



From historic and weathered, to modern and sleek, bricks play a vital role in the aesthetics of American architecture. Image Credit: Unsplash user Fernando Reyes

Brick is an essential part of the aesthetic fabric of American architecture. In every major U.S. city, and thousands of smaller cities, towns, and villages, brick buildings line the avenues, house after house, business after business. Even in areas dominated by wooden, cement, or modern steel-and-glass architecture, brick buildings still dot the streets, relics from earlier days or testaments to the taste of their builder. Often, even buildings made from other materials have a brick facade simply for looks. In the U.S., we like to build with brick.¹

Builders Choose Bricks Based on Color

The reasons for the prevalence of brick are myriad. Brick has enormous compressive strength, allowing it to hold heavy loads. It insulates highly effectively, regulating temperature and blocking out noise, making it ideal for use in harsh climates and high-traffic areas. Another major selling point is that brick does not burn, a fact that led to the proliferation of brick buildings after a number of historic fires in cities across the country. After Chicago burned to the ground in 1871, for example, brick was mandated in the building code. But perhaps the most important reason people choose brick for their homes is the aesthetic, which explains why even wooden homes so often have brick facades. People simply like the way brick looks.

Because aesthetics are so important, the final color of bricks is of considerable value for brick manufacturers. While a range of colors are tolerated—and even prized—in bricks used for architecture, builders are still choosing brick based on hue. As such, brick manufacturers must ensure that their bricks are the color that builders desire. This is accomplished both by paying careful attention to the mineral properties of the clay they fire to produce brick and by using color measurement instruments to ensure that each batch of bricks falls within acceptable tolerance standards.



Builders pay great attention to the color of their bricks. Credit: Unsplash user Kevin Wolf

Spectrophotometers Allow Manufacturers to Recreate Specific Brick Colors

Brick color is primarily the result of the chemical reactions of various minerals within the brick and the temperature at which it is fired ². For example, the presence of iron oxide in clay causes bricks to take on a pink hue while increasing firing temperature causes them to burn to progressively darker shades of red. As such, color can be adjusted by influencing the amount of iron oxide and overall minerals content in clay before bricks are fired as well as adjusting firing temperature.

In order for manufacturers to know what color their bricks will turn out, they must be able to document the exact color of bricks produced under given conditions. [With this data](#), you are able to recreate past colors or make alterations to past formulae to create a new palette.

Spectrophotometers are ideal for documenting the final color of bricks. These instruments measure color by reflecting controlled bursts of light off sample objects and analyzing the wavelengths of the reflected light. Certain spectrophotometers can take into account the [effects of sample texture during measurement](#), an important consideration due to [the roughness of bricks](#). The results of spectrophotometric measurements can then be correlated with the temperatures and chemical content of clay to create a “recipe book” for bricks of any color.



Spectrophotometers allow for the highest level of brick color quality control. Image Credit: Pexels user Justin Hamilton

Spectrophotometers Ensure Brick Batch Quality Control

Spectrophotometers can also be used for end product quality control. When preparing a custom batch of bricks to meet builder requirements, spectrophotometers can ensure that the bricks are within the correct color range before they leave the factory. Likewise, when preparing bricks for general stocks, spectrophotometers can be used to accurately sort batches into their correct color ranges.

Spectrophotometers are preferable over using human observers for brick color measurement due to the exact, objective nature of their measurements. They are able to [create clear, numerical standards](#) for brick color, increasing the repeatability and reliability of a manufacturer's process. By doing so, brick manufacturers eliminate the risk of needing to rework a batch when it fails to meet a builder's standards, increasing efficiency and minimizing labor and material waste.

HunterLab Quality

With over six decades of experience developing color measurement solutions for the [building materials industry](#), HunterLab has sound expertise in the spectrophotometric measurement of all types of brick. By employing a HunterLab spectrophotometer, manufacturers can modernize their coloration process and ensure that each batch meets color tolerance standards. [Contact us](#) to learn more about our innovative range of color measurement instruments and to discover which spectrophotometers could work best for your production process.

1. "An overview of the American Brick Industry,"

2017, <http://www.gobrick.com/resources/american-brick-industry>

2. "The History of Bricks and Brickmaking",

2014, http://www.brickdirectory.co.uk/html/brick_history.html