CLEANING GUIDE
FOR
LAWRENCEVILLE BRICK PRODUCTS

Often a great amount of time is spent in the selection of brick and mortar for a house or commercial building and in the selection of a good mason to produce a beautifully finished wall. Unfortunately, the cleaning of brick masonry is often a process that is done without much thought or planning. This can sometimes result in damage to the wall, which cannot be repaired.

The information provided herein is based primarily on data provided by the Brick Institute of America in their Technical Notes on Brick Construction #20 Revised II, published in November of 1990, with special emphasis on the specific requirements for cleaning Lawrenceville Brick.

GENERAL NOTES

The first step in attaining a brick wall free of dirt, mortar, and mortar stains is to avoid getting them on the wall in the first place. Taking extra care when laying the brick can eliminate a lot of work later on. Especially with sand-finish brick, a soft bristle brush can be extremely helpful in ridding the wall of mortar before it hardens on the face of the brickwork. The wall should be brushed free of loose mortar as soon as the mortar in the joints has set up enough for tooling. Mud and surface clay can sometimes be more difficult than mortar to clean from a wall. However, mud and clay staining is something that can be easily prevented by placing plastic sheeting on the ground at the base of the wall when the job is started. Straw, sawdust, or sand spread at the base of the brickwork is also very effective in preventing rain from splattering the wall with mud or clay. At the end of the workday, it is advisable to cover the masonry with plastic sheeting in order to prevent water from getting in behind the completed masonry wall. This last step can be important in preventing efflorescence in the completed wall.

When the actual cleaning begins, a sample test area of about 20 square feet should be cleaned. Whenever it is possible, this sample area should be inspected after one week to adequately check the effectiveness of the cleaning solution.

Whenever a cleaning solution is used on a wall, the first and most important factor is to thoroughly saturate the wall before applying the solution. The cleaning solution is supposed to work only on the surface of the brickwork, and saturation of the wall prevents it from soaking in and causing various problems such as white scum, efflorescence, and staining. Any cleaning solution used must be mixed in strict accordance with the manufacturer's recommendations. Overly concentrated acid solutions can result in etched out mortar joints and "acid burn". Windows, doors and trim must be protected from cleaning agents, especially acid solutions which can be corrosive to metal frames.

TABLE 1
Cleaning Guide for New Masonry

Brick Category	Cleaning Method	Remarks
Red and Red Flashed	Bucket and Brush Hand Cleaning	Proprietary compounds, hydrochloric acid solutions, and emulsifying agents may be used.
	Pressurized Water	*Smooth Texture:* Mortar stains and smears are generally easier to remove: less surface area exposed; easier to presoak and rinse; unbroken surface, thus more likely to display poor rinsing, acid staining, poor removal of mortar smears.
	Sandblasting	*Rough Texture:* Mortar and dirt tend to penetrate deep into textures: additional area for water and acid absorption; essential to use pressurized water during rinsing.
Red Body with Sand Finish or Surface Coating	Bucket and Brush Hand Cleaning	Clean with plain water and scrub brush using light pressure. Excessive mortar stains may require use of cleaning solutions. *Sandblasting is not recommended.* Cleaning may affect appearance.
Light Colored Units: White, Tan, Buff, Gray, Specks, Pink, Brown and Black	Bucket and Brush Hand Cleaning Pressurized Water Sandblasting	*Do not use muriatic acid!!* Clean with plain water, detergents, emulsifying agents, or suitable proprietary compounds. Manganese colored brick units tend to react to muriatic acid solutions and stain. Light colored brick are more susceptible to "acid burn" and stains, compared to darker units.
Light Colored Units With Sand Finish or Surface Coating	Bucket and Brush Hand Cleaning	See notes for Red Body with Sand Finish or Surface Coating and Light Colored Units: etc. *Sandblasting is not recommended.*
Glazed Brick	Bucket and Brush Hand Cleaning Pressurized Water	Wipe glazed surface with soft cloth within a few minutes of laying units. Use of soft sponge or brush plus ample water supply for final washing. Use detergents where necessary and acid solutions only for *very difficult mortar stain*. Do not use acid on salt glazed or metallic glazed brick. Do not use abrasive powders. Do not use metal cleaning tools or brushes.
Colored Mortars	Method is generally controlled by the brick unit	Many manufacturers of colored mortars do not recommend chemical cleaning solutions. Most acids tend to bleach colored mortars. Mild detergent solutions are generally recommended.

Cleaning Lawrenceville Brick Walls

All face brick and paving brick produced by Lawrenceville Brick are produced using our local clays and shales, resulting in a red-bodied brick. The type of procedure recommended for cleaning Lawrenceville Brick depends upon the particular style of brick in question. Below is a chart which lists individual Lawrenceville Brick products into the proper cleaning method category:

Bucket and Brush Hand Cleaning /
Pressurized Water Cleaning

(This category consists of brick which have no coating of any kind over the basic red body.)

175 - Full Range Paver
275 - Red Range Paver
288 - Red Range Paver
388 - Old Trail Paver
475 - Cocoa Paver
775 - Chestnut Paver

102 - Red Smooth
103 - Flashed Smooth
202 - Red Barktex
203 - Flashed Barktex
204 - Red Wavetex
205 - Flashed Wavetex
212 - Red Wirecut
213 - Flashed Wirecut

Bucket and Brush Cleaning Only

(This category consists of brick which have a sand or surface coating over the red body. Although these finishes are designed to withstand a lifetime of weathering without exposing the red undersurface, they can be dmaged by improper cleaning methods.

109 - Colonial
111A - Midlothian
115 - Old Richmond
302 - Farmington
328 - Oxford Rose
776 - Bennington
426 - Abingdon
431 - Charleston
445 - Stony Creek
473 - Carter's Grove

476 - Berkeley
477 - Rosewell
479 - Gunston
515 - Monticello
542 - Santa Fe
565 - Old Salem
646 -Ashcroft Rose
922 - Newport
9**31** - Cape Charles

BUCKET AND BRUSH HAND CLEANING

The bucket and brush method of cleaning has been used successfully for many years. It is simple to properly execute, and there are many proprietary-cleaning compounds available from Diedrich Technologies and Prosoco with which to work. As mentioned before, it is always best to try a test panel before proceeding with the cleaning of the whole wall whenever time permits. This should not be started until the brick wall has been completed for at least seven days in order to allow time for the mortar to cure. On the other hand, it should not be delayed for long periods of time after the brickwork is completed so as to avoid excess hardening of mortar stains and smears on the surface. The following steps should be taken:

(1) Remove large mortar particles by hand or with a non-metallic scraper.

(2) Protect glass, wood, metal, and limestone surfaces from the cleaning solution by masking with tape or plastic.

(3) Starting from the top down, **thoroughly saturate the area to be cleaned and the area below it.** This will prevent cleaning solutions and dissolved mortar particles from being soaked into the wall.

(4) Apply the cleaning solution, starting from the top, with a long-handled stiff fiber brush and leave it on the surface of the brickwork for five to ten minutes or in accordance with the recommendation of the cleaning solution manufacturer. It is best to work in

the shade to avoid rapid evaporation of the cleaning solution.

(5) Rinse the wall thoroughly by flushing it from top to bottom with clean water before either cleaning solutions or dissolved mortar can dry on the wall.

(6) Work only an area the size of which allows the procedures listed above to be carried out in the proper time.

Various types of cleaning compounds are available for use in the Bucket and Brush Method, and the type used depends upon availability and the specific cleaning problem at hand.

(1) Proprietary cleaning compounds, such as Sure Clean #600 or Diedrich #202 Detergent, containing blends of detergents and mild acids, which are generally available from brick dealers and distributors. Directions should be followed carefully when using these products and a test area should be cleaned whenever possible. Your dealer or distributor can provide you with information describing these products and their proper uses. Lime Solvent, made by either of the companies mentioned above and by others, is another good product for use in cleaning excess mortar off of red brick.

(2) Solutions of detergent or soap may be all that is needed if removal of mud or dirt accumulated during construction is the main concern. A solution of ½ cup of trisodium phosphate and ½ cup of laundry detergent dissolved in 1 gallon of clean water is generally very effective. For especially difficult mud or stains, Sure Clean Restoration Cleaner or Multi Purpose Cleaner or Deidrich Masonry Restorer or like products can give good results when used in accordance with label instructions.

Whenever a cleaning job is done improperly, there is the possibility of a condition known as “white scum”, a hazy film that is difficult to remove because it is caused by insoluble salts deposited on the surface of the brickwork. This can be cleaned with White Scum Remover, available from Diedrich Technologies and Prosoco, manufacturers of cleaning products.

PRESSURIZEDWATER CLEANING

Use of pressurized water in cleaning is very popular because it is sometimes less expensive and quicker than Bucket and Brush Hand Cleaning. It can be used successfully to clean smooth or textured brick types mentioned earlier. **However, it can have the effect of decades of weathering when used on a sand finish or surface coated brick and so should not be used on this type of brick.**

Most high pressure systems allow the operator to adjust pressure with a control switch on the nozzle, going from low pressure (100 to 300 psi) to medium (300 to 700 psi) to high pressure (700 psi or greater). It is very important to note that pressures in excess of 700 psi can possibly erode mortar joints and should be avoided. When using high pressure systems along with a cleaning compound, the following steps should be followed:

(1) Remove large particles by hand or with a non-metallic scraper.

(2) Protect glass, wood, metal, and limestone surfaces from the cleaning solution by masking with tape or plastic sheeting.

(3) Starting from the top down, thoroughly saturate the area to be cleaned and the area

below it. This will prevent cleaning solutions and dissolved mortar particles from being soaked into the wall.

(4) Apply the cleaning solution with a low pressure sprayer or with the low setting on the high pressure sprayer unit.
(5) Allow the solution to remain on the wall for about 5 minutes.
(6) Flush the wall down, starting at the top, and be sure to rinse the wall thoroughly.

NOTE: **We at Lawrenceville Brick realize that, on many occasions, our sand finish and surface coated brick are cleaned with high pressure water. Often this process can be carried out successfully if it is done with the utmost care, but the possibility of careless use of this method and the temptation to turn the pressure up too high have lead us to warn against it.**

REMOVAL OF EFFLORESCENCE SALTS - "the white stuff"

It is not unusual to see white efflorescence salts deposited on the surface of the brick in a recently completed wall. This is sometimes referred to as "new building bloom" and is usually a result of water which has entered the wall dissolving soluble salts which might be present in various components of the brickwork and depositing them on the surface as it evaporates. If these deposits are left alone, they will usually disappear with normal weathering, but they can normally be removed by dry brushing or by using clean water and a stiff brush. Proprietary cleaners, such as Sure Clean #600 or Diedrich #202 Detergent, are available to remove especially heavy deposits. These should be used in strict accordance with the manufacturer's instructions. If efflorescence continues to be a problem, there may be water entering the wall at some area and evaporating out on a regular basis. This should be investigated and corrected in order to stop the process.

We hope that these notes will be helpful to you in choosing a method of cleaning your brick and in carrying out the process. We will be happy to send you copies of Brick Institute of America Technical Notes on Brick Construction, which can provide you information about specific problems. Please call us at (434) 848-3151 if we can help.