Protectosil® AQUA-TRETE® EM
WATER REPELLENT
Product Data and Test Information

PRODUCT NAME
Protectosil® AQUA-TRETE® EM
High performance water repellent for masonry and concrete

MANUFACTURER
Degussa Corporation
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PROTECTOSIL PRODUCTS ARE MANUFACTURED AT THE DEGUSSA CORPORATION THEODORE, ALABAMA PLANT UNDER A QUALITY SYSTEM CERTIFIED TO ISO-9001 REQUIREMENTS.

PRODUCT DESCRIPTION
A penetrating, water-borne, vapor permeable water repellent for use on concrete, brick, concrete masonry units and some natural stones. A patented, ready-to-use, low VOC, silane/siloxane emulsion. Reduces the ingress of water and water-borne contaminants into the substrate and thereby prevents premature deterioration. Penetrates the substrate and chemically bonds with silica to form a permanent attachment of water-repellent molecule. Protectosil AQUA-TRETE EM water repellent is especially suited for applications in which solvent-borne products are not acceptable, such as in states which have VOC regulations for AIM coatings. Protectosil AQUA-TRETE EM is VOC compliant in all 50 states.

By reducing the ingress of water and water-borne contaminants into the substrate, Protectosil AQUA-TRETE EM decreases problems such as efflorescence, leaching, acid rain deterioration, scaling, dirt buildup, staining, corrosion of reinforcing steel, and mildew. Treated surfaces are fully breathable because their natural moisture-vapor transmission is not affected. This will reduce problems that entrapped moisture can cause, including blushing of the sealer and freeze-thaw damage to the masonry.

APPROPRIATE APPLICATIONS
Brick masonry, especially single wythe wall construction, can be treated to prevent moisture absorption.

Concrete masonry units (medium to normal weight split face, fluted, or ground-faced blocks) can be protected from the ingress of wind-driven rain.

For use on concrete to protect the reinforcing steel from corrosion due to the effect of water, deicing salts and other water-borne chemicals.

To protect precast concrete (including GFRC) from leaching minerals onto the surface of windows, window frames and other building components. In addition, to keep the concrete clean by reducing the amount of dirt and other pollutants which may be absorbed into the concrete.

Other substrates which can be protected include sandstone, terra-cotta, handmolded bricks, and some natural stones.

ADVANTAGES
Protectosil AQUA-TRETE EM is a silane/siloxane mixture in a proprietary emulsion system. Unlike some other silane or siloxane emulsion systems, Protectosil AQUA-TRETE EM is ready to use and is suitable for brick and concrete, without the need to blend oils, silicones, stearates or acrylates into the system. Protectosil AQUA-TRETE EM is designed to provide a high level of surface beading with penetration to protect against wind-driven rain. The active components are unique because they chemically bond to the silica in the substrate and set up a hydrophobic layer of protection. Because of this unique chemistry Protectosil AQUA-TRETE EM has long service life.

The main benefits of the product are:
• Nonflammable
• VOC compliant
• Vapor permeable system
• Penetration of the substrate
• Excellent resistance to wind-driven rain
• Excellent resistance to chloride ion ingress
• Reduces efflorescence
• Long service life
• No blushing, peeling or yellowing
• Resistance to alkali attack

(Continued)
LIMITATIONS
Not intended for below-grade waterproofing. Will leave a residue on non-porous materials such as glass, metal and painted surfaces. Shrubbery and plant life should be protected from overspray.

Should not be applied if the surface temperatures are below 40 °F or above 100 °F; if rain is expected within two 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 24 hours.

TECHNICAL DATA
Protectosil AQUA-TRETE EM is composed of a silane/siloxane in water.

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>milky white</td>
</tr>
<tr>
<td>Active Substance</td>
<td>silane/siloxane</td>
</tr>
<tr>
<td>Active Content</td>
<td>10%</td>
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<tr>
<td>Solvent</td>
<td>water</td>
</tr>
<tr>
<td>Flash Point</td>
<td>&gt;195 °F</td>
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<tr>
<td>Density</td>
<td>950 g/l</td>
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<tr>
<td>VOC</td>
<td>&lt;300 g/l</td>
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TEST DATA

ASTM C 140 “Water Absorption Concrete Masonry Units”
24 hour submersion test 97.3% effective in reducing water intrusion

ASTM C 67 “Sampling and Testing Brick and Structural Clay Tile, Part 7 Absorption”
24 hour submersion test 98.1% effective in reducing moisture intrusion

ASTM C 642 “Water Absorption of Concrete”
24 hours 0.49% 48 hours 0.68%

ASTM C 672 “Deicer Scaling”
60 cycles (non-air-entrained concrete) 0 rating

TT-C-555B “Accelerated Weathering”
No change

ASTM D 1653 “Moisture Vapor Permeability of Organic Coatings”
64 grams/ft²/24 hours, 92% water vapor transmission

ASTM E 514 “Water Leakage of Masonry”

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<thead>
<tr>
<th>Test Condition</th>
<th>Leakage Rate</th>
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<tbody>
<tr>
<td>Untreated</td>
<td>5.50 liters/hr</td>
</tr>
<tr>
<td>Treated</td>
<td>0 liters/hr</td>
</tr>
<tr>
<td>Reduction in</td>
<td>100%</td>
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INSTALLATION
Concrete must be allowed to cure a minimum of 28 days. All repointing must be completed and allowed to cure at least 3 days. Concrete repair and replacement must be completed prior to application of Protectosil AQUA-TRETE EM. Patching materials, caulking, sealing materials, and traffic paint must be fully cured before applying Protectosil AQUA-TRETE EM.

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. Check with your Degussa Corporation representative to verify that surface preparation is adequate.

Protectosil AQUA-TRETE EM 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. A test patch should be applied to the substrate by a Degussa Corporation representative to verify coverage rate and application conditions.

Substrate, air and product temperature shall be between 40 °F and 100 °F (5 °C and 38 °C) during application. Do not apply product if temperatures are expected to fall below 40 °F (5 °C) within 12 hours after application. Do not apply material if rain is predicted within 4 hours after application.

On vertical surfaces apply the Protectosil AQUA-TRETE EM 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 at least 5 seconds before being absorbed. Coverage rates on masonry surfaces depend on the type of material to be treated. Your Degussa Corporation representative can give an exact coverage rate for your particular project.

Protect glass, metal, plastic and other non-porous substrates from overspray. Protectosil AQUA-TRETE EM will not etch glass but will leave a residue on non-porous surfaces.

Protectosil AQUA-TRETE EM should not darken or discolor the substrate if used at the recommended coverage rates, but due to variations in substrate porosity and environmental conditions, a test patch is advised to verify compatibility.

Precautions: The Protectosil AQUA-TRETE EM product containers should be kept closed when not in use and should be stored at temperatures between 35 °F and 110 °F and away from rain and standing water. Please read the Degussa Corporation Material Safety Data Sheet for more detailed information.

AVAILABILITY
Protectosil AQUA-TRETE EM is available in 5 and 55 gallon drums to approved applicators F.O.B. various warehouses throughout the United States. Contact Degussa Corporation at 1-800-828-0919 for the sales representative in your area for specific cost information.

TECHNICAL SERVICE
Technical service engineers and chemists are available to answer questions on product performance, application methods and compatibility. Call (800) 828-0919 for prompt service.