



## Technical Bulletin - Brick Color Correction

Brick staining or brick color correction is a widely accepted industry standard practice for dealing with brick color issues. The process has been time tested to be durable and color fast. Brick color correction methods are utilized by virtually every brick manufacturer in the United States. There are also brick color correction contractors that specialize in this process.

There are a variety of proven application methods including Sodium Silicate, Potassium Silicate, and Acrylic bases. Inorganic color fast pigments are used in all of these bases, and typical stain formulations normally utilize the same materials that were used to manufacture the brick.

The process used on the job is custom tailored on each project and the stains are custom mixed on site to match the required color range. The stains are not applied in mass rather the stains are applied individually to the brick units that require treatment. Stain application may consist of several different colors applied to each brick. Typically a test/ approval area will be set up for customer review and approval before staining commences on the building

When the process is completed the customer will receive a warranty from the contractor that performs the work for the durability and performance of the process. Please find attached some additional information regarding the staining process.

### Attachments:

- Endorsement letter from BIA
- Endorsement from Southern Brick Institute
- Article from Masonry Construction Magazine





July 10, 2020

Mr. Jim Bryja, SE, PE  
General Shale Brick  
3015 Bristol Highway  
Johnson City, TN 37601

Sent via email: Jim.Bryja@generalshale.com

Re: Staining Brick Masonry

Mr. Bryja:

This letter is in regard to BIA's policy on staining brick and brick masonry. On occasion, one may desire to change the color of brick in portions or entire facades of existing or newly constructed brick masonry. Instead of removing and replacing brick in well-constructed brick masonry which is acceptable in every other respect, the color of the brick is typically changed through staining the exposed surfaces of the brick in the existing or new brick masonry.

Staining brick masonry is a widely-accepted industry practice that has been successfully executed on brickwork to correct brick color issues or problems since at least 1960. The process involves the application of certain ceramic stains and pigments specifically blended for the brick of the project. Trained, experienced professionals under the employ of reputable, responsible brick manufacturers or specialized brick staining contractors apply the staining materials in accordance with the material manufacturer's directions. The stain then permeates the porous surface of the brick resulting in a color-fast, durable finish that can perform in climatic conditions throughout North America including hot, humid, high precipitation and freezing weather. Properly applied brick stains have proven to be durable over time. In fact, most stain manufacturers provide a warranty for their product.

Brick staining invariably avoids many of the physically and economically impractical situations that arise from removing and replacing existing or new brick. Such situations include the scheduling, time, expense and mess associated with demolition and construction. The staining of individual brick allows the existing mortar to remain in place and avoids the possibility of mismatching the color of fresh mortar with the existing mortar color. In fact, some architects have used brick staining on some new projects to provide an exact color for the brickwork they desire.

Staining brick masonry is a viable method for changing the color of existing and new brick and mortar surfaces. Furthermore, brick staining does not affect the structural integrity of the brick units or the mortar joints. In short, staining brick masonry is a widely accepted practice that produces a color-fast, durable finish that delivers successful, proven performance.

If you have any further questions, please do not hesitate to contact me.

Cordially,

Charles B. Clark, Jr., AIA, PE, LEED AP  
Vice President, Engineering Services



## **Color Correction Of Brickwork**

There are a number of circumstances that call for finished brickwork to be color corrected. These may include, among others, buildings where brick from different production runs must be used; where multiple colors of brick in a job may not have been properly distributed, causing a patchwork appearance; where the faces of brick have been damaged by rough handling or by improper cleaning methods; or where an addition to a building requires that newly manufactured brick must be laid next to existing brickwork.

In many of these cases it is not physically or economically practical to remove and replace brick to correct the above mentioned color inconsistencies. A patched section in brickwork is often more visually offensive than the original condition due to variations in mortar set rate, mortar color matching and brick run matching issues.

Brick colors, textures and finishes are intentionally varied by manufacturers to give the customer nearly infinite choices of brick blends. The variations are accomplished by changing brick clay mixes, by surface treatment with unique mechanical texturing devices, by surface additions of numerous sand, mineral or slurry coatings, and by changes in firing techniques. Some of these coloring techniques are virtually indestructible. Some are designed to change over time. Some are vulnerable to damage by improper handling and cleaning. All are capable of being laid in the wall in less than desirable blends. Brick manufactures' package tags usually give detailed instruction on color blending, sampling of material before installation and proper cleaning methods.

Despite the best efforts to avoid color inconsistencies in brickwork, they still occur. The color correction of brick masonry by application of ceramic stains and pigments is a widely used and accepted practice in brick construction. Brick colors are corrected on the surface in the wall more often than may be realized.

Color correction of brick masonry has been successfully done since at least 1960. The materials and methods employed by responsible brick companies and staining contractors have been developed and perfected to the point that corrected areas are virtually invisible. When a repair is made and the repaired section is undistinguishable from the remainder of the brickwork for the life of the building, it is regarded as a successful repair.

Many owners and general contractors who have never heard of color correction of brickwork are at first surprised and skeptical, because it is a new process to them. This is understandable, but it should be remembered that brick manufacturers and distributors have a vested interest in providing an attractive, functional product to the construction industry. If a responsible manufacturer recommends color correction of brickwork as a solution to an aesthetic problem, they have experience and confidence in this useful, although often unknown procedure.

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# Changing the face of masonry

*Hand-applied color treatment corrects problems, enhances details, and allows closer color matching in rehab work*

By Kenneth A. Hooker



After 1 day of work, colors are blended to the satisfaction of the owner and builder. The color-treated brick are virtually indistinguishable from untreated brick and are guaranteed for 25 years.

It happens in new construction: Block from different production runs are mixed in a wall; range brick are unevenly distributed; mortar color is inconsistent. It happens in remodeling and restoration: New brick, however carefully selected, just don't match the original material.

The building owner is unhappy. The architect won't approve the job. The contractor's payment is withheld. And the material supplier and manufacturer are on the spot.

Tearing down the wall and starting over is a drastic solution to a color problem, but it has been done. Materials manufacturers can correct some color problems in the field, but the possibilities and results have been somewhat limited.

## Coloring service founded

One person who spent 18 years with a Canadian manufacturer specializing in such corrective work developed and refined these color alteration materials and techniques to an unusual degree. His success in coloring masonry led him to found his own service company. Founded in Toronto in 1988, the firm now has six offices across Canada and has recently opened U.S. operations near Chicago and Atlanta.

The company's clients were drawn first from manufacturers and distributors of materials, eager to correct color problems and settle disputes. As its business

became more established, however, the company began catering to building owners and architects as well.

Working with proprietary, water-based, multipolymer stains, the company's "masonry artists" use a variety of hand-application techniques to change the appearance of masonry in place. The pigments are absorbed into the pores of the masonry units or mortar to make a color change that lasts indefinitely but can be altered by further application of stain.

### Case history

On one recent residential job, the brick was to have an overall red base with range brick of white, grayish-tan, and black. The brick was delivered and laid; however, it lacked enough of the range colors, so many areas were almost completely red.

The coloring crew mixed quan-

tities of the three range colors and set to work. After experimenting to find the correct colors and application techniques, they stained selected brick to match the desired color range and distribution. The work was completed in 1 day at a cost of about \$800. According to a company representative, their work generally costs about 1/3 the cost of replacing masonry in a wall.

### Porosity and texture are important

The process is said not to be limited by the degree of color change needed. Masonry can be stained from light to dark, dark to light, or to a different hue of the same value.

Limitations do exist, however, based on the porosity and density of the masonry. Very hard, smooth brick do not accept the color as well as more porous ma-

terials. The work also is limited by variations in texture. Bark- or other rough-textured brick cannot be made to appear the same as a smoother material, even if their colors are identical.

Company vice president Peter Woodworth says the company maintains 100% customer satisfaction by making clear to prospective customers what results they can expect. "Once we feel the customer has a realistic view of what we can achieve, we do whatever it takes to make that happen," says Woodworth. "Sometimes it's more work than we initially expect, sometimes it's less. As our crews gain experience, though, they become more aware of what they can do and how to do it efficiently."

Two-person crews travel in vans equipped with about a dozen common colors premixed, plus bases and pigments to mix



Too few range brick were delivered and installed, resulting in an uneven and unacceptable appearance.



"Masonry artists" apply water-based, multipolymer stain and create the desired color blend.

unusual shades. They carry brushes, sponges, rags, and other implements to apply the color.

"Though we learned the name 'masonry art' was too generic to qualify for trademark designation, we think it's a good description of the work we do," says Woodworth. "Our technicians need a good eye for color and texture, and a knowledge of application techniques."

#### Corrective work

On one job, the company changed the mortar color on a building in which colored mortar was intended but inadvertently omitted from the specifications. Its crew has matched the colors of interior walls constructed of 8- and 12-inch architectural block from two different production runs. They've recolored white concrete block smoke-stained from a fire adjacent to the storage yard to match undamaged block installed in the same wall.

Other work has not been cor-

rective, but merely cosmetic. A homeowner wishes to highlight decorative brickwork—quoins, arches, dentils, and so on—by making it a different color from the rest of the house. Or to change the color of a fireplace to better complement a remodeled living room.

#### Restoration projects

One major field of work is in restoration and remodeling. For instance, an addition is removed and portions of an original wall need to be rebuilt. The original brick is no longer available. Most of the time, the impulse is to try matching the color as closely as possible with new brick. Woodworth says his company can work with the restoration architect to achieve a better match.

"We tell them to look for new brick that matches the size and texture of the original, in a shade a little bit lighter. We can then go in and easily alter the color for an exact match."

In interviews, customers, including building owners, contractors, manufacturers, and architects, were uniformly enthusiastic about the results achieved. All agreed that the appearance of the color-treated material was excellent, and none was reluctant to use the service again.

The one concern expressed was how long the color would last and whether color-treated material would react differently to weather exposure from untreated material. The company does offer accelerated freeze-thaw and UV-exposure test results (and many years' experience with a spirit-based stain) to back its 25-year guarantee. But no projects using its water-based stains have been finished long enough to confirm long-term performance. ■

PUBLICATION #M910470

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