

PRODUCT DATA SHEET

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CONCRETE TOPICAL TREATMENTS

SCOFIELD® Formula One™ Lithium Densifier MP

CHEMICALLY REACTIVE, SURFACE DENSIFIER AND SEALER FOR CONCRETE

Description SCOFIELD® Formula One™ Lithium Densifier MP is a cost-effective treatment that will extend the nominal service life of concrete floors and reduce ongoing floor maintenance costs. It is a penetrating, chemically reactive, VOC-free, semi-transparent liquid applied to new or existing, interior architectural and industrial concrete surfaces to increase surface density, reduce dusting and improve overall surface durability. It is also commonly used during polishing operations to prepare and enhance cementitious surfaces for high gloss diamond polishing. SCOFIELD® Formula One™ Lithium Densifier MP is specifically formulated for use with SCOFIELD® Formula One™ Liquid Dye Concentrate and SCOFIELD Formula One Guard W as part of a three step process to add colour to the plain interior concrete floors.

Where to Use

- Schools, colleges and universities
- Hospitals and healthcare facilities
- Warehouses and industrial plants
- Showrooms, retail stores and shopping malls
- Restaurants and entertainment complexes
- Commercial offices and government buildings
- Residential buildings

Advantages

- Reduces permeability to liquids, while allowing the surface to breathe
- Economical product that is easy to apply
- Penetrates and reacts within the concrete pores to seal the surface; does not produce a surface film that can peel
- Product does not contain sodium silicate or potassium silicate; will not leave a whitish surface bloom characteristic of none architectural silicate products
- Provides longer life and higher reflectivity for ground and polished concrete of all grades and classes
- Can be diluted on-site with water according to the porosity of the substrate
- Creates aesthetic, environmentally sound and easy to maintain surfaces
- Meets the requirements of CFIA and USDA for use in food plants

Technical Data

Packaging

18.9 L (5 US gal.) pail

208 L (55 US gal.) drum

Colour Yield

Semi-transparent

5 – 10 m²/L (200 – 400 ft²/US gal.) - undiluted - for steel trowelled, normally porous concrete or concrete ground to a 80 – 200 grit surface profile.

Note: SCOFIELD® Formula One™ Lithium Densifier MP may be diluted with clean water up to a ratio of 1:1 when treating high-quality, hard, dense, steel trowelled concrete floors. Porous or low-quality floors, or floors whose characteristics are not known, should be treated with the densifier applied at full strength.

Shelf Life

2 years from date of manufacture in original, unopened containers. Store product in warehouse conditions, off the ground, at temperatures between 4 and 37 °C (40 and 100 °F). Close containers after use, then use remaining product within 1 month. Protect from freezing. If frozen, the product must be discarded.

Mix Ratio

Suggested Dilution Rates

Concrete Hardness	Metal Bond Matrix Diamond	Dilution Ratio - Densifier: Water
Soft	Hard	Undiluted
Medium	Medium	1.0 : 0.5
Hard	Soft	1.0 : 1.0

Note: Sika Canada recommends the above dilution rates must be verified by producing a job site mock-up.

Properties at 23 °C (73 °F) and 50 % R.H.

Abrasion Resistance ASTM D4060

Taber Abraser H-22 wheel 1000 g (2.2 lb)

/1000 cycles

* 20 – 50 % increase in abrasion resistance

Elcometer pull-off adhesion ASTM D7234

* 25 – 75 % increase in bond strength

Rebound # Compressive ASTM C805

* 10 – 30 % increase in compressive strength

Artificial weathering, UV

G-154, 1000 h, 4/cond, 8/UV

No change in colour or appearance

Specular Gloss ASTM D523

30 – 40 gloss units at 800 grit

VOC Content

2.59 g/L

Chemical Resistance

Consult Sika Canada

*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. *Test Result compared to untreated control*

HOW TO USE

Surface Preparation	The concrete surface must be clean and sound. Remove any dust, laitance, grease, oil, dirt, curing agents, impregnations, wax, foreign matters, coatings and disintegrated material from surface that will reduce or prevent penetration. For optimum performance, SCOFIELD® Formula One™ Lithium Densifier MP should only be applied to fully cured concrete that is a minimum of 28 days old to allow for adequate penetration and reaction within the surface. Wet or green concrete should be allowed to dry adequately prior to application of the densifier so that pores near the surface are not filled with water that can limit product penetration. During cooler temperatures or higher relative humidity conditions, the drying interval should be increased to achieve the level of dryness necessary for good penetration.
	Polished Concrete: Grind the concrete to an initial surface profile (80 – 200 grit) prior to the application of SCOFIELD® Formula One™ Lithium Densifier MP. If wet grinding, clean and allowed surface to dry prior to application of the densifier. Concrete substrates that are contaminated with oil, grease or other substances after grinding to the initial surface profile (80 – 200 grit) should be thoroughly cleaned and allowed to dry before continuing.
	NOTE: <i>SCOFIELD® Formula One™ Lithium Densifier MP is highly alkaline and can react with glass and aluminum; surrounding areas and adjacent surfaces should be adequately masked or protected from overspray, and spills.</i>
Application	Apply SCOFIELD® Formula One™ Lithium Densifier MP at the appropriate dilution and coverage rate, based on concrete hardness characteristics (<i>refer to Technical Data - Yield Section of this product data sheet</i>) Stir well prior to use, ensuring thorough agitation and distribution of any settled materials throughout the liquid. Apply a uniform coat using a professional grade pump-type sprayer equipped with a fan tip. Airless sprayers must not be used. Alternatively a “spill-and-spread” methods, using a soft polystyrene or nylon bristles push broom, can also be used. NOTE: <i>Extreme caution must be exercised while working with SCOFIELD® Formula One™ Lithium Densifier MP because it can create a slippery floor surface during application.</i> After the proper amount is applied, brush the surface with a soft polystyrene or nylon bristles push broom or rotary floor machine equipped with a soft-polymer-bristled brush or pad. Allow the densifier to remain on the surface for at least 30 minutes. Add more densifier as needed to maintain a wet film approximately 1 to 3 mils thick during this period. Adjust the application rate to provide a wet layer on the surface. If the applied material soaks in quickly, additional material should be applied until the surface is flooded with a visible layer. As necessary during this 30 minute minimum penetration period, keep the surface from drying by reapplying the densifier to areas that start to lose the wet-film sheen. It is important to maintain the applied densifier in-place, in a fluid condition so that it can penetrate properly. Once the required treatment period is complete and the densifier has been on the concrete surface for at least 30 minutes, use a wet vacuum or auto-scrubber to remove excess material. The concrete surface must then be rinsed with fresh water unless additional grinding is intended. While rinsing, scrub the rinse water into the surface to remove any residue and then completely remove the rinse water with a wet vacuum before it dries. Additional water can be used to keep the excess material from drying during the removal process. If residual densifier is allowed to dry on the concrete surface it will leave unsightly deposits that can only be removed by mechanical means. The appearance of residue on the concrete surface after completion indicates that excess densifier was not removed. Allow the concrete treated with the densifier to dry thoroughly. Drying time will vary depending on relative humidity, temperature and air movement. Drying time could range from less than one hour to several hours. After drying is complete, the floor is ready for use or to continue the grinding and polishing process. To obtain additional hardening, allow the densifier to set overnight before continuing. Polished Concrete: After treatment, continue grinding, honing and polishing the treated concrete to the intended final finish profile (400 - 1500 grit) using progressively finer polishing disks. If wet polishing, remove the slurry residue between diamond changes using a wet vacuum or squeegee and rinse thoroughly, removing excess water and slurry. After the final finish profile is achieved, allow the polished concrete to dry completely prior to any further surface treatment.
Clean Up	Clean equipment thoroughly immediately after use and handling with soap and water. Close container after each use. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations. Do not reuse empty container. Before using or handling, read the Safety Data Sheet and Warranty.
Maintenance	Ground and polished concrete surfaces treated with SCOFIELD® Formula One™ Lithium Densifier MP are generally very durable and require little maintenance other than scheduled scrubbing with water and a neutral or alkaline cleaner. This recommended cleaning process provides water to hydrate the reactive components of the treatment and to further harden and cure the treated concrete. Spills should be cleaned up when they occur in accordance with good housekeeping practices. Do not use acidic cleaners or substances that may chemically attack and discolour the surface.

Limitations	<ul style="list-style-type: none"> ▪ SCOFIELD® Formula One™ Lithium Densifier MP is best installed by skilled and experienced applicators. Consult Sika Canada for advice and recommendations. ▪ Not a membrane-forming curing compound and does not conform to ASTM C309 requirements. It is not a substitute for proper curing procedures. ▪ SCOFIELD® Formula One™ Lithium Densifier MP is highly alkaline and can react with glass and aluminium. Such areas adjacent to the concrete to be treated should be protected adequately. ▪ Floors treated with SCOFIELD® Formula One™ Lithium Densifier MP should not be cleaned with or exposed to acidic cleaners or substances without further treatment because acid will cause discolouration on the treated concrete surface. ▪ Not designed to provide water or oil resistance to the concrete surface without further treatment. ▪ The appearance of residue on the concrete surface after completion indicates that excess SCOFIELD® Formula One™ Lithium Densifier MP was not removed. This residue can only be removed by mechanical means. ▪ When properly applied, SCOFIELD® Formula One™ Lithium Densifier MP will not significantly alter the surface texture of concrete. Treated concrete surfaces may develop a sheen, which may appear slightly darker than the original surface appearance. ▪ Sika strongly recommends that a job site mock-up be constructed on the actual substrate prior to general application to verify and approve suitability for appearance, stain resistance and traction values. Mock-up area must be of adequate size to be representative; be produced by the same workers who will apply the densifier and any companion products using the contemplated water dilution rate and grinding and polishing equipment and techniques. All test sections must be prepared and treated as specified to verify and approve the suitability of the product for its intended purpose. ▪ Adequate provision should be made by the client throughout the selection and installation process to ensure the finished surface texture meets the end user's wet and dry traction requirements.
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Health and Safety Information	For information and advice on the safe handling, storage and disposal of chemical products, users should refer to the most recent SAFETY DATA SHEET containing physical, ecological, toxicological and other safety-related data.
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**KEEP OUT OF REACH OF CHILDREN
FOR INDUSTRIAL USE ONLY**

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, within their shelflife. 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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