

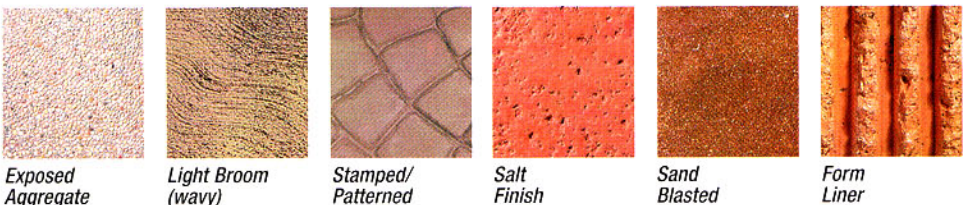
MIX-IN COLORS FOR CONCRETE

Uses: Your concrete producer now uses Hydrotint® Liquid Pigments supplied by Grace Construction Products. Liquid pigments are suitable for integrally colored concrete driveways, pool decks, patios and walkways. Hydrotint can also be added to precast, prestressed, tilt-up and a variety of other applications to create aesthetically pleasing colored concrete.

Ingredients: Your concrete supplier combines four or five primary colors of Hydrotint Liquid Pigments using a state-of-the-art automatic dosing system (the Chameleon™) to make a wide spectrum of colors available directly from the concrete mixing plant. All Hydrotint Liquid Pigments are made from time-tested and proven iron oxide, a colorant that has a long successful history of use in concrete. Some concrete suppliers also use Hydrotint Carbon Black A8090, to make selected dark gray shades and black concrete. A8090 is the highest in tint strength and the most economical black, but can fade over a period of years if concrete is not sealed against water penetration. Sealing and re-sealing can minimize this effect.

Installation: Integrally colored concrete is installed the same way as high quality uncolored concrete. Choose a color on the inside of this color card and specify it by name. Create a custom color by using the Concrete Palette™. Confirm desired results with a fully-cured job-site test panel. Typical dose rates range from 1/2 to 7 lbs. per 94 lbs. of cement content and should never exceed 10% of cement content. Cement content includes portland cement, fly ash, silica fume, lime and other cementitious materials but does not include aggregate or sand. Hydrotint Liquid Pigments have been used successfully in a wide variety of mix designs. The only known incompatibility is with calcium chloride set accelerator, which causes blotching and discoloration. Carbon Black reduces or negates the effect of air-entraining admixtures. With air-entrained concrete, iron oxide black should be used instead of the Carbon Black A8090.

Finishes: Paving and floors can be finished with pattern-stamped, broomed, troweled, exposed aggregate, salt-finished, sand-blasted, or many other visually appealing textures. Cast-in-place, precast and tilt-up structures can be textured with sand-blasting, bushhammering, grinding, polishing, special forms or form liners. The combinations and possibilities are endless. Here are just a few:



Curing & Sealing: It is recommended to use a non-clouding, spray-on cure and sealer that meets or exceeds ASTM C309 standards and is specially formulated for colored concrete and exposed aggregate finishes. Other curing methods, such as water curing or plastic sheets cause discoloration.

Quality Tips: For best results; materials, curing, weather conditions and workmanship should be uniform throughout a project. Quality starts with the concrete mix; use a low water-content, high-performance mix design. When planning a project, budget for craftsmanship.

Consumer Advice: Contractors are independently owned and operated without affiliation to W.R. Grace & Co. - Conn. or Davis Colors. Choose a licensed and qualified contractor who provides written information and example projects you can see before you buy. Check the yellow pages, ask your local ready mix or building material dealer or visit www.concreteconnection.com to find contractors who specialize in colored concrete.

Specify Hydrotint:

For additional information contact:



Visit our web site at: www.graceconstruction.com

W. R. Grace & Co.-Conn., 62 Whittemore Avenue Cambridge, MA 02140

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Color - 01A

Printed in U.S.A. 12/04

GCS/DCI/10M



Mixing Guide:

Use the same pigment-to-cement ratio, type and brand of cement and aggregates throughout project. Changes in cement and aggregate color affect final color.

Keep slump less than 5" (12.5 cm) and water content consistent. High water content causes concrete to appear pale or "faded". If higher slump is required, use a Grace water reducing admixture instead of added water.

Calcium Chloride set-accelerator causes discoloration; Do not use with colored concrete.

Specify air content of 5% to 7% with Grace Air Entraining Agents for improved workability and long-term durability in freeze/thaw climates.

Schedule loads for consistent mix times. Deliver and discharge in less than 1 1/2 hours. Clean mixer thoroughly between color change-overs.

Add Hydrotint Liquid Pigments to the concrete batch and mix at charging speed for at least 5 minutes.

The Chameleon is a computer-controlled color dosing system for Ready Mix operators distributed exclusively by Grace. It improves color accuracy and availability. For more information, contact your local Grace Representative or call 1-877-4AD-MIX1.

Contractor's Guide:

Prepare a well-drained subgrade. Add a 2 to 3 inch (50 to 75 mm) layer of sand, gravel or crushed stone. Uniformly compact the subgrade and moisten evenly leaving no puddles, standing water, ice, frost, or muddy areas.

Position forms for uniform slab thickness. Follow American Concrete Institute standards for reinforcement, vapor barriers and joint placement to control cracking.

Allow ample time and manpower for placement and finish work. Finish evenly and with care.

Begin troweling after bleed water evaporates. Late or hard troweling and edging causes "burns" or dark spots.

Water added at job-site to mixer or pumps will cause color to pale. Keep additions to a bare minimum and consistent among loads. Don't wet finishing tools or brooms or sprinkle water on the surface.

Do not sprinkle pigment or cement onto the surface.

Rotary, dry-broom or rough finishes usually cure more even-colored than smooth-troweled finishes.

Uneven curing=uneven drying=uneven color. Cure colored concrete with an approved curing and sealing compound specifically formulated for colored concrete.

Do not use plastic sheets, water curing or curing products which discolor. Wood and other objects left on curing concrete cause discoloration.

Efflorescence is a white powdery substance that appears on concrete surfaces. A result of water evaporation, it is more noticeable on colored surfaces making them look faded or lighter in color when not cleaned off. Proper curing and protection against water penetration reduces tendency for efflorescence to occur. Remove with detergent or mild-acid cleaners formulated to remove efflorescence. Follow cleaner instructions and test in a small area to make sure cleaner will not etch or discolor the surface. Wear rubber gloves and eye protection.

CONCRETE COLOR SELECTOR



Colors for Concrete

Hydrotint® liquid pigments enhance the appearance and value of a variety of residential and commercial projects. Liquid color mixed into ordinary gray concrete transforms it into a unique design tool that is finding new uses every day.

Typical projects containing Hydrotint liquid pigments are colored concrete drive-ways, walkways and patios. From intense premium colors to subtle shades,

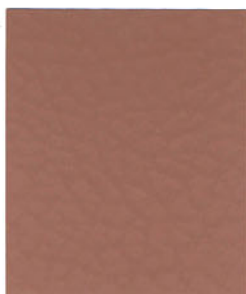
Hydrotint provides style and color for any budget. Contact your local concrete supplier today and specify your Hydrotint color by name.



SANDSTONE



CANYON



SANTA FE



MOCHA



RUSTIC BROWN



SAN DIEGO BUFF



SUNSET ROSE



BAJA RED



TERRA COTTA



SPANISH GOLD



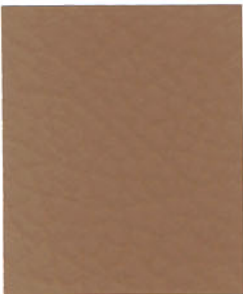
PEBBLE



DUNE



OUTBACK



SEQUOIA SAND



YOSEMITE BROWN



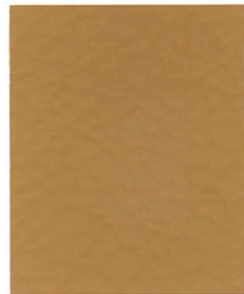
SOUTHERN BLUSH



SALMON



MESA BUFF



PALOMINO



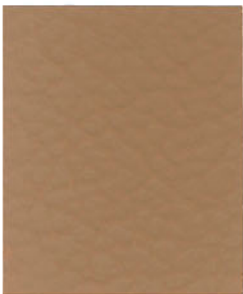
FLAGSTONE BROWN



SILVERSMOKE



LIGHT GRAY



OMAHA TAN



HARVEST GOLD



MESQUITE



TAUPE



SIERRA



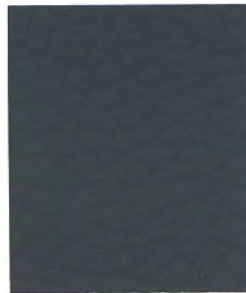
ADOBE



KAHLUA



◀ **Concrete Base Color**
The natural base color of concrete, finishing and curing method determines final color. This card simulates lab samples made with a light broom finish from Type II gray cement, sand and water at 0.56 water/cement ratio for a 4" slump (see uncolored reference at left). Different cements, sand, rock, mixing and job-site conditions and contractor technique can alter color from this card. Concrete is produced from natural materials. Surface variation common to uncolored concrete can impact colored concrete.



DARK GRAY



BAYOU



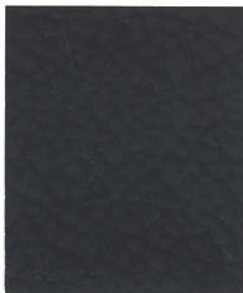
COCOA



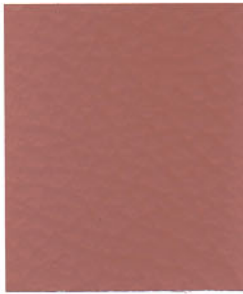
PEWTER



COBBLESTONE



GRAPHITE



SANGRIA



TILE RED



BRICK RED



Color samples are for reference only. Finished product appearance may vary. Always have a sample produced with the actual materials that will be used for the project.