



CURECRETE DISTRIBUTION, INC.

Technical Services

Bulletin No. 11, Revision 3

09-16-2002

THE ASHFORD FORMULA AND COLORED CONCRETE

According to the American Concrete Institute, concrete may be colored in any of four different ways:

1. Applying stains or paints to the hardened surface.
2. Applying a prepared pigment mixture to the surface before the final floating and troweling (Dry-shake method.)
3. Integrally coloring the concrete at the batch plant using a pigmented admixture.
4. Placing an integrally colored concrete layer on an uncolored base slab.

A concrete surface that has been treated with The Ashford Formula will provide a stable, denser surface that is more resistant to moisture migration while actually enhancing the adhesion of epoxy paints. However, paint must not be applied prior to The Ashford Formula, as it will prevent it from penetrating into the surface and chemically react within the concrete.

Concrete staining is accomplished by either applying colored acrylics or mineral salts to its surface. The Ashford Formula should not be used with colored acrylics as these products are colored coatings and they leave a film on the surface that blocks the penetration of The Ashford Formula.

Mineral salt stains are actually chemical stains drawn into the concrete by means of an inhibited acid. Once these stains react with the concrete, they create very subtle, natural colors (i.e. browns and reds look much like the color of rust. Greens look much like oxidized copper, etc.) These types of stain can be used with The Ashford Formula, because they do not prevent it from penetrating.

Normally, stains must be applied to concrete surfaces that have cured at least 21 days from the time of placement (Follow the manufacturer installation specifications closely.) The Ashford Formula can consequently be applied, but the following precautions *must be closely observed* (**See the note at the end of this bulletin**):

- a) The floor should be thoroughly scrubbed with a high pH (>10) detergent to neutralize the surface.
- b) Any residue of The Ashford Formula must be *thoroughly flushed with large volumes of water* following the application procedure.
- c) Standing water on the concrete slab must not be allowed to dry on its own; rather, *it must be thoroughly removed as soon as possible by way of a vacuum*.

NOTE: *Deviation from any of the above mentioned steps may produce a surface blotched by unsightly white staining that will be difficult to remove.*

With reference to method two through four, The Ashford Formula may be used only if special guidelines are closely followed. Shake-on coloring systems consist of specially graded silica sand or

fine aggregate, portland cement, and a color pigment. These products are normally applied after the surface of new concrete has been initially floated by either power or hand float. Two-thirds of the material is shaken on, and is floated as soon as it begins to absorb moisture from the concrete.

The balance of the material is then added and distributed at right angles to the direction of the first application, floated into the surface, and troweled (ACI, Slabs on Grade, 1994, Second Edition, p.70.)

Concrete may also be colored at the batch plant before placement. This is normally done with pigments made of mineral oxides, either natural or synthetic. This means that the entire batch of concrete is colored throughout.

The Ashford Formula should not be applied until after the concrete has cured for 28 days. Color manufacturers recommend using an ASTM C309 membrane cure not a wet cure for integral or shake-on colored concrete. **(See the note at the end of this bulletin)**

If however the Ashford Formula must be applied prior to 28 days the following precautions must be closely observed:

- a) Ensure that the entire surface is kept wet with The Ashford Formula during application.
- b) Any residue of The Ashford Formula must be thoroughly flushed with large volumes of water following the application procedure.
- c) Standing water on the concrete slab must not be allowed to dry on its own; rather, it must be thoroughly removed as soon as possible by way of a vacuum.
- d) Repeat steps b & c, a minimum of three times without allowing the slab to dry out between flushings.

NOTE: Deviation from any of the above mentioned steps may produce a surface blotched by unsightly white staining that will be difficult to remove.

NOTE:

WE STRONGLY RECOMMEND THAT THE ASHFORD FORMULA NOT BE INSTALLED ON COLORED CONCRETE PRIOR TO 28 DAYS FROM THE TIME OF PLACEMENT. IF INSTALLED PRIOR TO 28 DAYS ONLY A FACTORY CERTIFIED APPLICATOR SHOULD BE USED TO CARRY OUT THE APPLICATION.

During the curing process of concrete, when the water and cement are still actively reacting, there is a pronounced tendency for alkalis and salts to become more visible on a colored concrete surface that has been treated with The Ashford Formula. An incorrect preparation and application may produce a surface blotched by unsightly white staining that will be difficult to remove.