

PROTECRETE®

CONCRETE'S BEST SOLUTION

FORMERLY KNOWN AS PROTECRETE-D+SRT DENSIFIER PLUS SURFACE REPELLENT TREATMENT

DENSIFIER PLUS REPELLER

Technical Data

1. Product:

DENSIFIER PLUS REPELLER, a Colloidal Silicate Subsurface Membrane plus Surface Repellent Treatment. Also formerly known as PROTECRETE-D+SRT Densifier plus Surface Repellent Treatment.

2. Manufacturer:

Applied Concrete Technology, Inc.
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3. Description/Basic Use:

DENSIFIER PLUS REPELLER is an especially formulated aqueous silicate component, clear in color and contains no volatile organic compounds.

As a Densifier/Sealer:

When applied to wet, green Portland cement concrete, DENSIFIER PLUS REPELLER integrally waterproofs, densifies and preserves attributes beneficial to concrete. DENSIFIER PLUS REPELLER seals the concrete both internally and externally. It provides a tough breathable barrier just beneath the concrete's surface porosity top and on the surface of the concrete. It provides both vertical and horizontal surfaces more resistance against cracking and spalling during freeze thaw cycles. DENSIFIER PLUS REPELLER is not detrimental to surface bonding quality or surface traction. It provides concrete an effective chloride ion barrier that preserves its imbedded steel. It effectively removes the potential for future hostile contamination ingress, while significantly reducing vapor transmission rate potential, effectively preserving the treated concrete's integrity. It increases surface abrasion resistance as well as surface acid/chemical damage resistance. The Repeller is deposited to protect the top. As DENSIFIER PLUS REPELLER penetrates ultra deeply into concrete, it prolifically reacts with interior ingredients such as free alkali or unused calcium hydroxide residue and prolifically converts DENSIFIER PLUS REPELLER's unusually low

solids colloidal liquid to a 100% solids insoluble precipitant. It instantly provides added density and becomes an integral part of the concrete by occupying its accessible porosity and other tiny voids. It forms a breathable barrier which begins in concrete's transitional porosity located between the large surface porosity and its small microporosity. The uniquely induced precipitant barrier does not generate any heat during its conversion from liquids to solids, nor expansion pressures at any time. This internally generated barrier remains resilient and consists of pore sizes that are much smaller than concrete's micropores. This further diminishes concrete's void percentages while increasing the impermeability, yet still allowing the concrete to retain its ability to breath, expand and contract as it needs to. It significantly decreases the potential vapor gas transmission rate. Because the internally generated barrier has extremely small porosity, it alleviates or eliminates transmission of gases such as radon, forcing them to seek other avenues of escape rather than passing through the concrete.

DENSIFIER PLUS REPELLER halts or significantly retards internal corrosion activity. It seals, strengthens, supplements, densifies and detoxifies concrete without deleterious effect to its external appearance or physical characteristics. DENSIFIER PLUS REPELLER will not impair surface traction quality or bonding ability. Treat areas when rain is not expected for 24 hours.

DENSIFIER PLUS REPELLER is an excellent primer application for surface toppings, paints, adhesives, etc. It addresses the reasons of potential early coating failures such as capillary/alkaline moisture, saponification, laitance, poor surface adhesion, etc. It is an excellent chloride barrier.

DENSIFIER PLUS REPELLER can be applied to new or old concrete, inside or out without detrimentally affecting the surface quality. It can be used to improve or enhance any concrete whether traffic

bearing or not. DENSIFIER PLUS REPELLER is excellent for use on streets, highway pavement, bridges, parking garage decks, airport pavement, dams, pavers, sidewalks, driveways, basements, tunnels, etc. It will stop water leakage in concrete while it is occurring in installations such as water storage reservoirs, water treatment tanks, below grade concrete with or without hydrostatic pressure, etc. The liquid travels against the water flow when applied to the negative side, permanently arresting the flow of water, a unique feat that is much less complex and labor intensive (and more economical) than trowel on remedies.

As a Cure:

DENSIFIER PLUS REPELLER is an excellent alternative concrete curing method providing a cure equal or better than water curing. It provides the usual benefits of a curing agent, plus it provides special ingredients to the yet available capillary mix water waiting to participate in the hydration reaction process in the plastic or semi plastic concrete, reciprocating acceleration of hydration's reaction rates. This in turn generates increased volumes of cement paste or hydration product in a much shorter time. It utilizes all of the remaining capillary water and leaving none to later evaporate and create void spaces. As a result, the concrete's capillary void spaces become more segmented and smaller than usual. DENSIFIER PLUS REPELLER provides concrete a superior cure imparting extraordinary strength, surface hardness and impermeability and subsequent maximum durability.

The DENSIFIER PLUS REPELLER Cure Method provides concrete with a permanent subsurface, specially formulated colloidal liquid precipitate barrier. Its pore sizes are smaller than concrete's micropores that even further diminish permeability. It forces even gases such as radon to seek avenues of escape other than through concrete's capillary system. The DENSIFIER PLUS REPELLER Cure Method does not leave a surface residue to interfere with surface bonding quality.

DENSIFIER PLUS REPELLER Continued

Technical Data

It produces concrete that is significantly more internally waterproofed, freeze-thaw damage resistant, dust resistant and acid/chemical resistant.

Limitations: DENSIFIER PLUS REPELLER contacting glass should be flushed with water and not allowed to dry, since it could etch. It dulls the shine on shiny aluminum, but the integrity is unaffected. Do not apply on frozen substrate or when temperature is near freezing.

4. Some Advantages:

- Permanently integrally waterproofs concrete
- Provides internal humidity stability
- Preserves matrix and overall integrity
- Increases surface abrasion resistance
- Excellent coating or topping primer
- Improves thermal resistance
- Increases strength
- Zero VOC or VOS content
- Prevents water migration
- Ice removal and cleaning easier
- Improves dusting resistance
- Improves acid/chemical resistance
- Lowers internal chemical reaction potential
- Lowers creep deformation potential
- Lowers electrostatic discharge potential
- Improves past carbonation effects
- Improves freeze-thaw cycle damage
- Makes surface more crack resistant

- Resists oil and water penetration to beneath the treated surface
- Normal maintenance

5. Technical Data:

Physical: Liquid

Color: Cloudy-white (Dries clear)

Odor: None

Specific Gravity: 1.10

pH: ±12

Flash Point: None

Flammability: None

Toxicity: None

Paintability: Excellent

Cleanup Solvent: Water

Environmental Impact: None/Neutral

Hazardous Vapors: None

Freeze Temperature: 32°F

U.V. Resistance: Excellent

Surface Bond Quality: Excellent

R-Factor Increase: Up to 20%

Spill Cleanup: Dilute/flush with water

Chloride Screen ability: Excellent

User Status: Friendly

VOC/VOS Compliant: Yes

Recommended Coverage: 200 S.F./Gal.

6. Installation:

Note: In hot climates, mist-wet the surface with water and remove any puddles prior to application.

- a. Use medium- to high-pressure airless sprayer complete with a 24-inch wand and a .019 fan tip spray jet.
- b. Hold spray tip 6 inches from surface.
- c. Apply to the point of saturation at the rate of 200 sq. feet per gallon with an overlapping spray pattern of approximately 10% to 15%.

d. Do not overapply or buildup can occur, causing a darkening effect.

e. Begin applying at the lowest level elevation. For example, walls and slopes should be applied side to side, from the bottom up.

f. Do not apply on frozen substrate or when temperature is near freezing.

g. DENSIFIER PLUS REPELLER may etch glass or dull aluminum and can be difficult to remove from other surfaces once it dries. Take precautions to cover surrounding surfaces or rinse immediately if sprayed with product.

h. DENSIFIER PLUS REPELLER is completely safe to use and environmentally friendly. We do recommend use of a painter's mask during application. Refer to MSDS.

7. Installation as a Cure Method:

a. Follow normal application instructions, except use a medium-pressure airless spray unit to avoid disturbing the top.

b. Apply to the newly poured concrete surface as soon as is practical following surface finishing.

c. Apply at the rate of 150 to 200 square feet per gallon for broom finished concrete; 300 to 350 square feet per gallon on hard or steel troweled concrete. Application should begin at the lowest level elevation. For example, walls and slopes should be applied from side to side, from the bottom up, with spray patterns slightly overlapping.