe Exposure: O

Type O or less should not be used in a frequent freeze -thaw exposure.

(the mortar should NOT be stronger than the brick)

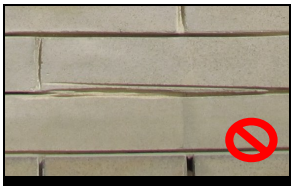


Three 1/4" lifts



Only 2 lifts (and should have been 3) and not fully packed

Half moon prior to chipping



The brick will need to be replaced

Tuckpointing is the process of removing defective mortar and installing fresh, new mortar. Tuckpointing masonry improves weather resistance, reduces water penetration, maintains structural and visual integrity, and prolongs the life of the wall. Every project differs in some way; the type of masonry, the bonding and coursing, the mortar joint size and shape, and the type of mortar that was and is to be used in the wall. Each characteristic of the wall must be taken into account prior to starting the job, and this includes the selecting the type of equipment that we use on the wall. In the end, success depends on you, the tuckpointer, as your experience and knowledge about craft is as important as the correct specifications. Patience and craftsmanship will produce a successful project that would all be proud.

Corey Zussman, AIA, NCARB - Director of Quality Management

Weather Conditions:

- Tuckpointing should be done between 40°-95° and should follow the BIA's Requirements for Masonry Construction in Hot and Cold Weather (attached to your Tuckpointing Checklist).
- Tuckpointing should be ideally accomplished in the shade, especially in hot weather in order to avoid prematurely drying out the mortar, which will limit any shrinkage cracking.

Preparing the Joint for New Mortar:

Although some damage may be inevitable, careful joint preparation can help limit damage to masonry units:

- Review the existing for size, remove only 2 to 2½ times the width of the joint...a 3/8" joint should be 3/4" deep...an 1/8" joint should be 1/4"-3/8" deep. This depth will generally prevent the new mortar from coming out for the joint.
- Remove any loose or degraded mortar beyond the requirement above and notify the Architect. Do not place new mortar in an empty joint or against loose mortar.
- Back-point the openings by the end of the day to prevent water coming into the building.
- Review the masonry...Masonry units that are fully de-bonded should be re-set in lieu of just pointing.
- Review the joint thickness and evaluate your tool needs. Choose a tool that will maximize your production AND cause no damage to the masonry.
- It is recommended that extra care be taken when the joints are 1/8" or less. Consider NOT using power tools for these joints or using them on a limited basis...consider a tool such as a caulk cutter.
- If the masonry is weak and could shift if vibrated, consider hand tools.
- Have an understanding of your masonry...is it hard or soft?
- Avoid over cutting the head joints…make sure that you are able to see the blade at all times.
- Watch your position and body ergonomics...this is critical in making a smooth straight cut into the bed joint.
- Be careful when removing power tools from the joint, as damage to the masonry will happen when we loose focus.
- **Always get your Director of Quality involved if you have any questions or concerns.**
- **Choose a mortar that is not harder than the brick and not too soft of the weather exposure.**

Prior to Pointing:

- Review head joints for "half-moons". These must be chipped out to the depth of the joint prior to any pointing.
- Clean top & Bottom of joint to brick, without cutting into to the masonry.
- Rinse joints with water to flush out the mortar dust.
- Wet joints during the pointing process, but not have any standing water in the joint...this will improve the cure & bond strength.
- Re-tempering the mortar (adding water) could occur once during a two hour time frame.
- Never re-temper colored mortar, as this will likely change the color.
- When mixing the pointing mortar, it is preferable to mix the dry ingredients, add about ½ the water and let stand for about 1 hour (pre-hydration) then, add the remaining water and mix—this will reduce the chance of shrinkage.
- Do not use the mortar after 2½ hours after final mixing.
- DO NOT BLOCK ANY WEEPS.

Pointing:

- Make sure your striking tool not warn down and is the correct size for the joint.
- Do not use the edge of the tool to strike the joint, use the body to create an even appearance.
- If the joint is deeper than the required depth of 2 to 2½ times the joint width, pre-fill the joint to bring it to that level prior to pointing.
- Mortar shrinkage happens during the curing process, as the mortar gets hard...reducing the amount of mortar at this stage will significantly reduce shrinkage.
- Start filling the joint in ¼" lifts, allowing the lift to become "thumb print hard" before adding another ¼" lift. Always point with a minimum 2 lifts, depending on the joint depth.
- Once the final layer is installed, tool the joint after the mortar is thumb print hard, per Standards or to match the existing joints…
- Tooling the joint when the mortar is too soft will produce a light color.
- Tooling the joint when the mortar is too hard will produce a dark color.
- Wet wall at the end of the day in warmer temperatures.
- Allow mortar to cure for 3-7 days prior to cleaning.

The mortar joint is the wall's weakest link, and must be pointed back correctly in order to create a longer life for the wall. Shortcuts and poor craftsmanship result in a job that looks bad and performs substandard, and will require future re-pointing sooner.

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