



SCOFIELD® Formula One™ Guard-S Concentrate

A penetrating, solvent-borne acrylic concentrate that is diluted with acetone and applied to interior ground and polished concrete floors in conjunction with SCOFIELD® Formula One™ Lithium Densifier MP and Liquid Dyes to provide increased gloss and protection from water and many staining materials.

TECH-DATA BULLETIN B-444.03

1 Product Description

SCOFIELD® Formula One™ Guard-S Concentrate is a VOC-compliant treatment that will extend the nominal service life of polished concrete floors and reduce floor maintenance costs by increasing their near-surface density. After proper dilution with acetone by the end user and application at recommended coverage rates, SCOFIELD Formula One Guard-S helps to fill the near-surface voids in interior concrete floors, providing a measure of protection against water and many staining materials such as ketchup, mustard, red wine, vinegar, motor oil and antifreeze. It also increases the reflectivity (gloss) of ground and polished concrete floors.

SCOFIELD Formula One Guard-S is designed for use on ground and polished concrete floors after treatment with SCOFIELD® Formula One™ Lithium Densifier MP and SCOFIELD® Formula One™ Liquid Dye to reduce porosity and to protect the surface by improving chemical resistance and gloss while reducing water permeability. On dyed concrete SCOFIELD Formula One Guard-S extends the life of the dye by restricting the movement of water in the near-surface zone of the concrete and reducing fading due to UV radiation. Refer to Scofield Tech-Data Bulletins B-424 SCOFIELD Formula One Lithium Densifier MP and A-434 SCOFIELD Formula One Liquid Dye Concentrate for product information and application instructions.

The stain repellency of floors treated with SCOFIELD Formula One Guard-S will develop over time; 72 hours is generally sufficient for this to take place, with stain resistance continuing to improve over several days. Reduced water permeability will typically develop over a period of 6 hours.

2 Coverage

The application rate of SCOFIELD Formula One Guard-S is determined by the porosity and profile of the concrete floor at the time of treatment. Two coats are required to achieve stain resistance. Depending on the porosity and profile, the coverage rate per application will typically vary from 300–400 square feet per gallon (7–10 m²/L) of diluted material.

3 Limitations

In concentrated and especially in diluted form, SCOFIELD Formula One Guard-S Concentrate is a flammable liquid, and proper precautions must be taken. Refer to section 6. *Cautions* for further information.

SCOFIELD Formula One Guard-S Concentrate will not perform as intended without proper dilution with acetone. Do not apply undiluted material to the concrete surface.

SCOFIELD Formula One Guard-S must be applied at temperatures between 45° F (7° C) and 85° F (29° C). When working in a structure open to the outside, do not apply during windy conditions.

Floors treated with SCOFIELD Formula One Guard-S should not be cleaned with or exposed to acidic cleaners, cleaners containing strong solvents, or highly alkaline cleaners.

For optimum performance, SCOFIELD Formula One Guard-S must only be applied to fully cured, dry concrete that is a minimum of 28 days old to allow for adequate penetration of the surface.

The porosity of concrete substrates can vary widely, and SCOFIELD Formula One Guard-S may not perform as expected on some surfaces, especially those that are extremely porous or damaged.

! DANGER!

ONCE SCOFIELD FORMULA ONE GUARD-S CONCENTRATE IS MIXED WITH ACETONE, THE MATERIAL WILL BE EXTREMELY FLAMMABLE AND MAY CAUSE FLASH FIRES. HARMFUL IF INHALED. KEEP AREA PROPERLY VENTILATED AND KEEP AWAY FROM HEAT, SPARKS OR OPEN FLAME. Material is extremely volatile and readily gives off vapors which may travel along the ground or be moved by ventilation and ignited by pilot lights, flames, sparks, heaters, smoking, electric motors, static discharge or other ignition sources at locations near the material handling point. Refer to the acetone manufacturer's Material Safety Data Sheet and Cautions Section for further health and safety information.

TEST SECTION

Treating ground and polished concrete flatwork takes skill and practice, and each concrete substrate is different. Prior to general application, a representative jobsite test section must be produced and approved on each individual concrete surface as described in section 8. *Jobsite Test Sections* to verify and approve suitability, proper surface preparation methods, application techniques, coverage, grinding and polishing procedures where applicable, resulting appearance, overall performance (including water and stain resistance where applicable), and wet and dry slip resistance.

4 Textures and Slip Resistance

When properly diluted and applied, SCOFIELD Formula One Guard-S will have minimal effect on the texture of concrete. The treated concrete surfaces will develop a shiny, almost wet look, which may appear darker than the original installation. After application of SCOFIELD Formula One Guard-S, the slip resistance (Coefficient of Friction) should be determined to ensure that it is within established safety guidelines.

For safety considerations, a representative jobsite test section as described in section 8. *Jobsite Test Sections* must be produced prior to SCOFIELD Formula One Guard-S application. The entire surface of the test section must be tested after completion to verify and approve the adequacy of wet and dry slip resistance.

5 Storage and Shelf Life

Under normal conditions and when kept indoors, off of the floor, and within a temperature range of 40–90° F (4–32° C), the nominal shelf life of SCOFIELD Formula One Guard-S Concentrate in unopened containers is 1 year from the date of purchase. Opened containers should be closed after use and then used within 1 month and must be discarded if the material becomes cloudy. Inventory must be rotated to maintain product that is within shelf life limits.



6 Cautions (After addition of Acetone)

DANGER!

EXTREMELY FLAMMABLE LIQUID AND VAPOR. HARM-FUL OR FATAL IF SWALLOWED. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.

Contains Acetone, Parachlorobenzotrifluoride, Aromatic Petroleum Distillates, Trimethylbenzene. Vapor harmful. May affect the brain or nervous system causing dizziness, headache or nausea. Causes eye, skin, nose and throat irritation. Repeated exposure may cause skin dryness or cracking. If swallowed, may be aspirated and cause lung damage. Harmful if swallowed.

NOTICE: Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage. Intentional misuse by deliberately concentrating and inhaling the contents may be harmful or fatal.

Keep away from heat, sparks and flame. Vapors may cause flash fire. Do not smoke. Extinguish all flames and pilot lights, and turn off stoves, heaters, electric motors and other sources of ignition during use and until all vapors are gone. Prevent build-up of vapors by opening all windows and doors to achieve cross-ventilation. Use only with adequate ventilation. Do not breathe vapors or spray mist. Ensure fresh air entry during application and drying. If you experience eye watering, headache or dizziness or if air monitoring demonstrates vapor/mist levels are above applicable limits, wear an appropriate, properly fitted respirator (NIOSH approved) during and after application. Follow respirator manufacturer's directions for respirator use. Avoid contact with eyes, skin and clothing. Do not eat, drink or smoke in areas where this material is used.

First Aid: Eyes—OBJECT IS TO FLUSH MATERIAL OUT IMMEDIATELY THEN GET MEDICAL ATTENTION. Flush IMMEDIATELY with lukewarm water while holding eyelids apart. Flushing within several seconds is essential to achieve maximum effectiveness. If physician is not immediately available, continue flushing with water. Ingestion—Do not induce vomiting. Vomiting will cause further damage to the throat. Give conscious victim 1 to 2 glasses of water. If spontaneous vomiting occurs, have victim lean forward with head down to avoid breathing in of vomitus, rinse mouth and administer more water. Contact local poison control center. Immediately transport victim to an emergency facility. Never give anything by mouth if victim is losing consciousness, or is unconscious or convulsing. Skin—Wash thoroughly with soap and water. Remove soiled clothing and footwear and wash before reuse. If irritation occurs, get medical attention. Inhalation—If breathing becomes difficult, leave the area to obtain fresh air. If continued difficulty is experienced, get medical attention immediately. If symptoms persist or develop or if ingested, get medical attention.

In Case of Fire: Use CO₂ or dry chemical extinguisher. Do not use water spray.

Contain spilled material and remove with inert absorbent using non-sparking tools. Dispose of contaminated absorbent, container, and unused contents in accordance with all applicable regulations.

Wash thoroughly immediately after handling. Close container after each use. If spilled, eliminate all sources of ignition. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations. Do not reuse empty container. Empty containers may contain hazardous product residues. Before using or handling, read the *Material Safety Data Sheet and Warranty*.

7 Packaging

SCOFIELD Formula One Guard-S Concentrate is packaged in 1-gallon (3.8 L) or 5-gallon (18.9 L) pails containing 0.3 gallons (1.1 L) or 1.5 gallons (5.7 L) of concentrate respectively. This allows for easy dilution with acetone by the end user to produce the ready-to-use material.

8 Jobsite Test Sections

To verify and approve suitability, appearance, and safety, representative test sections must be produced on the actual jobsite substrate prior to general application of SCOFIELD Formula One Guard-S. Test sections must be of adequate size to be representative, and be produced by the same workers who will apply the SCOFIELD Formula One Guard-S using the contemplated application or grinding and polishing equipment and techniques where applicable. All test sections must be prepared and treated as specified to verify and approve the suitability of the product for its intended purpose, including the adequacy of water and stain resistance and wet and dry slip resistance.

9 Applicable Standards

No ASTM specifications exist at this time covering this type of surface treatment for concrete. Typical test results for 28-day old concrete or mortar specimens treated with both SCOFIELD Formula One Lithium Densifier MP and SCOFIELD Formula One Guard-S, applied as directed by the appropriate Tech-Data Bulletin and compared to similar concrete or mortar control specimens of the same age and composition and tested at 56 days, are given in the table below.

10 Equipment for Preparation and Application

When using equipment and materials during preparation and installation, suitable protective gear must be worn and government regulations, manufacturer's instructions, and all applicable safety requirements must be followed.

For application acetone-resistant, pump-type sprayers, such as an SP Systems SP35ACT Sprayer equipped with a gray 8006 nozzle (available from SP Systems, 800-457-3440) must be used. Follow the equipment manufacturer's instructions. For burnishing the concrete after treatment with SCOFIELD Formula One Guard-S, use a high speed electric- or propane-powered burnisher equipped with a white burnishing pad and operating at 1500–3000 rpm.

Test results for laboratory specimens treated with SCOFIELD Formula One Lithium Densifier MP and SCOFIELD Formula One Guard-S compared to control specimens

ASTM Test Method	Property Measured	Test Result (*compared to untreated control)
D 4060, H-22, 1000 g, 1000 cyc	Taber Abrasion Resistance	* 20–50% increase in abrasion resistance
RILEM Tube Method	Water uptake	* 90–95% decrease in absorption
D 523, at 60° after burnishing	Specular Gloss	50–60 gloss units
C 1028, 400 grit finish, 400 sq ft/gallon, calibration with std. tiles	Static Coefficient of Friction, average of 12 tests	Wet surface — 0.55 Dry surface — 0.76
D 1308 Effect of Household Chemicals on Organic Finishes	Chemical exposure to vinegar, spot test covered, 73° F/50% RH	No effect at 1 hour, slight whitish stain at 4 hours



11 Substrate Preparation

All grinding must be completed prior to the application of SCOFIELD Formula One Guard-S. Allow wet concrete to dry thoroughly before applying so that the pores near the surface are not filled with water.

12 Mixing

Add approximately 0.4 gallons (1.5 L) of acetone to the 1-gallon (3.8 L) container or 2.0–2.5 gallons (7.5–9.5 L) of acetone to the 5-gallon (18.9 L) container of SCOFIELD Formula One Guard-S Concentrate. Agitate the container for 2 minutes to mix the contents. Top off the container with additional acetone and mix a second time. The total amount of acetone required is approximately 0.7 gallons (2.7 L) for the 1-gallon unit or 3.5 gallons (13.2 L) for the 5-gallon unit. **DO NOT USE AN ELECTRIC DRILL MOTOR FOR MIXING OR AN EXPLOSION MAY RESULT.**

13 Application

All surfaces must be properly prepared as described in section 11. *Substrate Preparation*. Apply diluted SCOFIELD Formula One Guard-S at the coverage rate described in section 2. *Coverage* using the equipment described in section 10. *Equipment for Preparation and Application*.

After the proper amount is applied, allow the SCOFIELD Formula One Guard-S treated concrete to dry thoroughly. Drying time will vary depending on temperature and air movement. Drying time could range from less than an hour to several hours. After the first coat is completely dry, the second coat is applied in the same manner as the first.

After a minimum of two hours drying time or when the surface is tack-free (whichever is longer), burnish the floor using a high speed burnisher operating at 1500–3000 rpm and equipped with a white burnishing pad to even out application variations and improve gloss. Prior to burnishing, test the ambient air to insure that no flammable vapors remain in the work area.

All treated and finished surfaces must be thoroughly inspected to verify and approve installation and safety, including wet and dry slip resistance, prior to opening the area to traffic.

14 Maintenance

Polished concrete surfaces treated with SCOFIELD Formula One Guard-S are generally very durable and require little

maintenance other than scheduled scrubbing with water and a neutral cleaner. Spills should be cleaned up when they occur in accordance with good housekeeping practices. No waxes or subsequent surface treatments are necessary in most applications but if wax or floor finish is used it should be tested for compatibility prior to use.

Floors previously treated with SCOFIELD Formula One Guard-S that lose the initial sheen can be re-burnished with a white pad to restore the sheen.

15 Availability

SCOFIELD Formula One Guard-S Concentrate is marketed nationwide and internationally, directly to the user through strategically located warehouses, dealers, and representatives. Contact Scofield for its nearest representative.

Scofield offers a complete line of engineered systems for coloring, texturing, and improving performance in architectural concrete. Scofield Systems address specialized requirements for interior, exterior and vertical uses with compatible systems of complementary products including 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.

16 Limited Warranty

Since no control is exercised over product use, L. M. Scofield Company (Scofield) represents and warrants only that its products are of consistent quality within manufacturing tolerances. NO OTHER ORAL OR WRITTEN REPRESENTATION OR STATEMENT OF ANY KIND, EXPRESS OR IMPLIED, NOW OR HEREAFTER MADE IS AUTHORIZED OR WARRANTED BY SCOFIELD, INCLUDING THOSE OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Liability for breach of contract, negligence, or on any other legal basis is limited to the lesser of refund or replacement of defective materials. SCOFIELD WILL NOT BE LIABLE FOR SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES, INCLUDING FOR DELAYS OR LOST PROFITS. Communication of this warranty and its limitations to end users is not the responsibility of Scofield, but should be communicated by those in direct contract with the end user. Any claim regarding product defect must be received in writing within one year from the date of manufacture. No claim will be considered without such written notice or after the specified time interval. The end user shall determine the suitability of the products for the intended use and assumes all risks and liability in connection therewith.



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SCOFIELD PRODUCTS ARE INTENDED FOR PROFESSIONAL USE ONLY

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