



Appropriate color measurement tests can help you create fiber cement siding that is as beautiful as it is durable. Image Source: Shutterstock user Kiattisak Thongtawee

Fiber cement siding—a sturdy combination of wood pulp, fly ash, portland cement, and water—was first introduced in the construction industry just 25 years ago.<sup>1</sup> Since then, it's become one of the most popular materials that architects use for their projects. Almost 15 percent of all new homes have fiber cement siding, in part because this material is so durable and versatile. Although this material can be made to look just like [brick](#), stone, or wood siding, it is actually far stronger than wood or [vinyl materials](#), and less expensive to make than brick or stone. Quality fiber cement siding is fire resistant, termite-proof, rot-proof, and can withstand extreme weather conditions like heavy rain, strong winds or fluctuations in temperature.

But in order to achieve both the durability and beauty of fiber cement siding, manufacturers have to use appropriate color measurement methods at different points in the manufacturing process. [Siding color](#) is often the first thing that visitors notice when they look at a house, which is why it's so important to test for color accuracy before you sell your products to customers. Even subtle inconsistencies in color could make fiber cement siding appear cheaply-made or weather-worn, and will negatively impact the overall appearance of the house. By using spectrophotometric color measurement during manufacturing, you can ensure that every piece of fiber cement siding meets your exacting standards and that your final product will appear beautifully-crafted.



Unpainted fiber cement siding is usually light grey in color. Image Source: Wikimedia user Michael Holley

### Why Color Consistency Matters

Fiber cement manufacturers have two choices when they craft their materials: they can either paint the final products themselves or sell their customers the unpainted, unstained siding material.<sup>2</sup> Regardless of which option you choose, you need to have accurate color measurement methods in place.

Unpainted fiber cement siding is usually light grey in color. If you offer your customers an unpainted, unstained product, you have to ensure that your products are the same standard shade of grey from batch-to-batch. That's because your customers need a consistent base on which they can apply their final paint or stain color of choice. If the color of your unpainted siding varies batch-by-batch from light grey to dark grey, then the final coat of paint that your customers apply may appear darker or lighter than expected. To ensure that your customers can create the look they want, they must have a reliable blank slate.

Color consistency is also essential if you offer your customers pre-painted, installation-ready products. You have to ensure that every panel is the same color, as even small variations in paint or stain color could make the final siding project appear less aesthetically pleasing. Using a spectrophotometer, you can attain accurate color measurements for every product you make, whether it's painted or unpainted.



By measuring color in advance, you can ensure that your final product looks consistent when it is installed by architects. Image Source: Shutterstock user Cory A Ulrich

#### Color Measurement Options

Siding can present special challenges for accurate color measurement and [the best measurement method](#) will depend on your manufacturing needs and preferences.

- **Directional 45°/0° Instrumentation:** A directional 45°/0° spectrophotometer measures color the way the human eye sees it. Because it measures only diffuse reflectance and excludes specular information, it will automatically exclude the effects of attributes like gloss and texture. As such, you too easily match the appearance of samples with different geometric attributes.
- **On-line Instrumentation:** 45°/0° and d/8° instruments are typically available in portable or benchtop formats, which require operators to physically measure samples at regular intervals. This can be a laborious process that introduces the possibility of operator error and leaves you unsure of whether the sample was truly reflective of the entire batch. On-line instruments like HunterLab's [SpectraTrend HT](#), on the other hand, eliminate these vulnerabilities.

The SpectraTrend HT uses a 0°/30° design and can be integrated within the manufacturing line to provide continuous non-contact monitoring without the need for manual sampling. Embedded lasers analyze the height of your sample, and sophisticated algorithms compensate for any texture variation, ensuring accurate and precise readings of every batch. However, the SpectraTrend HT doesn't just report color data, it also analyzes whether that data falls within your tolerance range and instantly alerts operators to unwanted color variation. As such, you can easily identify out of

spec product and take early corrective action. For many siding manufacturers, on-line instruments like the SpectraTrend HT are an essential part of optimizing both color quality control and overall efficiency.

#### HunterLab Reliability

For more than 60 years, HunterLab has worked with manufacturers in the [construction industry](#) to produce the most functionally reliable and aesthetically pleasing materials for houses, office buildings, and [large-scale architectural projects](#). Our instruments offer the accuracy, precision, and flexibility manufacturers need in order to create the highest quality products. With a [comprehensive range of spectrophotometers](#) to choose from, you'll be sure to find the right tools for your needs. [Contact us](#) today to learn more about our innovative technologies and world-class customer support services.

1. "All About Fiber Cement Siding", <https://www.thisoldhouse.com/ideas/all-about-fiber-cement-siding>
2. "How Long Does Fiber Cement Siding Last?", December 18, 2015, <http://www.allurausa.com/blog/how-long-does-fiber-cement-siding-last>