Application Note - Accurate color measurement ensuring aesthetic appeal and product quality across diverse materials

Color Measurement in the Building Industry

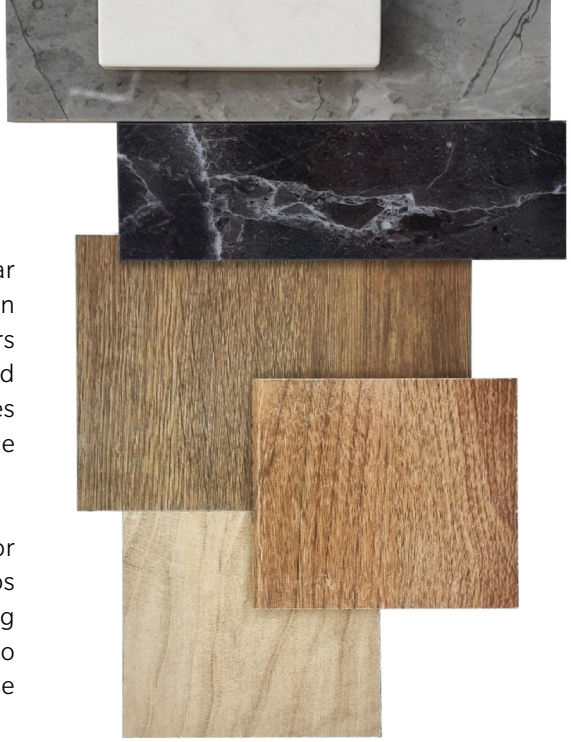
Introduction of evaluation case studies for various building materials

In the building materials industry, color plays a critical role in both aesthetic appeal and product quality. From natural wood flooring to high-gloss metallic finishes, the ability to accurately evaluate and reproduce color is essential for maintaining consistency, meeting design specifications, and satisfying customer expectations

Through these application examples, we explore:

- Visualizing color differences in wood flooring, carpeting, and mortar.
- Evaluating color on tiles with surface unevenness and irregular patterns using different aperture sizes.
- Measuring deep black and mirror-finish materials with high precision.
- Assessing metallic and glossy finishes, including aluminum sashes and hairline silver surfaces.

Each example is supported by visual data and practical insights, helping professionals in architecture, construction, and manufacturing to make informed decisions about color quality and consistency.



Visualizing color differences in wood flooring, carpeting, and mortar

Visualizing color differences in wood flooring, carpeting, and mortar is essential for achieving cohesive interior design and construction outcomes. Each material interacts with light and surrounding colors differently – wood flooring often displays natural grain variations and undertones that shift with lighting, carpeting can absorb or reflect hues depending on its texture and pile, and mortar color can subtly influence the perceived tone of adjacent tiles or bricks.

To support professionals in the building industry, our advanced color measurement instruments provides precise, objective data that helps customers evaluate and compare material tones under various lighting conditions. This empowers designers, contractors, and suppliers to make informed decisions, ensuring that the final aesthetic aligns with the intended design vision and avoids costly mismatches.

Chroma Meter CR-410

Evaluating color on tiles with surface unevenness and irregular patterns using different aperture sizes

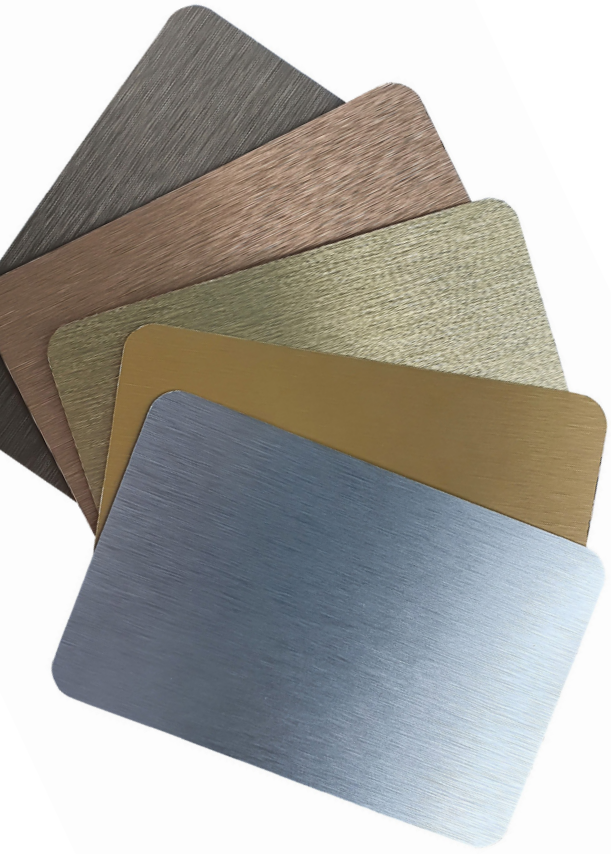
Color evaluation of building materials such as tiles and concrete can be particularly challenging due to color irregularities and surface unevenness caused by variations in glaze, texture, and finish. These factors make visual assessment inconsistent and subjective. To address this, one of our color measurement instrument (Chroma Meter CR-410) offers a 50mm aperture, enabling users to measure a broader surface area and capture the average spectrum of uneven surfaces more accurately. Our CR-400 provides an 8 mm and other instruments such as CM-26dG, CM-17d and more provides a 3 mm aperture, helping customers to measure smaller areas with precision. This capability is especially valuable for professionals in the building industry who require reliable, objective color data for quality control, batch consistency, and design alignment.

Measuring deep black and mirror-finish materials with high precision

Color evaluation of high-gloss piano black and mirror-finish metal building materials presents unique challenges due to their extreme reflectivity, surface sensitivity, and susceptibility to lighting variations. These materials often exhibit subtle undertones and directional gloss that make visual inspection unreliable and inconsistent. Our spectrophotometer such as CM-17d is specifically designed to address these complexities.

For deep black surfaces, it demonstrates compatibility with the three black color standards – Blackness, Jetness, and Undertone – making it ideal for evaluating rich, jet black finishes. For mirror-finish metals, accurate color evaluation requires SCI (Specular Component Included) measurement, and we strongly recommend using a spectrophotometer to ensure reliable and consistent results. By minimizing specular reflection and capturing stable spectral data, our instrument empowers professionals in the building industry to maintain high-quality standards, ensure batch consistency, and achieve precise aesthetic alignment in premium architectural applications.

Spectrophotometer CM-17d



Assessing metallic and glossy finishes, including aluminum sashes and hairline silver surfaces

Color evaluation of aluminum sash, hairline silver, metallic, and glossy building materials requires specialized approaches due to their reflective surfaces, directional textures, and complex light interactions.

For aluminum sash materials, a spectrophotometer with a ø8 mm aperture, such as the CM-17d or CM-26dG, is optimal for capturing accurate color data across narrow profiles and structured surfaces.
When assessing finishes like hairline silver or metallic coatings, where both color and brightness shift depending on the viewing angle, the CM-M6 is the most suitable instrument thanks to its multi-angle measurement capability.

For glossy building materials, accurate evaluation of both color and gloss is essential, models like the CM-26dG and CM-36dG captures simultaneous integrated true 60 degree gloss data during standard color measurements to ensure consistent and reliable results. These instruments help professionals in the building industry maintain high standards of visual quality, batch consistency, and design precision across a wide range of challenging materials.

Ensuring Colour Consistency Across Every Surface

In the building industry, accurate color evaluation is essential for maintaining consistency, quality, and visual harmony across a wide range of materials – from aluminum sashes and metallic finishes to glossy surfaces and deep blacks.

Our suite of color measurement instruments supports color quantification across all stages – from design to manufacturing, ensuring that every stakeholder can rely on objective, repeatable data.

By enabling professionals to communicate color information during production with accurate, quantitative data, we help eliminate misunderstandings and reduce costly errors.

Whether evaluating complex textures, reflective surfaces, or high-gloss finishes, our solutions empower users to make confident decisions and deliver visually cohesive results in every project.

How to Measure Colour in Building Materials – Instrument Options

CM-17d
Fast and accurate color measurements on small, curved, or flexible surfaces, with dual aperture.

CM-26dG
Dual capability: high-precision color measurement and integrated 60 degree gloss measurement in one. shot.

CM-36dG
Simutaneous color measurement including transmittance measurement and 60 degree gloss measurement.

CR-410
Our best-selling colorimeter globally accepted as the standard in a wide range of industries with an aperture size of 50 mm.