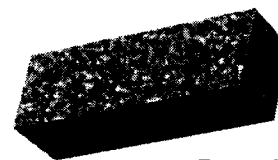




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SECTION C – PROTECTIVE WATER REPELLENTS

The testing described below evaluates the suitability of water repellent treatments.

The surface treatments evaluated were selected for their suitability for application based on the following selection criteria

1. Weatherproofing properties
2. Color change
3. Ease of application

DESCRIPTIONS OF PRODUCTS EVALUATED – Protective Water Repellents

Sure Klean® Weather Seal Natural Stone Treatment – A modified siloxane water repellent developed for limestone, marble and most other traditional masonry surfaces. Natural Stone Treatment penetrates deeply to provide long-lasting protection without altering the natural appearance of the substrate.

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control – A clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, cast stone, and concrete block without altering the natural appearance. Blok-Guard® & Graffiti Control penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering as well as long-lasting protection against many types of graffiti.

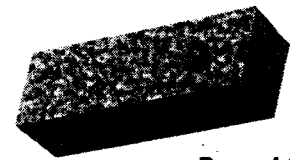
Stand Off® Paver Enhancer – A solvent-based blend of high-quality siloxanes modified to provide excellent water repellency and color enhancement to interlocking concrete, fired clay, porous tile and many types of natural stone surfaces. Penetrates and reacts with the surface to form a chemical bond, provided long-term durability, alkali resistance and superior breathability

SAMPLE PREPARATION – Protective Water Repellents

The submitted samples were allowed to dry, and reabsorb atmospheric humidity for 24 hours prior to treatment. Sure Klean® Weather Seal Natural Stone Treatment and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control were applied in a wet-on-wet brush application and Stand Off® Paver Enhancer was applied in a single saturating application. All treatments were allowed to cure at least 72 hours prior to testing.



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TEST METHODS – Protective Water Repellents

Water Absorption Tube Test: RILEM II.4, 5.0 milliliters, 20 minutes

The water absorption tube test simulating wind driven and wind blown rain conditions was also performed. Tests were run with 5.0-milliliter head pressures. Filled to 5 milliliters, a water absorption tube produces a 98 mph dynamic wind pressure. See RILEM II.4 Tech Note for additional information.

The ranking system used to evaluate the effectiveness of the products applied to each submitted sample is as follows:

AA = "Above Average" correlates to less than or equal to 20% of the maximum untreated absorption.

A = "Average" correlates to less than or equal to 50% of the maximum untreated absorption

BA = "Below Average" correlates to greater than 50% of the maximum untreated absorption.

EXAMPLE: If RILEM tubes applied to an untreated sample result in loss of 5 ml of water or more, then:

A rating of **AA** Above Average water repellent performance would require loss of no more than 5 ml X 20% = 1 ml.

A rating of **A** Average water repellent performance would require loss of no more than 5 ml X 50% = 2.5ml.

A rating of **BA** Below Average water-repellent performance would be reported for treatments which result in a loss of more than 50% X 5ml = 2.5ml+.

Test Results – Protective Water Repellents

Water Absorption Tube Test: RILEM II.4, 5.0 milliliters, 20 Minutes

AA = Above Average

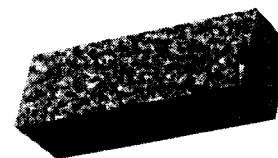
AA = Average

BA = Below Average

"Wisconsin Castle Rock (Gray Buff)"	Results	Ranking
Untreated Control	0.5 mL loss	---
NST	0.0 mL loss	AA
Blok-Guard®	0.0 mL loss	AA
Paver Enhancer	0.0 mL loss	AA
"Wisconsin Castle Rock (Full Color)"	Results	Ranking
Untreated Control	.4 mL loss	---
NST	0.0 mL loss	AA
Blok-Guard®	0.0 mL loss	AA
Paver Enhancer	0.0 mL loss	AA
"Chilton Rustic"	Results	Ranking
Untreated Control	2.9 mL loss	---
NST	0.0 mL loss	AA
Blok-Guard®	0.0 mL loss	AA
Paver Enhancer	0.0 mL loss	AA
"Chilton Country Squire"	Results	Ranking
Untreated Control	0.0 mL loss	---
NST	0.0 mL loss	AA*
Blok-Guard®	0.0 mL loss	AA*
Paver Enhancer	0.0 mL loss	AA*



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Test Results – Protective Water Repellents Continued

“Fond du Lac Castle Rock”	Results	Ranking
Untreated Control	0.0 mL loss	---
NST	0.0 mL loss	<u>AA*</u>
Blok-Guard®	0.0 mL loss	<u>AA*</u>
Paver Enhancer	0.0 mL loss	<u>AA*</u>
“Fond du Lac Rustic”	Results	Ranking
Untreated Control	0.0 mL loss	---
NST	0.0 mL loss	<u>AA*</u>
Blok-Guard®	0.0 mL loss	<u>AA*</u>
Paver Enhancer	0.0 mL loss	<u>AA*</u>
“Fond du Lac Country Squire”	Results	Ranking
Untreated Control	0.0 mL loss	---
NST	0.0 mL loss	<u>AA*</u>
Blok-Guard®	0.0 mL loss	<u>AA*</u>
Paver Enhancer	0.0 mL loss	<u>AA*</u>

* The true improvement in water repellency cannot be accurately determined due to the density of the samples and their low absorption of water.

CONCLUSIONS – Protective Water Repellents

Based upon laboratory evaluations, all of the water repellents tested exhibited above average water repellency on all types of the dolomitic limestone veneer samples. Sure Klean® Weather Seal Blok-Guard® & Graffiti Control and Stand Off® Paver Enhancer also enhanced the natural color of the submitted samples, while Sure Klean® Weather Seal Natural Stone Treatment did not change the appearance of the samples.

RECOMMENDATIONS – Protective Water Repellents

Based on evaluations, all of the water repellents tested can be recommended for job-site testing to provide water repellency for the dolomitic limestone veneer samples submitted by Buechel Stone Corporation, Chilton, WI. For veneer types “Chilton Country Squire”, “Fond du Lac Castle Rock”, “Fond du Lac Rustic”, and “Fond du Lac Country Squire” immersion testing should be done at a later date when more samples are available. Sure Klean® Weather Seal Blok-Guard® & Graffiti Control and Stand Off® Paver Enhancer can also be recommended for enhancing the natural color of the samples.

Apply all products in accordance with the manufacturer’s recommendation provided on container labels and product data sheets. On-site testing should be conducted to determine the most appropriate water-repellent product and procedures for a particular project. See product literature for additional application and product information.