



SCOFIELD® Repello®

An environmentally sound, premium quality, invisible, penetrating treatment for protecting horizontal or vertical, porous colored or uncolored concrete and improving durability.

TECH-DATA BULLETIN B-104.04

1. Product Description:

SCOFIELD® Repello® is formulated for treating fully cured, porous, interior or exterior colored, multicolored, chemically stained or uncolored concrete where invisible protection from staining is required. Concrete surfaces treated with SCOFIELD Repello are easier to clean and maintain. It reduces damage or discoloration from common spills, such as food, oil, and chemicals, as well as environmental effects from acid-rain, airborne pollution and water penetration. Durability is improved and the treatment provides increased resistance to surface spalling caused by freeze/thaw cycles.

SCOFIELD Repello also reduces degradation of the surface appearance from mildew formation, chloride penetration, and efflorescence. Surfaces treated with SCOFIELD Repello remain breathable because the transmission of moisture vapor from the surface is not blocked.

An invisible barrier is formed when SCOFIELD Repello penetrates and reacts with the concrete. Since no film is formed, it cannot chip, peel, or flake away, and it will not yellow over time. It wears only as the substrate wears.

A unique and proprietary waterborne formulation, SCOFIELD Repello exceeds the performance of traditional clear water repellents or silicate-based products. Unlike other treatments, the unique chemical barrier formed by SCOFIELD Repello exhibits superior resistance to stains from water, spills and contaminants.

SCOFIELD Repello is formulated for easy, fast-track installations on interior or exterior, horizontal or vertical areas of cured new concrete construction, and also for refurbishment/renovation projects. It is intended for use above grade, in areas not subject to hydrostatic pressure. Application is done simply and quickly by hand-pump sprayers or rollers. A waterborne formula, it is virtually odor free during application. Within approximately one hour of treatment, the surface is protected from staining, and the performance continues to improve over several days.

Warehouse, factory, and many other colored or uncolored, porous concrete interior floors should normally be treated to protect the surface and facilitate cleanup. Applied to these surfaces, SCOFIELD Repello produces excellent results and reduces the need for aggressive ongoing floor maintenance programs.

2. Coverage:

SCOFIELD Repello must be applied full strength, without thinning, by roller, hand-pump sprayer, or squeegee. The coverage will vary depending on the method of application and the porosity and texture of the surface. Only one coat is required on untreated or stripped concrete and is sufficient on concrete previously treated with SCOFIELD Repello. For application, the recommended coverage rate is 100–200 square feet per gallon (2.5–5 m²/L).

3. Limitations:

SCOFIELD Repello is not removable, and should not be used in areas that may later require the application of coatings or adhesives for floor coverings.

SCOFIELD Repello must not be used below grade or for installations subject to hydrostatic pressure. It must be protected from freezing. Once frozen and thawed, it must not be used.

Newly placed concrete must be fully cured and completely clean and dry before the application of SCOFIELD Repello. The moisture content of the concrete must be low enough so that alkali and other salts do not cause discoloration, normally a minimum of 28 days after placement.

SCOFIELD Repello is not a waterproofing membrane. It will not prevent water from entering the concrete substrate through cracks or from above or below when subjected to hydrostatic pressure.

SCOFIELD Repello is intended for use on porous concrete surfaces only. It must not be used on the surface of nonporous concrete flatwork or on cementitious toppings such as SCOFIELD® Overlay™.

Alkali or hard-water deposits may form on the surface at edges, cracks, joints, depressions or other locations where water collects or enters the concrete substrate from above or below grade. Potted plants or other damp objects may leave deposits, stains, or discolorations if allowed to remain on the treated concrete for an extended period of time.

SCOFIELD Repello must be allowed to dry completely before it is subjected to temperatures below 42° F (6° C) or to water from any source. If SCOFIELD Repello is applied to improperly prepared surfaces, applied too heavily, or allowed to puddle in joints and indentations, whitening of the treatment may result. This whitening is very difficult or impossible to remove. Application must not be made on surfaces previously treated with a water or stain repellent.

SCOFIELD Repello is a premium-quality penetrant, and like all such materials, will require periodic maintenance and reapplication. Spills should be removed promptly and surfaces cleaned regularly to minimize possible staining and damage to the treatment.

Since SCOFIELD Repello is a penetrating treatment and no film is formed, dirt and solid soils can be ground into porous surfaces where it is used. Removal of these ground-in soils may require washing with scrubbing or pressure washing equipment.

SCOFIELD Repello may not be resistant to all stains under all conditions. Test applications are recommended. See section 11. *Chemical Resistance and Staining* for guidance.

WARNING!

SCOFIELD Repello must only be used on cured horizontal concrete surfaces that are adequately textured for slip resistance or on vertical concrete surfaces. Unless previously treated with SCOFIELD Repello, the surface must be porous and not sealed, coated, or covered with materials that will impede penetration. If applied improperly or too heavily, the surface may whiten. SCOFIELD Repello must not be applied by airless sprayer or any other method that generates a fine mist.

TEST SECTION

Treating horizontal or vertical concrete takes skill and practice. Prior to general application, a representative jobsite test section must be produced on each individual concrete surface to verify and approve concrete porosity, proper surface preparation methods, adhesion, performance, wet and dry slip resistance, application techniques, coverage, and final appearance.

**4. Composition and Materials:**

SCOFIELD Repello is a proprietary, waterborne, oil-, water-, and stain-repellent formulation.

5. Applicable Standards:

SCOFIELD Repello complies with applicable air quality management regulations that restrict VOC content to less than 100 g/L (0.83 lb/gal).



Floor coating and finishing material as to slip resistance only. 6L90

6. Sizes:

SCOFIELD Repello is available from stock in 1-gallon (3.8 L) and 5-gallon (18.9 L) pails.

7. Storage and Shelf Life:

When stored indoors in the original unopened containers and protected from freezing and temperatures above 120° F (50° C), the shelf life of SCOFIELD Repello is at least 1 year from the date of purchase. Inventory must be rotated to maintain product that is within shelf life limits.

8. Cautions:**CAUTION!**

Use only with adequate ventilation. Avoid breathing vapor, mist or respirable particles. Avoid contact with eyes, skin, and clothing. **DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN. DO NOT APPLY BY AIRLESS SPRAYER OR ANY OTHER APPLICATION METHOD THAT GENERATES A FINE MIST.** Contains Isopropyl Alcohol. Ensure fresh air entry during application and drying. If you experience eye watering, headaches or dizziness, or if air monitoring demonstrates vapor/mist levels are above applicable limits, wear a properly fitted P100/organic vapor respirator (NIOSH TC 84A approved) during and after application. Follow respirator manufacturer's directions for respirator use.

First Aid: Eyes—DO NOT RUB EYES. FLUSH IMMEDIATELY WITH WATER. Hold eyelids apart while flushing material out thoroughly with large amounts of water. Ingestion—GET MEDICAL ATTENTION IMMEDIATELY. Skin—Wash thoroughly with soap and water. Remove soiled clothing and footwear and wash before reuse. Inhalation—Move to fresh air. If symptoms persist or develop, get medical attention.

Wash thoroughly immediately after handling. 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 *Material Safety Data Sheet and Warranty*.

9. Textures and Slip Resistance for Concrete Flatwork:

Only uniformly slip-resistant, porous concrete surfaces, such as broomed, swirl or sponge floated, sandblasted, acid-etched, exposed-aggregate, or imprinted concrete should be considered for application. Textures that are not slip resistant must be roughened by some texturing method such as acid etching, sandblasting, or machine scarifying. On flat interior floors extra precautions should be taken to ensure that the surface is not slippery.

For safety considerations, a representative jobsite test section must always be prepared and treated with SCOFIELD Repello prior to general application and the entire surface inspected after completion to verify and approve the adequacy of wet and dry slip resistance.

10. Water and Oil Penetration:

The chart below for assessing water or oil penetration should be considered as a guide only. Test results were determined by the Rilem Tube Method.

Water and Oil Penetration Data				
WATER PENETRATION				
Milliliters at:	1 Hour	2 Hours	4 Hours	24 Hours
Untreated Concrete	2.25	3.60	Over 5.00	Over 5.00
SCOFIELD Repello	0	0.10	0.20	0.40
OIL PENETRATION				
Milliliters at:	1 Hour	2 Hours	4 Hours	24 Hours
Untreated Concrete	0.10	0.40	0.55	1.10
SCOFIELD Repello	0	0	0.05	0.10

11. Chemical Resistance and Staining:

Chemical and stain resistance may vary depending on the condition of the concrete substrate, surface preparation, method of application, the length of time the material remains on the surface, and other factors. When chemical protection is required or resistance to staining is important, a representative test application should be made on the jobsite substrate to determine if the product has suitable resistance. After the test application of SCOFIELD Repello has been installed for a minimum of 24 hours, the chemical in question should be applied and left on the surface for the maximum possible time it would remain under the expected conditions of service.

12. 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.

The use of a pressure washer, a rotary floor machine, or a walk-behind scrubbing machine will facilitate cleaning. A roller is normally used for application of SCOFIELD Repello, but a hand-pump sprayer or squeegee may be used if desired. All equipment should be rinsed regularly with water and periodically washed with soap and water.

For preparation of horizontal or vertical concrete, the pressure washer must be equipped with a fan tip and have a minimum pressure capability of 2000 psi (14 MPa). Hot water capability may facilitate cleaning of existing concrete. Nonmarking hoses are helpful.

For preparation of interior floors, the rotary floor machine must be heavy duty and operate at approximately 175 rpm. It may be equipped with brushes or with a pad driver that securely holds pads in place. A stiff-bristled bassine or nylon scrub brush is recommended. On flat interior floors, blue scrubbing or black stripping pads may be required. Walk-behind scrubbing machines should be considered for cleaning larger areas.

For application by roller, the roller must be short-napped with a maximum pile depth of $\frac{3}{8}$ inch (10 mm), long handled, of high quality, and a suitable size. An adequate supply of refill rollers should be available so they may be changed whenever necessary.

For application, the hand-pump sprayer must be of professional quality with a consistent output to ensure even coverage. Airless or high pressure spray equipment must not be used.

For application, the squeegee must be of professional quality, of suitable size, and in good condition to ensure even coverage.



13. Preparation:

During cleaning and stripping, all surrounding areas should be closed to traffic, roped off, and protected. Testing should be performed to verify that the cleaning or stripping methods and materials will not damage the concrete.

Before treating concrete surfaces that have not been previously treated with SCOFIELD Repello, all dirt, oil, previously applied curing compounds, and coatings must be completely removed. Failure to remove all contaminants and coatings that impede the penetration of SCOFIELD Repello into the concrete will cause adhesion loss and reduced durability.

To reduce hard-water and alkali deposits, sprinklers and fountains should be adjusted to avoid wetting of the concrete surface. In hard-water areas, soft water should be considered for use in water features. Construction joints should be sealed with LITHOSEAL™ Trafficalk-3G™, a high-quality, color-matched joint sealant for areas subject to pedestrian and vehicular traffic. Additional information about designing and sealing joints is available in Scofield's Tech-Data Bulletin S-404-3G LITHOSEAL Trafficalk-3G.

All washed or wet areas must be allowed to dry thoroughly before application of SCOFIELD Repello.

Newly placed concrete must be fully cured, completely clean, and dry. Before application of SCOFIELD Repello, the moisture content of the concrete must be low enough so alkali and other salts do not cause discoloration, normally a minimum of 28 days after placement.

Concrete flatwork must be uniformly and adequately textured for slip resistance as described in section 9. *Textures and Slip Resistance for Concrete Flatwork*. The concrete should be cured with new and unwrinkled, nonstaining, kraft curing paper that conforms to ASTM C 171 *Sheet Materials for Curing Concrete*.

Immediately prior to applying SCOFIELD Repello, the concrete must be thoroughly cleaned. The surface of concrete flatwork should be swept, and then pressure washed or scrubbed using a rotary floor machine. Cast-in-place concrete should be cleaned using a pressure washer. Use of a suitable, high quality commercial detergent will facilitate cleaning. Additional cleaning methods are described below. The surface must be rinsed after cleaning until the rinse water is completely clean.

Concrete that has been stained with an acidic stain, such as LITHOCHROME® Chemstain™ Classic, must be neutralized before the application of SCOFIELD Repello by washing with a 5% solution of soda ash or baking soda. Ammonia is not recommended for neutralizing the acid due to the possible formation of hazardous by-products. Thoroughly rinse the concrete surface several times and allow it to dry completely before the application of SCOFIELD Repello.

Existing concrete not previously treated with SCOFIELD Repello must be cleaned completely so that the surface is penetrable. An indication of whether the concrete is penetrable can be obtained by spotting the surface with water. The water should immediately darken the substrate and be readily absorbed. If the water beads and does not penetrate or only penetrates in some areas, additional surface preparation and testing must be performed. If the surface can not be made penetrable, it should be considered unsuitable for application of SCOFIELD Repello.

The cleaning method to be used depends on the surface finish and the condition of the concrete. Detergents, paint removers, or other commercial cleaners should be considered and tested. Pressure washing or scrubbing concrete floors with a rotary floor machine is normally required. After cleaning, the surface must be rinsed to remove any remaining residue. Rinsing should continue until the rinse water is completely clean. Wet vacuums may be helpful to remove dirty water from concrete floors, particularly from interior floors. After drying, the surface must be carefully inspected and retested for penetrability. Additional general or spot cleaning and rinsing should be performed if necessary.

Acid washing may be required when the above surface preparation does not yield adequate penetration or if there are excessive alkali deposits or surface discoloration. Acid washing may also be beneficial to clean and brighten exposed-aggregate finishes. Since acid washing may affect the appearance or uniformity of the color, a representative area should first be tested. After preparation as described above, the surface should be acid washed using a solution of one part muriatic acid (20° Baume or 31.4% hydrochloric acid) to 20 parts water. Proper protective gear as recommended by the acid supplier must be worn. The reacted residue must be scrubbed using a low-speed floor machine equipped with a black pad and then thoroughly rinsed until the rinse water is clear and free of solids, a minimum of two times. After rinsing, neutralize the surface by washing with a solution of baking soda (sodium bicarbonate) and water, using 1 pound of baking soda per 5 gallons of water (454 g/19 L). Apply the solution until it stops fizzing. After neutralization, the surface must be rinsed thoroughly with clean water several times to remove soluble salts. Rinsing must continue until the rinse water is clean. Rinse water must be removed with a wet vacuum; rinse water left on the surface to evaporate may cause efflorescence. After rinsing is complete, a pH test must be performed using pH paper, litmus paper or a properly calibrated surface pH meter. A pH value of 7 or higher indicates that all acid has been neutralized. If the tested pH value is below 7 the neutralization step outlined above must be repeated until a pH value of 7 or more is obtained. After drying, the surface must be retested for penetrability as described above. Additional acid washing and rinsing must be performed if necessary.

All applicable federal, state, and local safety, disposal, and other regulations, including OSHA, must be followed.

The residue left from the application of a chemical stain may prevent SCOFIELD Repello from bonding. Existing concrete surfaces that have been stained with LITHOCHROME Chemstain Classic must be thoroughly cleaned and rinsed before SCOFIELD Repello is applied. Newly stained concrete must be neutralized before application of SCOFIELD Repello by washing with a solution of baking soda (sodium bicarbonate) and water as described in the previous paragraph. Thoroughly rinse the concrete surface several times and allow it to dry completely before application of SCOFIELD Repello.

Concrete flatwork must be porous and have a uniformly slip-resistant surface. Textures that are not slip resistant must be roughened by some texturing method as described in section 9. *Textures and Slip Resistance for Concrete Flatwork*.

Concrete previously treated with SCOFIELD Repello must be prepared for spot treating as described in section 15. *Maintenance*.

14. Application:

All surfaces must be properly prepared as described in section 13. *Preparation*. Surrounding areas, landscaping, and adjacent surfaces must be masked or protected from spills, tracking, and product or equipment contact. The work area should be roped off, nearby vehicles removed, and appropriate sections closed to traffic. The surface should be divided into work sections using walls, joint lines, or other stationary features as natural stopping points. This allows for easier control of coverage, wet edge, and overlap.

Only one coat of SCOFIELD Repello should be applied to the prepared concrete by use of a roller, hand-pump sprayer or squeegee. Curbs and risers may be easily roller or spray coated.

SCOFIELD Repello must be stirred immediately prior to use and applied full strength (unthinned). It will have a milky appearance when wet, but when properly applied will dry and become invisible. If allowed to puddle, the milky appearance will remain.



Application must be made at the coverage rate recommended in section 2. *Coverage* using the equipment described in section 12. *Equipment for Preparation and Application*. The treatment must be applied uniformly. On horizontal surfaces, the Repello solution should remain on the surface for approximately one minute before penetrating. Vertical surfaces should be saturated with the Repello solution to create a slight rundown. A wet edge should be maintained, and overlap controlled. Material should not be overapplied or allowed to puddle or collect in joint indentations. A brush or rag should be kept available to brush out or mop up excess material.

SCOFIELD Repello should be applied on a calm day when concrete and air temperatures are between 50 and 90° F (10–32° C) and will not fall below 42° F (6° C). When interior heaters are required, temperatures and humidity should be moderate and consistently maintained. The surface must be dry and not subject to moisture that may interfere with the treatment drying properly. Application should not be made during rainy, foggy, or very humid weather when water condensation forms on the surface. On hot, dry days, application should be made during the cooler part of the day and when the concrete is in the shade.

SCOFIELD Repello must be allowed to dry completely, normally between 12–24 hours, before it is subjected to temperatures below 42° F (6° C) or to water from any source, such as hoses, sprinklers, condensation, or rain.

Treated surfaces will be dry to the touch after approximately 1–2 hours at 75° F (24° C) and 50% relative humidity. Under these conditions, the area may be walked on gently after a minimum of 4 hours.

After the treatment is completely dry, the area may be opened to light use after a minimum of 12 hours and to general use after a minimum of 24 hours. The performance of SCOFIELD Repello improves during the first several days after application. Longer drying times are helpful and will be necessary if temperatures are lower or the humidity is higher.

Roller marks may become visible on concrete that has been treated with SCOFIELD Repello when it becomes wet, especially when the temperature at the time of the application was above 75° F (24° C), causing the Repello application to dry too quickly. These marks will disappear when the surface dries.

All treated surfaces must be thoroughly inspected to verify and approve installation and safety, including wet and dry slip resistance, before the area is opened to traffic.

■ 15. *Maintenance:*

All maintenance methods should be tested, and all surrounding areas should be closed to traffic, roped off, and protected.

Spot treatments of SCOFIELD Repello should be made periodically as it is worn off either horizontal or vertical surfaces. The need for spot treating will be accelerated in areas of heavy use or that receive frequent or aggressive cleaning. Spot treat scratches, scrapes, wear paths, and other areas where SCOFIELD Repello has been removed by wear or cleaning. Areas where SCOFIELD Repello has not been worn off will repel spot treatment. All dirt and contaminants must be completely removed from the surface to be spot treated, and the surface thoroughly washed with warm water, rinsed, and allowed to dry before applying SCOFIELD Repello. Use a roller, hand-pump sprayer, or squeegee to apply SCOFIELD Repello and feather it into the surrounding surface. After the spot-treated areas are completely dry, slip resistance must be verified on concrete flatwork following the instructions in section 14. *Application*.

■ 16. *Availability:*

SCOFIELD Repello is marketed nationwide and internationally, directly to the user and 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.

■ 17. *Warranty Summary:*

For the complete warranty statement and important limitations, read the *Material Safety Data Sheet and Warranty*. Generally, Scofield represents and warrants only that its products are of consistent quality. No other oral or written statement is authorized. Any liability is limited to refund or replacement of defective product. The end user shall determine product's suitability and assume all risks and liability.

Suggested Short Form Specification for Treating Concrete Flatwork:

All concrete flatwork designated as being treated in the plans and specifications shall receive one treatment of SCOFIELD® Repello® manufactured by L. M. Scofield Company, (800) 800-9900, Los Angeles, CA, (323) 720-3000, and Atlanta, GA, (770) 920-6000. SCOFIELD® Repello® shall be applied full strength in accordance with Scofield's Tech-Data Bulletin B-104.



1 800 800 9900 or www.scofield.com


SCOFIELD PRODUCTS ARE INTENDED FOR PROFESSIONAL USE ONLY

■ L. M. Scofield Company customer service: 1 800 800 9900

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