

# CDR BULLETIN

## COLORED CONCRETE

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Colored concrete for decorative slabs is becoming very popular in residential construction. When placed, finished and cured properly the results can be stunning, though a successful colored concrete project does require a higher level of care and experience than standard concrete.

Integrally colored concrete where the color is in the mix is commonly used for exterior applications such as patios, walks and driveways. The color is uniform throughout the thickness of the placed concrete. Alternatively, concrete staining is often performed on interior concrete finishes to produce rich and vibrant colors with intricate patterns. Chemical stains are applied to cured concrete finishes and color the top surface. Here we will focus on integrally colored concrete as construction means and methods vary greatly from chemical stained concrete.

Color variations are the most telling problems for customers, though proper construction practices will minimize these differences. Concrete is a natural material and similar to wood and stone, variations in appearance are expected.

Water is a key factor for maintaining consistent color throughout a project. Varying amounts of water in the mix will greatly influence the finish color. Adding water to the mix at the site is a recipe for disaster. Uneven moisture levels at the sub-grade during placement will also affect the concrete appearance with blotchy color variations. During finishing and curing operations, do not fog or spray water on the slab. This will cause the surface to pale or discolor.

Additional care must be taken when finishing colored concrete. Wood bull floats and darbies are best, not magnesium. Steel tools tend to darken the surfaces so hard trowel finishes are not recommended.

Textured finishes such as a broom finish tend to produce the best color uniformity.

Curing of colored concrete is often neglected and greatly impacts the overall project appearance. Uneven curing results in uneven drying and causes color variations. Colored concrete should always be cured with a curing compound designed specifically for colored concrete. Plastic sheet coverings should not be used as discoloration occurs where the sheet is in direct contact with the concrete. The concrete will continue to lighten in color until it is fully cured, at least 30 days. A sealer compatible with colored concrete should be applied after curing to protect against water penetration and the occurrence of efflorescence. Applying a sealer too early may trap moisture in the top surface layer of the concrete and create a blotchy appearance in the color.

Weather conditions will also play an important role for colored concrete placement. Hot or windy conditions may cause premature drying and color variations. Rain on the slab may cause a mottled appearance. For multiple concrete placements it is best to schedule the work during similar weather conditions.

If unacceptable discoloration does occur, acid washing or sandblasting the concrete surface may improve the uniformity of the color. Prevention is the best cure and discoloration problems can be avoided with adequate planning and understanding. Customers would be wise to visit a concrete contractor's prior project to observe finish results and discuss expectations for their own project.

