

# Protectosil® 300S

## WATER REPELLENT Product Data and Test Information



### PRODUCT DESCRIPTION

A clear, penetrating, breathable VOC-compliant surface treatment for use on concrete. The Isobutylalkoxy functional silane allows for faster dry times and superior performance on high quality mix designs typical of new bridge decks. Creates a deep hydrophobic layer that prevents water and waterborne contaminants from entering the substrate and causing premature deterioration.

By combining ultra-low surface tension with a tailored rate of reaction, **Protectosil 300S** is able to move through the moisture boundary layer that lines the pore structure of the substrate. This permits the development of uniform gradient permeation — a consistent level of protection throughout the entire depth of penetration — allowing for longer treatment life, especially on wearing surfaces.

### APPROPRIATE APPLICATIONS

For use on cast-in-place, precast, GFRC and high-strength concrete, to protect the reinforcing steel from corrosion due to the effects of water, deicing salts and other waterborne contaminants.

Alleviates deterioration of concrete due to alkali-silica reactivity.

For use on bridge decks where fast drying is needed to minimize lane closures.

For treating heavy-traffic wearing surfaces or areas that receive high salt concentrations (piers, coastal buildings), to provide a high-performance, long-lasting chloride screen.

### ADVANTAGES

**Protectosil 300S** is a solvent-free, Isobutylalkoxysilane. **Protectosil 300S** penetrates deeper than traditional silane and siloxane solvent- or water-carried systems. This deeper penetration gives a long-lasting, resistance against water and chloride intrusion. **Protectosil 300S**'s breathable system greatly reduces the amount of water that enters a substrate, thus promoting a "drying out" of the substrate. Reduces the deteriorating effects of water, such as alkali silica reactivity. By incorporating **Protectosil 300S** 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
- No change in surface friction after application
- High resistance to alkali attack
- Long service life
- Excellent performance on wearing surfaces
- Dry time 1 hour at 70°F (21°C)
- Will not inhibit adhesion of paints and line striping

### LIMITATIONS

Not intended for below-grade waterproofing. Should not be applied if the surface temperature is below 20°F (-7°C) or above 110°F (43°C), if rain is expected within 2 hours following application, or if high winds or other conditions prevent proper application. If rain has preceded the application, the surface should be allowed to dry for at least 24 hours.

### TECHNICAL DATA

**Protectosil 300S** is a liquid Isobutyl functional silane

Color	water white
Active Substance	100% Isobutylalkoxysilane
Solvent	none
Flash Point	145.4°F
Density	7.3 lb/gal
VOC	385 g/l

### TEST DATA

#### Alberta DOT Penetrating Sealer Type 1c

(0.35 w/c ratio)

Water repellency after heavy abrasion	88.4%
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#### NCHRP #244 Series II

##### Reduction in water absorption

@250 ft <sup>2</sup> /gal	86%
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##### Reduction in chloride ion ingress

@250 ft <sup>2</sup> /gal	87%
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#### NCHRP #244 series IV reduction in chloride ion

@250 ft <sup>2</sup> /gal	99%
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### Equivalent Thickness of Concrete Needed to Give Same Chloride Ion Protection as Treatments (150 days of salt exposure)

Treatment	Thickness of Concrete
<b>Protectosil 300S</b>	3.5 inches
Methyl Siloxane	0.25 inch
iso-Octyl Siloxane	1.2 inches
iso-Octyl Silane/Siloxane	1.2 inches

### ASTM C 642 "Water Absorption of Concrete"

24 hours	0.03%
48 Hours	0.04%
50 Days	0.20%

### ASTM C 672 "Deicer Scaling"

100 Cycles (non-air-entrained concrete)	0 Rating
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### AASHTO T259 "90 Day Salt Ponding"

Non Abraded specimen  
1/2" to 1" 0.34 lbs/yd<sup>3</sup> Cl<sup>-</sup>

### ASTM E 274 "Skid Resistance of Paved Surfaces"

Dry	No change
Wet	No change

### ASTM D6489 "Water Absorption of Concrete"

48 hours	95% reduction
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### Penetration, OHD L-34

Concrete 0.5 w/c ratio	3/8 to 5/8 inch
Concrete 0.42 w/c ratio	3/8 to 1/2 inch

## INSTALLATION

Generally, concrete must be allowed to cure for a minimum of 28 days, however there are instances which the cure time can be shortened. Please consult your local Protectosil rep for the criteria needed to apply sealer before the 28 day cure time.

Concrete repair and replacement must be completed prior to application of **Protectosil 300S**. Patching materials, caulking, sealing materials and traffic paint must be fully cured before applying **Protectosil 300S**. 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.

**Protectosil 300S** should be applied using low-pressure (15 to 25 psi) pumping equipment with a wet fan type spray nozzle. Alternate methods include using a spray bar or apparatus equipped with multiple nozzle tips which will apply a uniform coat across the concrete surface. Power rollers with a 1" nap or brushes are permitted, however using these will result in additional labor and costs. Do not alter

or dilute the material. Do not apply to a wet or damp substrate. A test patch should be applied to the substrate by a Protectosil representative to verify coverage rate and application conditions.

On vertical surfaces, apply the **Protectosil 300S** in a flooding application from the bottom up, so the material runs down 6 to 8 inches below the spray pattern. Coverage rates on horizontal concrete surfaces are between 100 and 350 ft<sup>2</sup>/gal. Coverage rates on vertical surfaces depend on the type of substrate to be treated. Your Protectosil representative can give exact coverage rates for your particular project. Please refer to the "**Protectosil 300S** Application Instructions" for more detailed information.

**Precautions: Protectosil 300S** is a combustible liquid and should be kept away from heat, sparks, open flame and other sources of ignition. **Protectosil 300S** containers should be kept closed when not in use and should be stored at temperatures between 0°F (-18°C) and 120°F (50°C), away from rain and standing water. When working in an enclosed area, an air respirator should be used. Please refer to the material safety data sheet for more detailed information.

## AVAILABILITY

**Protectosil 300S** is available in 5-gallon pails, 55-gallon drums or 250 gallon totes. 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, [www.protectosil.com](http://www.protectosil.com), 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.

## MANUFACTURER

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

For more information, SDS and the most updated product information, and to find your local representative, go to [www.protectosil.com](http://www.protectosil.com)

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