



PRODUCT DATA SHEET

SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete

A powdered fade-resistant concrete admixture used to create vibrant solar reflective colors that conform to LEED requirements for reducing the Urban Heat Island Effect

PRODUCT DESCRIPTION

SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete is a patented solar reflective concrete coloring admixture. Its unique composition can permanently develop deep vibrant solar reflective colors that will stay cool longer and have reduced maximum temperatures than colors made from traditional technologies. Specified Colors made from SOLACHROME Integral Coloring Treatment can exceed the LEED v4 building material Solar Reflectance (SR) requirement of 0.33 or greater. This can allow colored concrete to contribute to earning LEED credits in the Heat Island Reduction category: Non-Roof for all BD+C categories.

USES

SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete can be used to color cast-in-place, precast, and dry-cast concrete floor slabs, walls, steps, sidewalks, curbs, columns, arches, blocks, pavers, and other decorative objects.

CHARACTERISTICS / ADVANTAGES

SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete adds infrared light reflective color that is weather resistant, UV Stable, lightfast, and alkali resistant. It contains no materials that initiate, accelerate, or promote the corrosion of steel, coated metal, plastic, or rubber concrete reinforcements. It will not migrate from standing water, and can safely color concrete fountains, pools, water features, or concrete that will be polished and encounter damp or wet environments.

New Easy-Dose™ technology allows a single pail to accurately color mixes that contain 5 to 7 sacks of cement per yard of concrete.

APPROVALS / STANDARDS

All pigments used conform to the requirements of *ASTM C 979 Pigments for Integrally Colored Concrete*. Specified Colors can exceed the LEED v4 building material Solar Reflectance (SR) requirement of 0.33 or greater. This can allow colored concrete to contribute to earning LEED credits in the Heat Island Reduction category: Non-Roof for all BD+C categories.

PRODUCT INFORMATION

Chemical Base	Infrared reflective mixed metal oxide pigments.
Packaging	Packaged in five-gallon pails designed to color one yard of concrete.

Appearance / Color	Available in 14 standard pigment blends that can be mixed with either gray or white cement to produce 28 colors. See color chart SICT-CC for the entire range of standard colors their solar reflective values.
Shelf Life	2 years from date of manufacture.
Storage Conditions	Keep unopened, moisture free, and below 175°F (80°C).

TECHNICAL INFORMATION

Concreting Guidance	SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete is designed to have minimal effect on concrete plastic and hardened properties, and to minimally interact with other concrete admixtures. Additional water, about 5% of the SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete used, may be needed to compensate for water absorbed by the pigments. This amount of water will be less if water reducing admixtures are part of the mix design. As all chemical admixture interactions cannot be predicted, always test final mix designs with actual materials to be used, and perform a jobsite test sections as described later in this bulletin.
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APPLICATION INFORMATION

Recommended Dosage	Each five gallon pail of the new Easy-Dose™ technology is designed to color one yard of concrete containing five to seven 94-pound sacks of cement. (470–658 lbs or 213–300 kg of cement) Each pail will color one cubic meter of concrete with cement content between 213–300 kg. Concrete with higher cement content will require proportioned increases of SOLACHROME to achieve the intended color.
Mixing	<p>Preferred Use Procedures</p> <p>SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete can be introduced at any point in the concrete mixing process, as long as enough mixing and time is given for the color to reach an unchanging uniform appearance. Typically, this will take at least 5 minutes and 130 drum revolutions at mixing speed. Care must be taken to not allow material to hang on mixing vanes or collect in spaces where the mix has limited motion.</p>
Restrictions	Do not use with chloride based accelerators.

APPLICATION INSTRUCTIONS

Factors Influencing Final Color, Appearance, and Solar Reflective Properties

Colors represented on the SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete color chart SICT-CC depict samples of smooth finished concrete made with medium gray or white cement and cured with SCOFIELD® Cureseal-W™ Concrete Curing Compound and Sealer. The final color, appearance and

solar reflective values, (SR), obtained on the jobsite will be influenced by concrete composition, surface finishing technique, and curing compound/sealer selection.

Concrete composition variations that can impact color and SR, (solar reflectance), include cement type and color, aggregate selection, and the use of pozzolans such as slag or fly ash. Differences in sealer or curing compound type, such as water or solvent based, or if no sealer is used, can also influence final appearance and SR.

Finishing techniques will influence final concrete appearance. Different tools such as wood floats, magnesium trowels, hard steel trowels, brooms, and edging tools, will each influence color, surface texture, sealer penetration, and final cured concrete appearance differently. Do not change tool types once work has begun.

Changes in water content and water-to-cement ratio, both in the mix and on the concrete surface during finishing, can influence the final surface color. Mix designs that develop excessive bleed water can float non-uniform cement/pigment ratios, and cause uneven or weak coloring. Once mix designs are established, do not add water to alter concrete plastic properties.

Do not add water to loosen partially cured loads. Do not use “watering” sprinklers as colored concrete cures, or use wet brooms and tools while finishing. Any of these will likely result in inconsistent concrete color.

Placement and Finishing Tips

As freshly placed concrete cures, its color will vary with differences in surface moisture. Concrete curing in shaded areas or in the center of large slabs will surface dry slower than those exposed to sunlight or closer to form edges. This can cause color variations that will often fade with time. Avoid high salt aggregates that can cause efflorescence that can make color irregular. These visual differences can be long lasting, and raise questions about the quality of the concrete placement. Use SCOFIELD® Cureseal-W™ Concrete Curing Compound and Sealer to avoid these problems and deliver jobs that are uniform in color and appearance. Always evaluate composition and finishing techniques as described below.

Jobsite Test Sections

Prior to large scale production, the concrete or cementitious mix design for each color to be produced must be made. Conduct small scale testing to demonstrate concrete from the mix design meets all slump, flow, air content, compressive strength, and any other required concrete specifications.

Prior to general jobsite use, representative Jobsite Test Section(s) or “Mock-Ups” must be produced and approved for each individual concrete color mix design, surface finish/texture, and for each curing compound/sealer combination that will be created.

Use Jobsite Test Sections to verify entire system suitability including frame/mold and foundation preparation methods, surface concrete specification compliance, finishing techniques, safety procedures, and achieved performance of the fresh and fully cured concrete. When applicable, test completed systems for wet and dry slip resistance. Evaluate polishing or coating application techniques, final color, and visual appearance. Do not proceed with products, techniques, or finishing systems that do not meet required specifications or meet with site owner approval.

Selected Jobsite Test Sections should be in close proximity to the larger job area, and made from the same concrete mix design that will be used on the larger project. Test sections should be sized to be representative of the finished project, and be produced by the same workers who will perform the project installation.

AVAILABILITY/WARRANTY

Availability

SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete is marketed internationally through strategically located dealers, and representatives. Scofield offers a complete line of engineered systems for coloring, texturing, and improving performance of architectural concrete. These include coloring admixtures, color hardeners, colored cementitious toppings, stains, curing compounds, sealers, coatings, repair products and texturing tools. Visit the Scofield website at www.scofield.com for further information. This product may be covered by one or more of the following patents: US 7,815,728; US 8,366,824; US 8,157,910, 8,632,631 or Patent Pending.

BASIS OF PRODUCT DATA

Results may differ based upon statistical variations depending upon mixing methods and equipment, temperature, application methods, test methods, actual site conditions and curing conditions.

Solar Reflective Determinations

Solar Reflective values and determinations were performed using integrated sphere reflective spectroscopy as specified on the SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete color

card. Actual SR determinations may vary with alternate techniques and normal raw material variance.

OTHER RESTRICTIONS

See Legal Disclaimer.

ENVIRONMENTAL, HEALTH AND SAFETY

For further information and advice regarding transportation, handling, storage and disposal of chemical products, user should refer to the actual Safety Data Sheets containing physical, environmental, toxicological and other safety related data. User must read the current actual Safety Data Sheets before using any products. In case of an emergency, call CHEMTREC at 1-800-424-9300, International 703-527-3887.

LEGAL DISCLAIMER

- KEEP CONTAINER TIGHTLY CLOSED
- KEEP OUT OF REACH OF CHILDREN
- NOT FOR INTERNAL CONSUMPTION
- FOR INDUSTRIAL USE ONLY
- FOR PROFESSIONAL USE ONLY

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