

# REC GUARD 1000

## ACTIVE COMPONENT FOR FORMULATING PENETRATING WATER REPELLENT TREATMENTS

### DESCRIPTION

**REC GUARD 1000** is a solvent-free silane/siloxane concentrate, dilutable in organic or silicone solvents to formulate a water repellent. Upon proper application, the formulated product will penetrate and provide water repellency by chemically reacting with the substrate. Treated substrates are hydrophobic and retain their original appearance. A catalyst is present, so it can be used on both neutral and alkaline substrates.

The active ingredients react with moisture to produce hydroxy groups. These hydroxy groups will bond with the substrates and themselves to produce a hydrophobic treatment that inhibits water absorption into the substrate. Exposure to water before use as a treatment may cause the material to cure in the container.

### PRIMARY APPLICATIONS

- For use on neutral and alkaline mineral substrates such as brick, sandstone, concrete and mortar that require water repellency.

### FEATURES/BENEFITS

- Excellent beading in as little as 5 minutes after application
- Dilutable in organic solvent to formulate water repellent products
- Produces a hydrophobic treatment that inhibits water absorption
- Excellent performance at low active solids levels, in range of 5–10 percent
- Penetration of absorbent surfaces due to small molecular structure provides added repellency
- Chemically bonds to the substrates
- Performs on both neutral and alkaline substrates
- UV stable to increase the life of the treatment
- Water vapor permeable but resistant to liquid water
- Reduction in water absorption reduces cracking and spalling due to freeze-thaw and efflorescence, thereby increasing the life of the substrate
- Penetrating treatment will not change the appearance of the substrate at low solids levels
- Performs at low solids level allowing higher dilution rate.

### TECHNICAL INFORMATION

| Property                                | Unit                       | Result                                                                                 |
|-----------------------------------------|----------------------------|----------------------------------------------------------------------------------------|
| Color                                   |                            | Clear to straw                                                                         |
| Active Ingredient                       | percent                    | 98                                                                                     |
| Non-Volatile Content                    | percent                    | 92.8                                                                                   |
| Specific Gravity at 25°C (77°F)         |                            | 0.96                                                                                   |
| Flash Point, closed cup                 | °C (°F)                    | 10 (50)                                                                                |
| Density                                 | g/cm <sup>3</sup> (lb/gal) | 0.96 (8.01)                                                                            |
| Volatile Organic Compound (VOC) Content | g/L (lb/gal)               | 73 (0.63)                                                                              |
| Solvent (Thinner)                       |                            | Alcohol, chlorinated solvents, aromatic or aliphatic hydrocarbons, or silicone solvent |

**Table 1: Performance of REC GUARD 1000 on Various Substrates**

| %Water Exclusion <sup>1</sup> vs. Control after 24 hr immersion |                           |
|-----------------------------------------------------------------|---------------------------|
| Substrate / %Active Solids                                      | (ASTM C 642) <sup>2</sup> |
| <b>Alkaline Substrates</b>                                      |                           |
| Mortar Cubes                                                    |                           |
| 10% REC GUARD 1000                                              | 76.0                      |
| 15% REC GUARD 1000                                              | 81.6                      |
| Concrete Block                                                  |                           |
| 5% REC GUARD 1000                                               | 77.4                      |
| 10% REC GUARD 1000                                              | 86.0                      |
| 15% REC GUARD 1000                                              | 90.0                      |
| %Water Exclusion vs. Control after 24 hr immersion              |                           |
| Substrate / %Active Solids                                      | (ASTM C 67) <sup>3</sup>  |
| <b>Neutral Substrates</b>                                       |                           |
| Belden Belcrest 350-550 Brick                                   |                           |
| 10% REC GUARD 1000                                              | 98.0                      |
| Briar Hill Sandstone                                            |                           |
| 5% REC GUARD 1000                                               | 90.7                      |
| 10% REC GUARD 1000                                              | 90.2                      |
| 15% REC GUARD 1000                                              | 91.7                      |

- Calculation is based on weight gain of untreated control cube.
- ASTM C 642 used 2-inch x 2-inch x 2-inch mortar cubes.
- ASTM C 67 modified to use an 1/8th of a brick instead of 1/2 of a brick, with 3 specimens instead of 5.

**Table 2: Performance of REC GUARD 1000 on Concrete Cubes**

| %Water Exclusion vs. Control after 3 days Immersion |                          |
|-----------------------------------------------------|--------------------------|
| 2-inch Concrete Cubes                               | (NCHRP 244) <sup>1</sup> |
| 10% REC GUARD 1000                                  | 77.8                     |
| 15% REC GUARD 1000                                  | 86.4                     |
| 20% REC GUARD 1000                                  | 82.9                     |

NCHRP 244 (National Cooperative Highway Research Program) was modified to use 2-inch concrete cubes instead of 4-inch concrete cubes.

**Table 3: VOC-Compliant (< 600 g/L) REC GUARD 1000 Formulations Using Organic Solvent**

| REC GUARD 1000; Diluted in solvent, percent concentration |                    |                 |
|-----------------------------------------------------------|--------------------|-----------------|
| REC GUARD 1000                                            | Cyclotetrasiloxane | Organic Solvent |
| 5.0                                                       | 84.0               | 11.0            |
| 10.0                                                      | 68.0               | 22.0            |
| 15.0                                                      | 51.0               | 34.0            |
| 20.0                                                      | 35.0               | 45.0            |
| 25.0                                                      | 17.0               | 42.0            |
| 30.0                                                      | 0.0                | 70.0            |

**Table 4: Performance of REC GUARD 1000 versus a Competitive Material on Ceramic Tiles**

|                                           | % Water Exclusion vs. Control after Immersion for |        |        |        |
|-------------------------------------------|---------------------------------------------------|--------|--------|--------|
|                                           | 24 hours                                          | 4 days | 5 days | 7 days |
| 5% REC GUARD 1000 kerosene                | 70.0                                              | 70.2   | 68.9   | 66.3   |
| 5% Competitive product in kerosene        | 69.6                                              | 65.4   | 62.4   | 55.7   |
| 5% REC GUARD 1000 in mineral spirits      | 83.2                                              | 81.8   | 80.1   | 77.5   |
| 5% Competitive product in mineral spirits | 83.6                                              | 82.6   | 81.7   | 80.0   |

## DIRECTIONS FOR USE

### DILUTION

**REC GUARD 1000** should be diluted in organic solvents such as aliphatic hydrocarbons, aromatic hydrocarbons, anhydrous alcohol, chlorinated solvents, or low molecular weight polydimethyl-siloxanes, such as Cyclotetrasiloxane before use. Recommended dilution level for neutral substrates, such as brick and sandstone, is 1 part **REC GUARD 1000** to 19 parts solvent.

For alkaline substrates, such as mortar and concrete, **REC GUARD 1000** should be diluted in organic or silicone solvent at 1 part **REC GUARD 1000** to 9 parts solvent.

Laboratory performance data for 5, 10 and 15 percent active solids levels of **REC GUARD 1000** are shown in Table 1. Laboratory results for modified NCHRP 244 testing are shown in Table 2. The performance may vary depending on actives level applied to different substrates. Optimization of the actives level may be required to obtain maximum performance on your selected substrate(s).

VOC-compliant formulations with less than 600 g/L VOC can be achieved with **REC GUARD 1000** by using a VOC-compliant solvent such as Cyclotetrasiloxane. Examples of VOC-compliant formulations can be found in Table 3.

Laboratory performance data on ceramic tile comparing **REC GUARD 1000** versus a competitive product at 5 percent active solids level in two different solvents is shown in Table 4.

### APPLICATION

Methods of application include airless sprayer, roller and brush. When a brush or roller is used, repeated applications should be made until the surface remains moist for a few minutes. If an airless sprayer is used, application should continue until the substrate is thoroughly saturated. On vertical applications, material should be applied from the bottom up and achieve a 6 to 8 inch rundown. Sprayers should be fitted with solvent-resistant hoses and gaskets.

To ensure compatibility and the desired water repellent result, a test application is necessary on each surface to be treated. Surfaces should be free of standing water, surface dirt, dust, oils and other contaminants. Formulated **REC GUARD 1000** may be applied to damp or wet surfaces, although dry surfaces are preferred to achieve maximum penetration into the substrate.

As with most repellents, plants or shrubs should be protected from exposure to the treatment. Windows and any other material that should not be treated must be protected or cleaning with solvents may be necessary to remove the treatment. Likewise, if applied as spray, control over spray and drift to prevent contamination of nearby substrates, especially windows, vehicles, etc.

## PACKAGING

**REC GUARD 1000** is available in various packaging and can be supplied on request.

## STORAGE

### SHELF LIFE

**REC GUARD 1000** has a shelf life of 6 months when stored in warehouse conditions below 30°C in the original, unopened packs.

### STORAGE CONDITIONS

Store under warehouse conditions, below 30°C in the original, unopened packs.

For further information, refer to the Product Material Safety Data Sheet.

## HEALTH & SAFETY

As with all construction chemical products, caution should always be exercised. Protective clothing such as gloves and goggles should be worn. Treat any splashes to the skin or eyes with fresh water immediately. Should any of the products be accidentally swallowed, do not induce vomiting, but call for medical assistance immediately.

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