



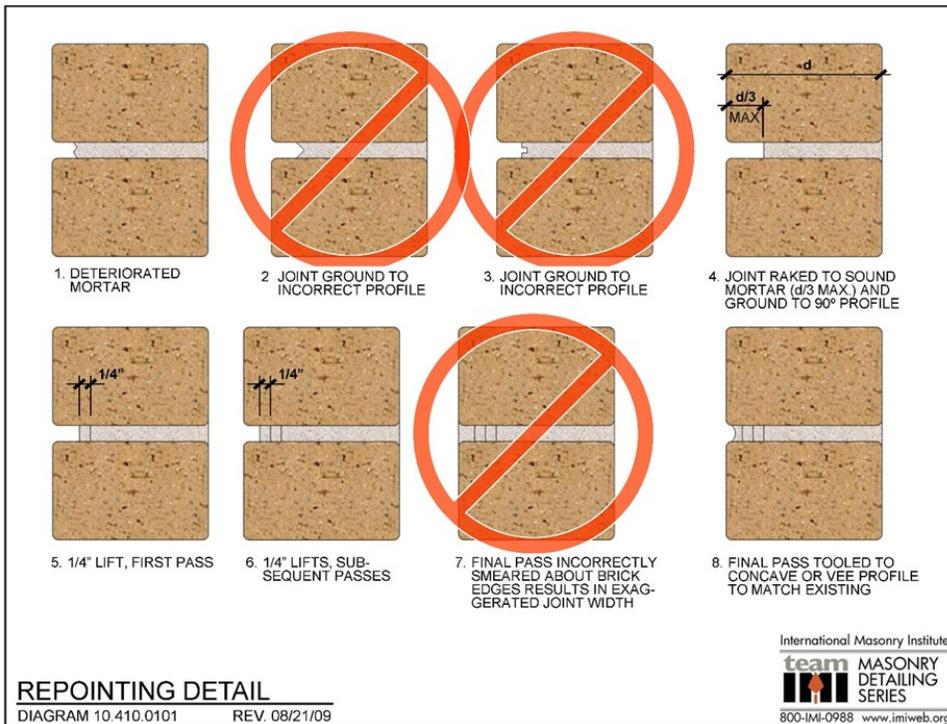
Gary Porter, Engineering & Technical Services for the Masonry Advisory Council is called upon with questions about construction concerns and for masonry advice from a variety of Architects, Engineers, Contractors, Developers and Distributor sources. He is dedicated to ongoing education of masonry and shares helpful tips from his professional experience that may be beneficial to you.

June 2019

Repointing Masonry

After the winter we have experienced in Chicago this year, with extremes in cold and many freeze thaw cycles, there are numerous buildings in need of pointing, tuckpointing or repointing. Technically pointing refers to placing mortar into a properly prepared joint and repointing the process of removing defective mortar and then replacing with new mortar. Tuckpointing and repointing are defined by ASTM E 2260 as being the same thing, but the term “repointing “ is the term used technically referring to removal and replacing of mortar joints.

The reason for repointing is that mortar lasts roughly between 25-50 years while brick lasts approximately 100+ years. Over a buildings life, foundations settle, caulking becomes dry and brittle, mortar joints crack or deteriorate and water finds it's way into the masonry and beyond. So we occasionally need to repoint the existing masonry, which will greatly add to the appearance of the building and reduce water penetration so additional deterioration can be minimized.



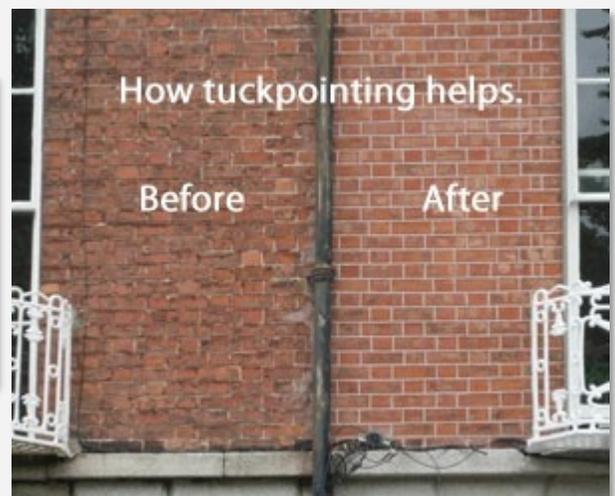
It is critical to have a masonry expert evaluate a structure to determine if repointing is necessary. Repointing is required if mortar has eroded more than 1/4", mortar is crumbling, there are hairline cracks in the mortar, mortar has voids and if brick are cracked along with mortar joints. Power washing a building with low to moderate pressure reveals where these areas are and for an expert to identify what needs to be done.

Repointing Masonry (cont.)

To avoid damage to the brick, the repointed mortar needs to be weaker than the brick. Typically type N, O or K mortar will be used. If the mortar is stronger than the brick, we see the faces of the brick spalling off due to the mortar joint being stronger than the brick. In repointing the color of the sand and the different types of cement manufactured influence the color of the finished product. It would be advised that a sample of the new mortar be installed in the wall, in a discrete location, to check for a good match with the existing.

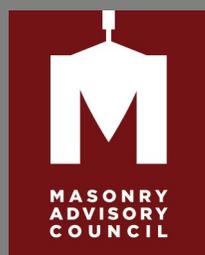
If a structure in question of repointing is a historical structure, or if a more thorough analysis of mortar strength is needed, it is possible to chemically analyze the old mortar by petrographic or chemical analysis. There is an ASTM specification, ASTM C 1324, Standard Test Method for Examination and Analysis of Hardened Masonry Mortar that pertains to this. In this process the exact amounts of cement, lime and sand are determined in the existing mortar. This can determine the exact strength of the existing mortar so the new mortar can be prepared of the same or slightly weaker strength. This is not always performed on a building as it adds substantially to the cost of the repointing project.

If repointing is required, there is a chart above that explains the depth of mortar needed to be removed. This process typically is cutting the joint with a grinder equipped with a diamond blade. The joints need to be cleaned by brush or air pressure as necessary, then pre-hydrated with water, repointed and tooled. Brick Industry Association Technical Note 7F and another standard, ASTM E 2260, Standard Guide for Repointing Historic Masonry, that should be followed which is a guideline for this process.



Expert Answers

Masonryadvisorycouncil.org/askmac



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