

WASHING OF MASONRY WALLS

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Preparing a good sample panel prior to building your wall will give a good idea of what the wall and colors will look like. To ensure consistency throughout the project, the same practices used on the sample panel should be used on the wall. If you plan to clean the wall upon completion, it is recommended to first clean the sample panel. This will give an accurate resemblance of what the wall will look like. Be sure to construct and clean the sample panel before starting the construction of the actual wall. Wait until the mortar joints of the sample panel or finished wall are cured so the cleaning procedure doesn't damage them. The following information has been compiled from various sources to offer guidance on washing of masonry walls.

(Portland Cement Association, 1995): Cleaning or washing procedures frequently alter the appearance of a mortar joint, specifically changing the texture and color. These cleaning practices are intended to remove mortar spills or smudges from the surface of the newly constructed masonry wall. Conversely, some of these techniques and solutions used dissolve the cement paste from the surface of the mortar joint and the colored appearance is no longer visible in the hardened cement paste. The appearance reflects sand particles, which are now exposed on the surface of the mortar joint. The result of improper cleaning is most apparent on colored mortar joints because the pigmented cement paste is needed to create the desired color. Improper cleaning of mortar joints can also affect the walls ability to resist water penetration



(Portland Cement Association, 2003): Since cleaning is often the last operation performed on a newly constructed masonry wall, appropriate planning and careful attention are neglected. Some pitfalls to avoid are: using the wrong cleaning procedure for the specific materials being cleaned, cleaning too much to compensate for improper workmanship during construction or the wrong execution of recommended cleaning practices. Before cleaning the masonry wall it is essential to plan, prepare, and apply proper cleaning practices to avoid damaging the masonry wall. Less cleaning is always better and often saves time and money. Minor smears and efflorescence related to masonry construction will most likely weather away as time goes on. Damage from over cleaning or improper cleaning

can be irreversible, so it is absolutely essential to clean or hire a company that will clean the masonry wall the correct way. Recommended cleaning procedures can often be found at the local or national associations. If using a cleaning solution, follow the manufacturer's directions.

(www.troweltrades.com-brick cleaning techniques, cleaning new brick): Masonry can be cleaned much more easily if certain steps are taken during construction to keep the job as neat as possible. Craft workers should make sure the mortar they use is of the proper consistency; if it is too wet, it will tend to smear the masonry units. If the mortar isn't thumbprint hard before it is jointed, brushed and retooled, the wall will be smeared and messy and it will require a great deal of effort to clean. That extra effort could lighten or bleach the color of the mortar joints on one part of the building to the degree that those joints will stand out from the joints on another part of the building.

Brick or tile walls should be covered at the end of each work day to prevent excessive moisture from entering the cavity. Eventually, that moisture may leach out towards the exterior; drawing soluble salts to the face of the brick. This could result in efflorescence; deposits of white powder or crust on the surface of the masonry.

Experienced mason contractors that selecting the proper cleaning solution and the proper cleaning method is very important to the outcome of the finished product. The small amounts of different minerals found in many masonry units, especially brick, will react with some cleaning solutions in a negative manor and cause stains and blemishes that may actually ruin the appearance of the entire structure. Mortars that contain iron oxides as coloring agents cannot be cleaned with just "any" cleaner. Manufacturers of brick, mortar coloring agents, and cleaning products make specific recommendations for the cleaning of masonry structures. Follow these recommendations closely.

It's good practice to build a test panel prior to cleaning the structure's actual walls. The proper dilution of the appropriate cleaning solution can be applied to the test panel to see what happens. If the wrong products or dilutions have been used, they'll bleach the mortar or etch the joints or both. Some minerals in brick may react with cleaning solutions and the result will show up as stains on the units or on the mortar. It's also a good idea to build that test panel as soon as the job is started, so that cleaning solutions can be applied to it well before the actual job is finished. If the test panel cleans up properly with the methods and chemicals being used, chances are good the walls will also clean up properly.

Timing is critical. Manufacturers of cleaning solutions recommend waiting at least seven days before applying their products. Many contractors are forced to start the cleaning process within two days of completing the actual

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(National Concrete Masonry Association: TEK 8-4A, 2005):

Choosing a mortar color close to that of the concrete masonry unit makes cleaning the wall of mortar smears easier, as the mortar tends to blend in. Mortar color should be chosen to match the unit color when smooth or ground faced units are used, as they can be difficult to clean without altering the appearance. Walls with contrasting mortar and masonry unit colors may require more aggressive cleaning to remove visible mortar. The cleaning agent and procedure should be carefully planned, based on the type of contaminant and desired results. The cleaning method chosen should be the least aggressive that will effectively clean the wall.

Before cleaning, ensure that mortar joints are cured, so the cleaning does not damage them. Cleaning methods may alter the appearance of the finished masonry; typically, at least some cement paste is removed from the surface of the units. When this happens, more aggregate is exposed to view, which can alter the color. In general, the more aggressive the cleaning method, the more paste is removed and the greater the potential for altering the wall's appearance. For example, sandblasting can be expected to alter the appearance to a greater degree than cleaning by hand with detergent and water. Note also that the same cleaning method may have different results based on the specific procedures used. Sandblasting at a lighter pressure will produce different results from sandblasting at a higher pressure. Again, the mildest cleaning method that will satisfy should be chosen.

The cleaning agent and procedures should first be used on a sample panel or inconspicuous location to assess: their effectiveness for the type of contaminant being removed; their effect, if any, on the finished masonry appearance; as well as the agreed upon level of cleanliness. After cleaning, the sample panel should be viewed from a distance of 20 ft under diffused lighting to evaluate the results.

Whichever cleaning method is chosen, it is important that all of the masonry be cleaned in the exact same manner (including dilution rate, brushing/scraping method, dwell time, reapplication, rinse procedure, etc.) to maintain a uniform appearance. Similarly, care should be taken to avoid overlap of areas being cleaned, as this may lead also to a non-uniform appearance.

Care must be exercised when using abrasive cleaning techniques since overzealous applications can cause drastic changes to the appearance, durability and water tightness of the masonry.

