



## Brick Selection

The selection of a brick for a new structure based strictly on the appearance of a brick in an existing structure, especially if that structure has been standing for several years, can be very misleading and can result in a substantially different appearance or esthetic effect than what is anticipated. Factors, which may contribute to this appearance difference, even though the brick themselves are identical when manufactured, are as follows:

1. **Architectural Styles** – Brick walls on a long rambling ranch style home with offsets and planters will look different than identical walls on a box type two-story commercial building.
2. **Setting** – Wooded lots versus open lots versus sloping lots, rural settings versus urban settings, trees and shrubs versus plain fronts, shading and shadow of trees, sun exposure during different times of the day, and general landscaping all affect the appearance of a brick wall and can give false impressions of the actual appearance of the brick if one is not careful.
3. **Trim and Decorative Effects** – Different colors of trim on a structure and different decorative effects such as sun screens, planters, window treatments; etc., can affect the appearance of a brick wall.
4. **Mortar Color and Joint Type** – Mortar joints can account for 20% - 25% of the surface area on a brick wall. Therefore even slight changes in the color of mortar can have a significant effect on the overall appearance of the wall. A major change in mortar color from a light to very dark can make identical brick in a wall appear to be two completely different brick. The type of joint (raked, grapevine, etc.) can also have the same type of effect to a slightly less extent. Type of sand, color of sand, mortar colorants, additives, inconsistencies in batching and mixing, and even different brands of cement can also affect the color of the mortar. The time allowed for mortar to set before the joints are tooled or struck also affects mortar color. Joints that are tooled sooner than others will appear significantly darker in color.
5. **Moisture Content of Wall** - A wall that is wet will appear darker than a wall that is dry. Moisture in the wall affects the color of the brick and coatings as well as the mortar joints. This is especially true after the walls are laid and construction water (water used to mix mortar, rain during construction) remains within the wall. It can take a month or more for a new wall to completely dry.
6. **Age of Structure** – All manufactured brick have some degree of porosity and because of this are subject to the accumulation of atmospheric dust and dirt over a period of years. This is a natural weathering process but can cause brick of slightly high porosity to darken faster than those of lower porosity. The weathering or slight darkening of the appearance of a brick wall is to be expected and should be taken into account when choosing a brick from an old existing structure.
7. **Lime Bloom** - Certain brick which are manufactured with a lime coating (e.g. Cortez) sometimes undergo a slight color change which occurs after the brick has been laid in the wall. Usually the

color change will be from darker to lighter. This process will normally occur within 3-6 months after construction. The color change is caused by the chemical reaction of the brick coating with elements in the atmosphere and in rain water. This phenomena is sometimes referred to as "Lime Bloom".

8. **Masonry Workmanship and Initial Cleaning** – Poor masonry workmanship where mortar is allowed to dry on the wall and with no subsequent cleaning can result in different wall appearance than one where good workmanship is applied and good cleaning practices adhered to. Poor cleaning practices can also change a brick's appearance even with good workmanship. It is very difficult to tell exactly to what extent a brick's appearance has been altered in an existing structure by workmanship and initial cleaning unless you know what to look for.
9. **Customer Ordered Variations of Standard Brick Ranges** – Many times brick are ordered by a customer with certain variations of a standard range of brick such as leaving out one of four distinct colors in that range. It is still sold under that particular standard brick name. This will definitely change the wall appearance and may even give false impressions of the standard brick range if this is the only wall or structure a customer looks at.
10. **Manufacturing Changes** – Thorough the years of a normal brick's lifetime, manufacturing changes may have to be made that can cause minor variations in the color of that brick. It is still sold under the original name, but changes in the original master panel representing that range of brick may have occurred. Because manufacturing changes sometimes result in only very subtle changes it is not always practical to resample each time a change is made. It is easily possible that even relatively new structures may not be representative of current manufactured colors of the same named brick. Some of the changes that plants can be forced to make are as follows:
  - A. Change in bricks raw materials – brick clay pits are not inexhaustible and plants must find new raw materials from time to time. This may cause a change of not only body color, but also coatings because maturing temperature may have changed.
  - B. Processing changes mainly brought about by automation and new techniques can also affect color appearance.
  - C. Suppliers of coloring materials also have their problems in maintaining raw material consistency over long periods. Many times the brick manufacturer is forced to change suppliers for economic or quality reason, which can result in minor brick color changes over the years.
  - D. Fuel supply, type of fuel, or fuel economy is coming more to the forefront in the past few years as a source of brick color changes. Natural gas, fuel oil, propane, and coal have to be interchanged as sources of heat for firing brick and with these changes may come a gradual change of a basic color range. Current samples are more indicative of what is now being manufactured by a brick plant than those, which are selected from an existing structure. Fuel type may have changed three or four times since the original structure was built, yet the brick are being sold under the same trade name and code number.
  - E. Experimental tests on brick are constantly being run, sometimes only minor variations of an original brick line are sold under an existing trade name or color code number. Examples would be a new blend of raw materials or a new method of flashing. These could result in minor color changes in the wall.

## **CONCLUSIONS:**

The selection of a brick for a new structure based entirely on how it appears in any existing structure, especially one that is quite a few years old, can be very misleading. There are too many things that can affect the brick appearance in an existing building to be assured that the same brick will look exactly the same in the new structure. Several existing buildings containing the desired brick should be inspected at different times of the day, recent or current production brick should be inspected prior to selection. Mortar color, joint treatment, effects of aging, trim colors, architectural designs, settings, shadows, landscaping, etc., should all be mentally compared before making a final brick selection for any new building based on what a brick appears to look like in an existing structure.