



PRODUCT DATA SHEET

SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete

A POWDERED FADE-RESISTANT CONCRETE ADMIXTURE USED TO CREATE VIBRANT SOLAR REFLECTIVE COLOURS 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 colouring admixture. Its unique composition can permanently develop deep vibrant solar reflective colours that will stay cool longer and have reduced maximum temperatures than colours made from traditional technologies. Specified Colours made from SOLACHROME Integral Colouring Treatment can exceed the LEED v4 building material Solar Reflectance (SR) requirement of 0.33 or greater. This can allow coloured concrete to contribute to earning LEED credits in the Heat Island Reduction category: Non-Roof for all BD+C categories.

WHERE TO USE

SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete can be used to colour 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 colour 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 colour 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 colour mixes that contain 213-300 kg/cementitious per m³ of concrete.

APPROVALS / CERTIFICATES

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

PRODUCT INFORMATION

Composition / Manufacturing	Infrared reflective mixed metal oxide pigments.
Packaging	Packaged in 18.9 L (five-gallon) pails designed to colour 1 m ³ of concrete.
Appearance / Colour	Available in 14 standard pigment blends that can be mixed with either grey or

white cement to produce 28 colours. See colour chart for the entire range of standard colours their solar reflective values.

Shelf Life	2 years from date of manufacture.
Storage Conditions	Keep unopened, moisture free, and below 80°C (175°F).

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 18.9 L pail of the new Easy-Dose™ technology is designed to colour one m ³ of concrete containing 213–300 kg of cement. Concrete with higher cement content will require proportioned increases of SOLACHROME to achieve the intended colour.
Mixing	Preferred Use Procedures 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 colour 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.
Restrictions	Do not use with chloride based accelerators.

BASIS OF PRODUCT DATA

Product properties are typically averages, obtained under laboratory conditions. Reasonable variations can be expected on-site due to local factors, including environment, preparation, application, curing and test methods.

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



ENVIRONMENT, HEALTH & SAFETY

User must read the most recent corresponding Safety Data Sheets (SDS) before using any products. The SDS provides information and advice on the safe handling, storage and disposal of chemical products and contains physical, ecological, toxicological and other safety-related data.

APPLICATION INSTRUCTIONS

Factors Influencing Final Colour, Appearance, and Solar Reflective Properties

Colours represented on the SOLACHROME™ Integral Coloring Treatment for High-SRI Concrete colour chart SICT-CC depict samples of smooth finished concrete made with medium grey or white cement and cured with SCOFIELD® Cureseal-W™ Concrete Curing Compound and Sealer. The final colour, 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 colour and SR, (solar reflectance), include cement type and colour, 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 colour, 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 colour. Mix designs that develop excessive bleed water can float non-uniform cement/pigment ratios, and cause uneven or weak colouring. 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 coloured concrete cures, or use wet brooms and tools while finishing. Any of these will likely result in inconsistent concrete colour.

Placement and Finishing Tips

As freshly placed concrete cures, its colour 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 colour variations that will often fade with time. Avoid high salt aggregates that can cause efflorescence that can make colour 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 colour 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 colour 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 colour 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 colour, 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.

LOCAL RESTRICTIONS

Note that as a result of specific local regulations the declared data and recommended uses for this product may vary from country to country. Consult the local Product Data Sheet for exact product data and uses.

LEGAL NOTES

The information, and in particular, the recommendations relating to the application and end-use of Sika products, are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. In practice, the differences in materials, substrates and actual site conditions are such that no warranty in respect of merchantability or of fitness for a particular purpose, nor any liability arising out of any legal relationship whatsoever, can be inferred either from this information, or from any recommendations, or from any other advice offered. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. The proprietary rights of third parties must be observed. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request or may be downloaded from our website at: www.sika.ca

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