

Protectosil® 300C

CORROSION INHIBITOR TREATMENT Product Data and Test Information



PRODUCT DESCRIPTION

A clear penetrating breathable VOC compliant surface treatment for use on concrete. The unique solvent-free silane treatment penetrates into the substrate and chemically bonds with silica to form a permanent attachment of the water repellent molecule. Creates a deep hydrophobic layer which prevents the ingress of water and water borne contaminants from entering the substrate and causing premature deterioration.

The addition of a migrating corrosion inhibitor allows the **Protectosil 300C** to be used to reduce corrosion in steel reinforced concrete. The inhibitor has an independent migration rate of 5 to 15 mm per day. This allows the inhibitor to reach the steel and form protective layer to reduce active corrosion sites.

APPROPRIATE APPLICATIONS

For use on cast-in-place, pre-cast, and high strength concrete to protect the reinforcing steel from corrosion due to the effect of water, deicing salts and carbonation. For protecting concrete structures such as parking and bridge decks, columns and beams, piers, sea walls, sidewalks, balconies, driveways, roads and other steel reinforced concrete structures. Inhibitor additive reduces active corrosion of steel reinforced concrete. For treating heavy traffic wear locations or areas which receive high salt concentrations (piers, coastal buildings) to provide a high performance, long lasting chloride screen.

ADVANTAGES

Protectosil 300C is a solvent-free alkyltrialkoxo silane with a corrosion inhibitor that protects against corrosion of steel reinforcement. Reduces corrosion without harmful additive such as nitrites, phosphates, or chromates. Acts as a mixed inhibitor effectively working on both anodic and cathodic corrosion sites.

The main benefits of the product are:

- Excellent resistance to water intrusion
- Excellent resistance to chloride ion ingress
- Reduces microcell and macrocell corrosion
- Mitigation of AAR & ASR deterioration
- Excellent performance on wearing surfaces
- Breathable system
- Deep penetration into substrate
- High resistance to alkali attack
- Keeps substrates cleaner

LIMITATIONS

Not intended for below-grade water-proofing. Should not be applied if the surface temperature are below 20°F (-6.5°C) or above 100°F (38°C), if rain is expected within four 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 at least 48 hours. Product will leave a residue on glass, metal and other non-porous surfaces.

TECHNICAL DATA

Protectosil 300C is a liquid silane with corrosion inhibitor additive.

Active content	100%
Color	clear to slightly yellow
Density	0.89 s.g.
Viscosity	2.5 cps
Solvent	none
Flash point	150°F (65.5°C)
VOC	< 400 g/l

TEST DATA

Alberta DOT Penetrating Sealer Type 1c
(0.35 w/c concrete)

Water Repellency w/heavy abrasion 86.1%

Corrosion Beam Test (Cracked G-109)

Six Month Cyclic Salt Ponding – 65% reduction

ASTM C 642 "Water Absorption of Concrete"

Treated with Protectosil 300C

48 Hours 0.03%

50 Days 0.74%

ASTM C 672 "Deicer Scaling"

100 cycles (non-air entrained concrete) -- 0 rating

ASTM G 3 Practice for Electrochemical

Measurements in Corrosion Testing

Coating layer 100µ to 250µ

NCHRP Series II - Reduction in Water Absorption

@ 200 ft²/gallon 90%

@ 300 ft²/gallon 87%

Reduction in Chloride Ion Ingress

@ 200 ft²/gallon 91%

@ 300 ft²/gallon 88%

NCHRP Series IV - Reduction in Chloride Ions

@ 200 ft²/gallon 99%

@ 300 ft²/gallon 98%

ASSHTO T 259 "90 Day Salt Ponding"

(specimens abraded)

1/2" to 1" 99% reduction

(nonabraded specimens)

1/2" to 1" 85% reduction

INSTALLATION

Concrete should be allowed to cure a minimum of 28 days. Concrete repair and replacement must be completed prior to application of **Protectosil 300C**. Patching materials, caulking, sealing material, traffic paint must be fully cured before 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 chemical cleaners. In some instances, the use of a power broom or street sweeper can be utilized. Check with your Protectosil representative to determine what method is appropriate and to verify that surface preparation is adequate prior to treatment.

Protectosil 300C should be applied using low pressure (15 to 25 psi) pumping equipment with a wet fan type spray nozzle. Alternate methods include power roller with a 1" nap or by brush. Do not alter or dilute the material. Do not apply to a wet or damp substrate.

Typical application of **Protectosil 300C** is a two coat process. The following net coverage rates can be used as a guideline.

Cast in Place Parking Garages:	100-250 ft ² /gallon
Pre-cast Parking Garages:	150-300 ft ² /gallon
High Density Pre-cast Vertical:	200-300 ft ² /gallon

Allow the first coat to dry for minimum of 2 hours (at 70° F) in between coats and make sure to broom out puddled material. Cooler temperatures may facilitate a longer drying time in between coats. Check for exact coverage rate for you project with your Evonik representative. A test patch should be applied to the substrate to verify coverage rate, application conditions and visual appearance.

Precautions: Protectosil 300C is a combustible liquid and should be kept away from heat, sparks, open flame or other sources of ignition. The containers should be kept closed when not in use and should be stored at temperatures between 0°F (-20°C) and 120°F (50°C) and away from rain and standing water. When working in an enclosed area, an air respirator should be used. Please refer to Material Safety Data Sheet for more detailed information.

For more information, MSDS and the most updated product information, and to find your local representative, go to www.protectosil.com

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AVAILABILITY

Protectosil 300C 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, 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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