

How Integral COLOR



Can Enhance Your Concrete Project



It is easy to see why the use of colored concrete has grown so dramatically. Integrally colored concrete brings a highly desirable and stylish look to any concrete project. Because it is available in a wide variety of colors your project is limited only by your imagination.

However, the endless possibilities bring heightened expectations. Normal shading differences, barely noticeable in plain “grey” concrete, can be more pronounced in colored concrete.

It is important to clearly communicate to the owner the reality of these potential variations in the finished colored concrete’s appearance in order to minimize potential conflict with their expectations.

The color used in concrete is not a dye or stain, it is a pigment. These pigments are much finer than the grains of cement which react to form the bonds of concrete. These very fine-grained particles become mixed into the paste portion of the concrete and become an “integral” part of the hardened concrete.

This checklist of do’s and don’ts helps the concrete supplier and contractor achieve the best possible colored concrete project.

- Use an integral color pigment from one of the leading manufacturers.
- Add integral color to the concrete using a consistent batch to batch process and mixing procedure.
- Variations in cement quantity, brand, and pozzolan percentages should be avoided.
- Do not use accelerators containing calcium chloride.

- Keep water content consistent. The most common source of variation in concrete colors comes from variation in water content. Changes in water content will always result in color variations.
- Avoid adding water from one concrete load to the next.
- Avoid adding water after the concrete has begun to be discharged.
- Never add water to the surface to aid in finishing.
- Avoid adding water from using a constantly wetted finishing tool.

- Use a curing compound specifically designed for colored concrete.
- Apply the curing compound immediately after finishing (as soon as possible as to not damage the surface) and in accordance with the manufacturer's instructions.
- The use of water spray curing, plastic sheeting, or any type of covering should be avoided.
- Use care not to apply the first coat of a sealer too thick. This can result a whitening of the surface under the sealer.

The second leading cause of color variation is inconsistencies in finishing practices. It is critical to minimize finishing on colored concrete. A broom or lightly textured finish will provide the most consistent finished color. The use of trowels or darbies can readily produce variations in color.

Additionally, different exposure conditions, sun versus shade, produce different rates of drying which can result in different final colors.

Proper curing is required to deliver a consistent finish.

Prior to the project discuss with the owner the options for maintaining their colored concrete. It is easy to keep the beauty of the colored concrete for many years with the proper use of sealers. There are tinted sealers and other products available to restore and repair the appearance of colored concrete.

Integral colored concrete, in the hands of a skilled craftsman, can provide a beautiful and dramatic structure whose appearance can be enjoyed for decades.

References:

Best practices in Decorative Concrete - Trowel Finished Integrally Colored Concrete. The Decorative Concrete Council of the American Society of Concrete Contractors

Ensuring the Quality of Colored Concrete Finishes – The Construction Specifier - December 1998, by Nick Paris and Michael Chusid.

A Contractor's Guide to Davis Colors – Davis Colord 3700 Olympic Blvd. Los Angeles, CA 90023

Appearance Requirements for Colored Concrete Slabs - Position Statement #1, The Decorative Concrete Council of the American Society of Concrete Contractors

Understanding Colored Concrete - Common problems, why they occur, and how to avoid in fix them. – By Chris Sullivan – The Concrete Network.com



Brought to you by:



Pennsylvania Aggregates and Concrete Association

Pennsylvania Aggregates and Concrete Association
2040 Linglestown Road, Suite 204, Harrisburg, PA 17110
Ph: 717-234-2603 Fax: 717-234-7030
Web: www.pacaweb.org www.specifyconcrete.org



Disclaimer: Pennsylvania Aggregates and Concrete Association is a trade association ("Association") organized under the Pennsylvania Nonprofit Corporation Law. The information provided here is intended solely for the continuing education of Qualified Professionals who are competent to evaluate the significance and limitations of the information provided and who accept total responsibility and liability for the accuracy of any application of the information contained in this publication. Others should obtain assistance from a Qualified Professional before proceeding. The Association and its members make no express or implied warranty with respect to the information contained herein or the accuracy thereof. They disclaim any product liability in connection with the publication or any information contained herein. The information is garnered from various publications reflecting current industry recommendations.