

Product Data and Test Information

PROTECTOSIL® 40 H

Water Repellent

PRODUCT DESCRIPTION

Protectosil® 40 H is a clear, penetrating, breathable water repellent for use on all types of exterior above-grade concrete. This product penetrates the surface to chemically bond to the substrate, resulting in a permanent attachment of the water repellent molecule. **Protectosil® 40 H** is not a coating and as a result it will not leave a film or gloss on the surface.

By reducing the amount of water entering the substrate, **Protectosil® 40 H** reduces the intrusion of waterborne contaminants such as salt and dirt. This reduces the deteriorating effects of these contaminants, such as rebar corrosion, spalling, scaling, efflorescence, leaching and staining.

APPROPRIATE APPLICATIONS

For use on concrete, to protect the reinforcing steel from corrosion due to the effects of water, deicing salts and other waterborne chemicals. For use on highways, airport runways and concrete pavement, to reduce scaling due to deicer chemicals.

Reduces the expansion of alkali-silica reactivity. Reduces the effects of mildew, efflorescence and stains on vertical concrete surfaces. Imparts water repellency to a substrate for an extended time.

ADVANTAGES

Protectosil® 40 H is an alkyltrialkoxysilane in an alcohol carrier. The silane is designed to penetrate deep into the substrate and impart a high level of water and chloride ion screening. This provides the substrate with long-lasting protection. By incorporating **Protectosil® 40 H** into your integrated design, you can earn vital Leadership in Energy & Environmental Design (LEED) credits for both new and existing construction projects.

The main benefits of the product are:

- Excellent resistance to chloride ion ingress
- 100% Moisture vapor transmission
- Mitigation of AAR & ASR deterioration
- Deep penetration into substrate
- No change in surface appearance
- High resistance to alkali attack
- Long service life
- Excellent performance on wearing surfaces
- Keeps substrates cleaner

LIMITATIONS

Not intended for below-grade waterproofing. Should not be applied if the surface temperature is below 20°F (-7°C) or above 100°F (38°C), if rain is expected within 2 hours following application, or if high winds or other conditions prevent proper application. Do not apply if frost or ice is visible on the surface. If rain has preceded the application, the surface should be allowed to dry for at least 24 hours. Product will not etch glass or metal surfaces, but will leave a residue on nonporous surfaces. Protect the following items from overspray: glass, metal, plastic and other nonporous substrates, asphalt-based products, shrubbery and landscaping.

TECHNICAL DATA

Protectosil® 40 H is a clear, colorless liquid containing more than 40% silane in alcohol.

Color	clear
Active Substance	alkyltrialkoxysilane
Active Content	>40% by weight
Solvent	denatured ethyl alcohol
Flash Point	54°F
Density	6.9 lb/gal

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TEST DATA

ASTM C 642 "Water Absorption of Concrete"	
24 hours	0.31%
48 hours	0.60%
50 Days	1.6%
ASTM C 672 "Deicer Scaling"	
60 cycles	(non-air-entrained concrete) 0 rating
Alberta DOT Penetrating Sealers Type 1b	
87%	Waterproofing performance after sandblast
ASTM E 303 "Skid Resistance"	
Dry Surface	No change
Wet Surface	No change
NCHRP #244 (@ 200ft ² /gal or 4.9 m ² /l)	
Series II	87% reduction in water absorption
Series II	88% reduction in chloride absorption
Series IV	97% reduction in chloride absorption
AASHTO T 259 "90 Salt Ponding"	
0 to 1/2"	82% reduction
1/2 to 1"	92% reduction
ASTM D 1653 "Water Vapor Transmission"	
77.2 g/ft ²	24 Hours

INSTALLATION

Concrete must be allowed to cure for a minimum of 28 days unless authorized by a Protectosil® representative. Concrete repair and replacement must be completed prior to application of **Protectosil® 40 H**. Patching materials, caulking, sealing materials and traffic paint must be fully cured.

The concrete must be clean and dry prior to application. All surfaces must be cleaned to remove all traces of dirt, dust, efflorescence, mold, salt, grease, oil, asphalt, laitance, curing compounds, paint, coatings and other foreign materials. Acceptable surface cleaning methods include shotblasting, sandblasting, waterblasting and using chemical cleaners. Check with your Protectosil® representative to verify that

surface preparation is adequate. Allow sufficient time for the concrete to dry after waterblasting or precipitation.

Protectosil® 40 H should be applied using low-pressure (15 to 25 psi) pumping equipment with a wet fan type spray nozzle. Alternate methods include using either a power roller with a 1" nap or a brush. Do not alter or dilute the material. Do not apply to a wet or damp substrate. Test a small area prior to application to verify coverage rate, appearance and whether the application conditions are acceptable.

Apply **Protectosil® 40 H** on vertical surfaces in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern. On horizontal surfaces, the liquid material should pond on the surface for at least 5 seconds before being absorbed.

Coverage rates on horizontal concrete surfaces are between 125 and 250 ft²/gal. Coverage rates on vertical surfaces depend on the type of concrete to be treated. Your Protectosil® representative can give an exact coverage rate for your particular project. Please refer to the "**Protectosil® 40 H** Application Instructions" for more detailed information.

Precautions: Protectosil® 40 H is a flammable liquid and should be kept away from heat, sparks, open flame and other sources of ignition. **Protectosil® 40 H** containers should be kept closed when not in use and should be stored at temperatures between 0°F and 120°F (-18°C and 50°C), away from rain and standing water. When working in an enclosed area, an air respirator should be used. Read the material safety data sheet prior to handling or applying product.

AVAILABILITY

Protectosil® 40 H is available in 5-gallon pails and 55-gallon drums. Shipped F.O.B. throughout the United States and Canada. Contact your local Protectosil® representative or your regional manager for specific cost information. You can obtain their contact information on our website, silanes.evonik.com/en, or by calling us at 1 (800) 828-0919.

TECHNICAL SERVICE

Technical service engineers and scientists are available to answer questions about product performance, application methods and compatibility with other building materials. You can speak to one of our engineers or scientists directly by calling our toll-free number, 1 (800) 828-0919, and selecting option 1.

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MANUFACTURER

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PROTECTOSIL® PRODUCTS ARE MANUFACTURED AT THE EVONIK CORPORATION THEODORE, ALABAMA, PLANT UNDER A QUALITY SYSTEM CERTIFIED TO ISO-9001 ISO-14001 AND ISO-50001 REQUIREMENTS.

For more information, SDS and the most updated product information, and to find your local representative, go to silanes.evonik.com/en

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