

Best Practices in **Decorative Concrete**

Trowel-Finished Integrally Colored Concrete

Integrally colored, trowel-finished concrete flatwork will have natural variations in color (Fig. 1). While the decorative concrete contractor can minimize these variations through careful control of such factors as the materials used in the concrete, the mixture proportions, weather conditions, finishing methods, and curing, the contractor must also manage the expectations of the owner.

First, it's imperative that the owner understands and accepts that colored concrete will never match the uniformity of an opaque painted surface. Second, it's important to provide examples that allow the owner to see that integrally colored concrete will have some natural color marbling. For small projects, photos or site visits might be sufficient. For large projects, construction of a field mock-up can provide an on-site standard for approval of the proposed work and evaluation of the finished product. The mock-up and the final product should always use the same materials; placing and finishing tools; and materials and methods for finishing, curing, and sealing the flatwork.

The best practices for minimizing color variations in troweled, integrally colored concrete surfaces are related to:

Type of finish

A sweat finish involves minimal troweling—perhaps two passes—while a burnished (hard-troweled) finish uses multiple passes with either hand tools or walk-behind power trowels. A sweat finish will more closely match the color of the delivered concrete than a burnished finish. Burnished finishes are also more likely to have dark areas (called trowel burn), especially when power trowels are used. Making fewer trowel passes, reducing the rotation speed of the power trowel, and using steel-reinforced plastic blades can help to reduce the likelihood of dark or burned areas.

Tools

Hand-held finishing trowels usually create a darker color than Fresno trowels because the large blade and long handle of the Fresno trowel limits the amount of pressure that the finisher can apply. Color variations can also result if a magnesium float is used instead of a steel Fresno trowel.

Timing

The tinting strength of the pigment in integrally colored concrete is reduced by extra water. Troweling the surface early works

bleed water into the surface, so early finishing can lighten the color or cause areas of bleached or blushed color tones. Bleed water that appears following troweling and is left on the surface can leave a white puddle appearance, and water added at the surface by the finisher will also produce a lighter color shade.

Technique

Inconsistent troweling is the most common cause of color variations (Fig. 2). Controlling the applied pressure, even when edging, will result in a more uniform color. Varying the type of finishing tool, the troweling direction, or the number of trowel passes are common and correctable inconsistencies. Making a full-surface final troweling pass can help to reduce local color variations.

Members of the Decorative Concrete Council (DCC), a specialty council of the American Society of Concrete Contractors (ASCC), will work with owners and architects to develop specifications and establish methods for addressing technical requirements to meet desired final appearance of their decorative concrete projects. For more information, visit www.asconline.org or call the ASCC Decorative Concrete Hotline at (888) 483-5288.

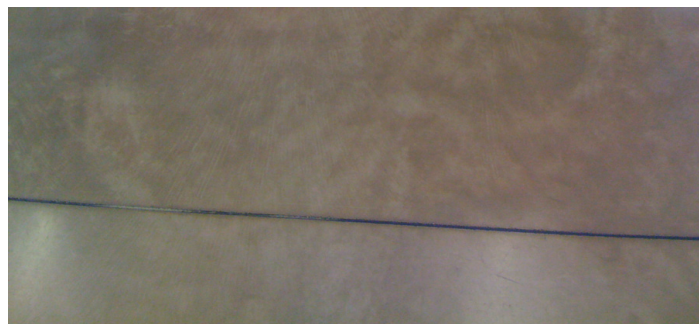


Fig. 1: Normal color variations seen in power trowel finished floors (photo courtesy of Decorative Concrete Resources, Saginaw, MI)

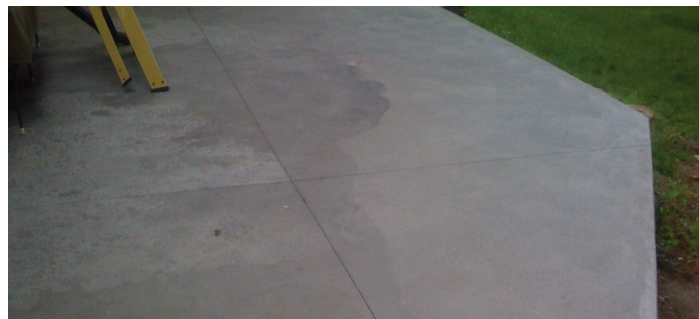


Fig. 2: Color differences caused by inconsistent finishing techniques (photo courtesy of Decorative Concrete Resources, Saginaw, MI)

