BRAVA

TECHNICAL BULLETIN

TB-240402R1

Published April 9, 2024 | Scope: Codes & Testing | Revised October 7, 2024

UV TESTING & COLOR DURABILITY

SUMMARY

Customers who choose Brava products can be confident in product UV performance based on industry-leading formulation practices, proven test results, and real-world roof system performance.

Brava Roof Tile products are manufactured using mineral pigments and undergo extensive testing to validate UV performance and color durability.

CONTENTS

- Mineral Pigments
- UV & Color Testing
- ASTM G155
- ASTM D2244
- Warranty
- Notes
- Resources
- Questions

MINERAL PIGMENTS

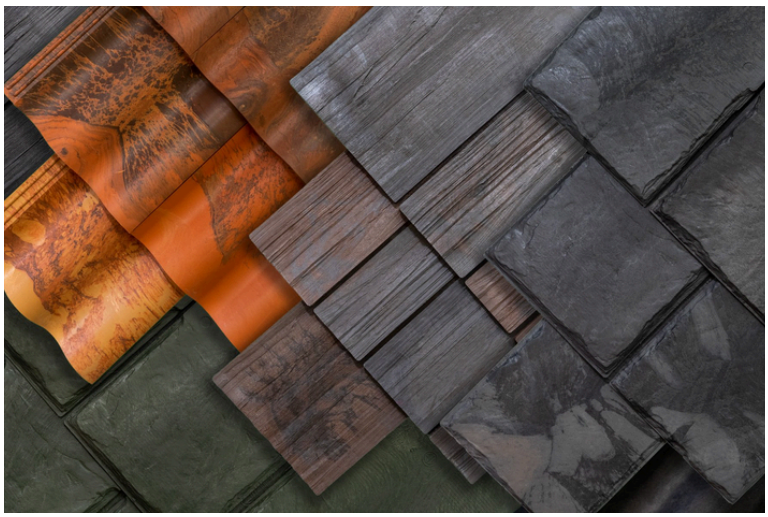
Brava roof tiles are made with mineral pigments, not chemical colorants. Chemical colorants break down and degrade over time in intense UV radiation found in sunlight. Using our COLORCAST™ mineral-infusion process, mineral pigments are thoroughly dispersed in the product. This process makes for long-lasting color throughout each Brava Tile. Learn about Brava Colors at bravarooftile.com - A Lifetime of Color.



CARBON BLACK



REFINED RED IRON





TESTING & PERFORMANCE

Brava works closely with trusted industry testing agencies and suppliers to provide best-in-class UV performance. Brava's products undergo two ASTM test methods to test for UV performance. These tests are ASTM G155 and ASTM D2244.

ASTM G155 xenon arc testing is a test standard used to simulate the effects of sunlight and moisture on materials under harsh conditions. This simulation accelerates aging effects to allow for shorter testing durations to predict future results.

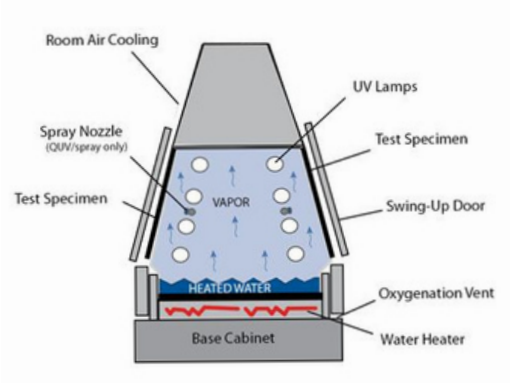
ASTM D2244 is the standard practice for the calculation of color tolerances and color differences from instrumentally measured color coordinates. The color difference between a reference and an aged test specimen is determined using a color spectrophotometer.

ASTM G155

Test samples of Brava Roof Tile products with our standard UV stabilization formulation were exposed to a xenon arc lamp apparatus for 4,500 hours in a controlled environment through a 3rd party testing agency. This testing meets the requirements for Miami-Dade County, Florida, in the southernmost part of the continental United States.

Brava elected to continue testing using industry-standard QUV Weathering chambers with samples exceeding 15,000 hours. This testing duration approximates 20+ years in a high UV environment like Florida.

Negligible strength or visible difference was measured between controls and weathered samples.



QUV accelerated weathering tester reproduces the potential damage caused by sunlight, rain, and dew.

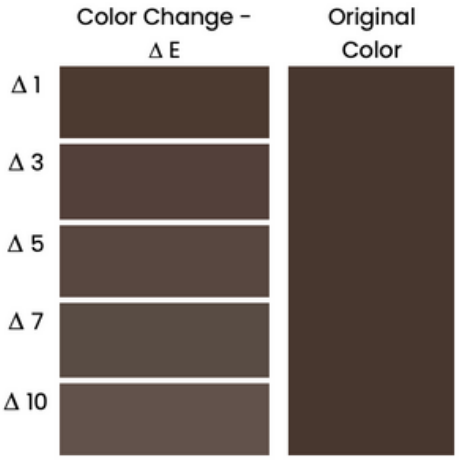
ASTM D2244

This test determines the magnitude and direction of color departure through three instrumentally determined components measured in Hunter Units (ΔE). This method is widely used in industrial and commercial applications including, but not limited to, automobiles, coatings, cosmetics, inks, packaging, paints, plastics, printing, security, and textiles.

After each course of accelerated weathering, products are tested for color durability, providing a standardized measurement as individual differences in color vision affect how colors are perceived.



Color Spectrophotometer used during ASTM D2244 to evaluate and standardize color measurements of material samples before and after accelerated UV exposure testing.



Example of color difference and perceptibility to the human eye.

WARRANTY

While Brava Products are designed to resist fading, no material is fade proof when exposed to years of UV exposure and the elements.

Our products are designed to resist fading under normal conditions and will not fade by more than 4 Hunter Units (ΔE) for the first 10 years.

Brava also offers a High UV package for additional protection in high-altitude regions.

NOTES

Color vision differences are influenced by both physiological and environmental factors, affecting perception of color among individuals. Testing mechanisms aim to standardize color perception across variations in spectral sensitivity.*

*Emery KJ, Webster MA. Individual differences and their implications for color perception. Curr Opin Behav Sci. 2019 Dec;30:28-33.

RESOURCES

Check for updates to this and other Technical Bulletins on our Resources Page.

Complete Installation Training, View Resources, and Contact Technical Support by visiting our Technical Support Portal. *(Brava Online Training is Self-Paced and Mobile Accessible.)*

Training before beginning installation can improve project outcomes.

QUESTIONS

If you have any questions regarding Brava Roof Tile products and accessories, call 844-290-4196 and ask for Technical Support.
Or contact us through the Technical Support Portal.