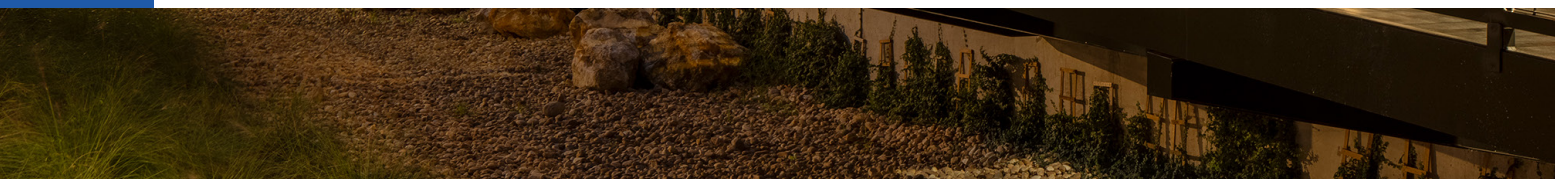




## INTEGRAL CONCRETE COLOR VS. CONCRETE STAIN

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01/2021





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## Colored Concrete - Basics



One of the oldest building materials known to civilization, concrete, has been used by humans since ancient Egypt. The Roman and Greek empires used concrete in some of their most impressive architectural feats, including the Colosseum, the Pantheon, and Tiryns' royal palace. Concrete's revolutionary ability to fit any shape and quickly harden maintained its popularity through the industrial era. It remains the most used building material in the world.

In the 1900s, concrete manufacturers began to experiment with stains and pigments to liven the traditional drab grayscale of concrete and improve its versatility. Colored concrete soon became popular in building homes, commercial and public buildings. Originally stained as whole castings, pigment color burst onto the market in the 1920s when Lynn Mason Scofield produced a product that could be mixed into dry concrete powder, providing color throughout using a much simpler methodology. In the 1970s, colored cement overlays were used to apply color to existing concrete after being poured, offering further flexibility to designers and contractors. Today, it continues to be the most accessible way to bring your construction or renovation vision to life.





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## How is Concrete Colored?



The coloring process of concrete can be accomplished either through paints, stains, or Integral Concrete Color. However, as paint brittles over time and may expose the underlying concrete through age or environmental damage, Integral Concrete Color and staining remain the most effective concrete coloring solutions. These two solutions are similar in concept but vary in their real-world application and overall effectiveness across projects. Integral Concrete Color will color the concrete before pouring, whereas concrete staining colors the concrete after pouring.

## Colored Concrete Uses

Colored concrete can be used for various building projects: patios, stairs, pathways, driveways, kitchen floors, basements, garages, backyard features, and garden walls. Commercial buildings, in particular, see a great benefit aesthetically from colored concrete. It can also be used for indoor and outdoor projects. The wide range of colors, textures, and patterns created with colored concrete offer near-unlimited possibilities for your design at a much lower cost than other building materials such as marble, tile, or wood. It is crucial to know each coloring method's benefits and limitations to decide which concrete coloring technique is the best fit for your project.



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## Integral Concrete Color – Basics



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Integral Concrete Color is created by premixing dry, liquid, or granular iron oxide pigments with gray or white concrete to achieve the desired color. The colored concrete is then poured and cured.

Integral Concrete Color comes in pastels and earth tones and is limited to yellow, black, orange-toned red, blue-toned red, white, green, and blue, with the last three colors priced at a much higher premium due to their relative rarity. Finding the exact hue you desire using Integral Concrete Color can be difficult as the spectrum of color options is minimal. The varying base color of concrete will also impact your ability to find your perfect color.

The differing shades of gray from batch to batch can affect color consistency on larger projects, and for a lighter final color, white cement must be used at a much higher cost than its gray counterpart.

However, if you find a color that suits you, Integral Concrete Color will give you a long-lasting finished product, requiring low maintenance. Because the color is throughout the concrete, chips and scratches do not discolor this building material; they are consistent through wear and tear for years.



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## Integral Concrete Color – Facts to Consider

Integral Concrete Color has some specific drawbacks which limit the versatility of this method of coloring. It can only be used on new concrete projects and cannot be used on cement-based overlays. This style also limits your artistic options for design because the colors are less intense, and there are very few color options.

Since the color is premixed, projects using Integral Concrete Color often involve a clean-out fee for the mixer on top of your pouring costs, ranging from \$8-\$25 per square foot on average and depending on the color and pattern chosen. Inconsistent concrete curing will affect color consistency and require the concrete to be ripped up and poured again if it does not set the first time correctly.

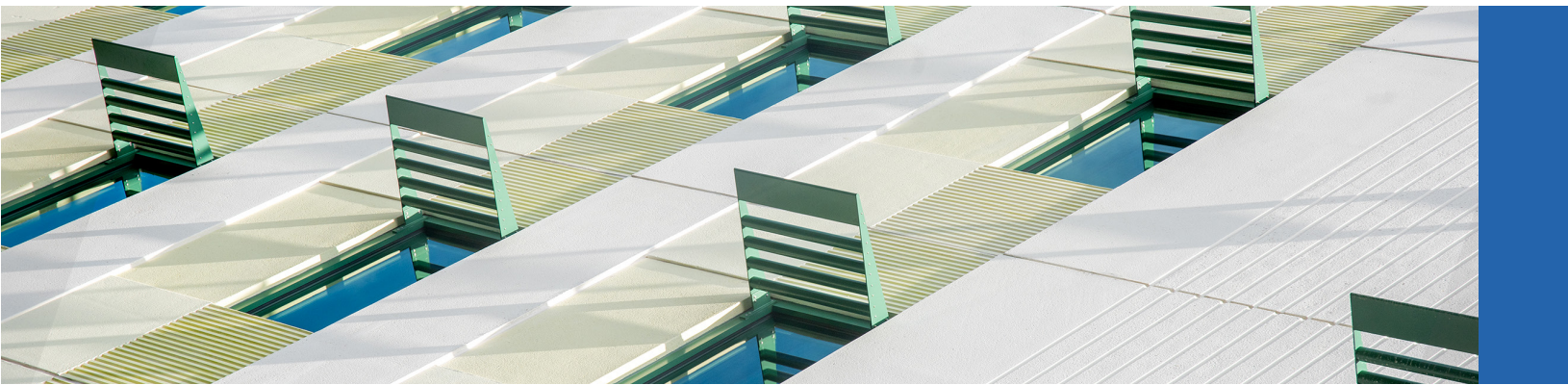
While the longevity of Integral Concrete Color is admirable, and scratches are obscured by the integrated color, the pigments used only bind with cement. Chipping will often show uncolored sand and gravel underneath the surface, and a larger piece breaking off will result in the discoloration of your design. These chips are incredibly costly to fix, and it is not easy to find matching colors once your initial project has been completed.



Photo Credits: CPCI

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## Nawkaw's Concrete Stains - Basics



To stain concrete, iron oxide pigments are added to the concrete mixture in varying proportions. The smaller iron oxide pigment particles bind to the larger cement particles and coat them thoroughly, thus changing the concrete's overall color.

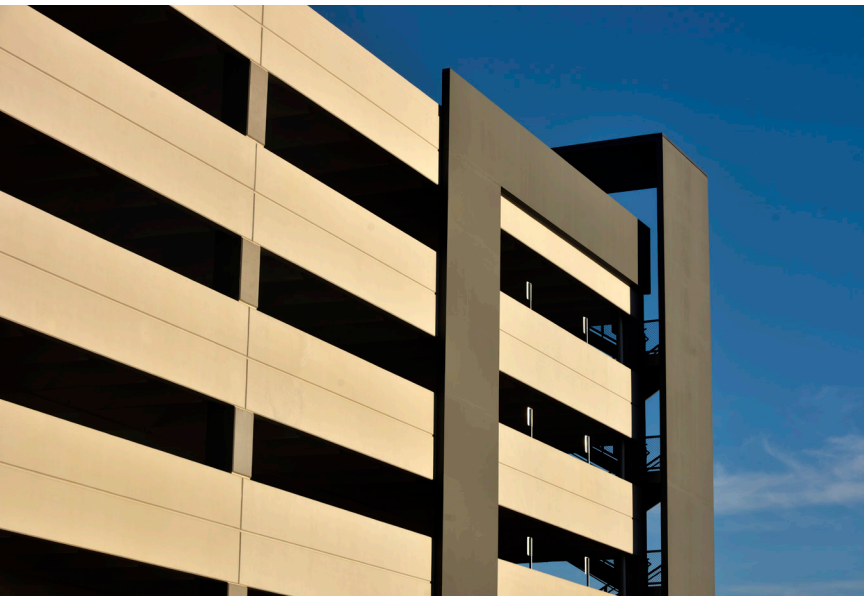
In contrast to Integral Concrete Color, Nawkaw's concrete stains are applied after the concrete is poured. There are many benefits to this technique of concrete coloring. The color is applied using a water-based stain that chemically bonds with the concrete, creating a robust layer of color that strengthens the substrate. The subsequently increased density reinforces the concrete's surface, and the decreased water permeation provided by the stain reduces freeze-thaw damage while preventing microbial growths like mold and mildew. These stains are also very durable and resistant to abrasion. If chipping does occur, patching is a straightforward process. Since Nawkaw stores all custom color formulas in a database, matching the surface's color is effortless. As a result, Nawkaw's concrete stains offer long-lasting aesthetic benefits and increased durability to concrete, backed by many years of research. The added density, which strengthens the concrete, and the protection from water permeation provided by the stain will increase your concrete's lifespan and give it the perfect visual appeal.

Nawkaw's concrete stains, paired with our innovative application techniques, offer significantly more artistic flexibility and allow for much more individuality in your project. Stains can be applied to existing concrete and cement-based overlays and come in a more extensive range of crisper and more vibrant colors than Integral Concrete Color. We produce our stains in-house and the color choices are virtually endless. Furthermore, beautiful architectural finishes can be created by using form liners and applying a range of colors to the facade, opening the doors to unlimited design possibilities. Our most prestigious architectural work includes mimicking the looks of stone, brick, wood, and tile that produce very realistic results. Nawkaw's concrete stains, with their quality and versatility, are ideal for new construction projects and renovations alike. They can be matched to your specific vision and bring a lot more to the table than just aesthetics so that you can enjoy your completed project for years to come.



## Nawkaw's Product Line – A Stain for Every Project

Each project has different requirements. Therefore, our Sales Representatives will consult with you and ensure the right stain from our product line is used. Nawkaw products are environmentally friendly, water-based, non-hazardous, non-flammable, and have very low to no volatile organic compounds, making them a safe option. Our product line also helps your project qualify for LEED credits.



NawTone is an acrylic stain that comes in a wide variety of colors. It is durable, resistant to damage, and can be applied to an extensive range of surfaces. It is ideal for new construction, renovation, restoration, preservation, and is UV resistant, lightfast, aspiratory, quick-drying, weather-resistant, mold and mildew resistant, penetrating, and durable. If your area sees a lot of rainfall, NawTone+Plus with built-in water repellency is a perfect choice. For a gloss finish, NawTone-G is the superior option.

NawTone-K is a mineral stain that binds directly with the substrate, making it an excellent choice for precast and tilt-up projects. This mineral stain is a popular option because the stain's chemical bond creates an incredibly durable coating with a much longer lifespan than other coloring methods such as painting. As with all Nawkaw concrete stains, it can be customized to your preferred color. It is UV resistant, lightfast, aspiratory, quick-drying, odorless, weather-resistant, mold and mildew resistant, penetrating, and durable. It is also available as a non-tarnishing metallic stain and a fully opaque stain to suit any project's needs.





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Though there are different ways to color concrete, Nawkaw's concrete stains provide the most versatility with its range of high-quality staining products, paired with innovative application techniques. Nawkaw's concrete stains revitalize and strengthen existing concrete structures while giving you the ability to bring your creative visions to life.

The flexibility of application techniques, combined with scientifically advanced, high-quality stains, makes Nawkaw the perfect choice to express your individuality as you construct, renovate, restore, or preserve your home or community. With Nawkaw's concrete stains and services, you are only one step away from making your dreams concrete!







# Nawkaw®

ARCHITECTURAL FINISHES INSPIRED BY **ART & SCIENCE**

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