



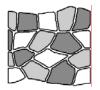
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Attachments

Technical Services TECH Note RILEM Tube Test Procedures Product Data literature for all products evaluated





Page 1

Submitted Information

For: Michael Trotta cc: Steve Dean

John Bourne

Subject: Briar Hill Stone Company

Glenmont, OH

Date:

Project: 0509-16 PTP

Samples Submitted: 7 types of sandstone

Sample	Color	Size
"Sandstone #1 - Pleasant Hill Buff"	Beige	
"Sandstone #2 - Orchard Buff"	Tan/Brown	
"Sandstone #3 - Copper Variegated"	Orange/Yellow	
"Sandstone #4 - Sunset Blush"	Orange/Red	12" x 12" x 1"
"Sandstone #5 - Burgundy Brownstone"	Brown/Red	
"Sandstone #6 - Scioto Buff"	Tan	
"Sandstone #7 - Scioto Blue/Gray"	Gray/Green	

Submitted by: Michael Trotta





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Purpose of Testing

Seven types of sandstone were submitted to PROSOCO, Inc.'s Testing Laboratory with a request to determine the optimum dilution of appropriate new construction cleaning products for complete removal of laboratory applied mortar while limiting any surface alterations to the submitted samples. Additionally, the effectiveness of water repellents, graffiti control products and stain repellents suitable for sandstone were evaluated.

New Construction Cleaning – Sure Klean[®] Light Duty Concrete Cleaner and Enviro Klean[®] Safety Klean were evaluated for removal of laboratory applied mortar while limiting surface alterations. The surface alteration evaluation was visually determined based upon perceived discoloration or erosion/etching of the samples.

To simulate new construction soiling, the samples were placed on a bench with finished surface facing upward. Hollow cylinders measuring 50 mm in diameter and 75 mm tall were positioned on top of the samples and filled with a wet mixture of Type N cementitious mortar. The wet mortar-filled cylinder was allowed to remain in contact with the samples for 10 minutes before removal.

Heavy deposits of mortar were removed with dry scraping after 24 hours. Prepared cleaning solutions were then evaluated for their effectiveness in removing residual Type N mortar after 7, 14 and 21 days of curing. A visual examination was also made to determine if the tested cleaners caused any surface alterations to the submitted samples based on the following:

<u>Surface Finish Removal</u> is the visual examination of the sample comparing the surface finish of the untreated control surface to the surface finish cleaned with selected product(s) at given dilutions.

<u>Substrate Deterioration</u> is the visual examination of the sample comparing the surface of the untreated control to surfaces cleaned with selected product(s) at given dilutions looking for any potential erosion/digestion of the sample.

<u>Color Change</u> is the visual examination comparing the color of the untreated control surface to color of surfaces cleaned with selected products at given dilutions.

<u>Staining</u> is the visual examination for changes that are the result of a chemical reaction that leaves a staining precipitate.

Protective Water Repellency – Sure Klean[®] Weather Seal Natural Stone Treatment WB, Consolideck[®] Saltguard[®] WB, Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control, Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II, and Stand Off[®] SLX100 Water & Oil Repellent were evaluated on the submitted samples for their ability to provide water repellency.

Graffiti Control – Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control and Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II were evaluated for their ability to repel graffiti from the submitted samples. Sure Klean[®] Fast Acting Stripper and Defacer Eraser[®] Graffiti Wipe were evaluated for their ability to remove graffiti from the submitted samples.

Stain Repellency – Stand Off[®] SLX100 Water & Oil Repellent was evaluated for its ability to repel stains from the submitted samples.





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Products Evaluated

New Construction Cleaning Products Evaluated

Sample	Product	Dilution
All Submitted Samples	Sure Klean [®] Light Duty Concrete Cleaner	1:2, 1:3
All Submitted Samples	Enviro Klean [®] Safety Klean	1:2, 1:3

Protective Water Repellent Products Evaluated

Sample	Product	Dilution
	Sure Klean [®] Weather Seal Natural Stone Treatment WB	Concentrate
	Consolideck [®] Saltguard [®] WB	Concentrate
All Submitted Samples	Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control	Concentrate
	Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II	Concentrate
	Stand Off [®] SLX100 Water & Oil Repellent	Concentrate

Graffiti Repellent Products Evaluated

Sample	Product	Dilution
All Submitted Samples	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Concentrate
All Submitted Samples	Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II	Concentrate

Graffiti Removal Products Evaluated

Sample	Product	Dilution
All Submitted Samples	Sure Klean [®] Fast Acting Stripper	Concentrate
All Submitted Samples	Defacer Eraser® Graffiti Wipe	Concentrate

Stain Repellent Products Evaluated

Sample	Product	Dilution
All Submitted Samples	Stand Off [®] SLX100 Water & Oil Repellent	Concentrate





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New Construction Cleaning

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove Type N mortar from the submitted samples.

Type N cementitious mortar was prepared in compliance with the manufacturer's instructions, applied to the natural stone surface and allowed to cure for 7, 14 and 21 days. Mortar removal was accomplished using chemical assistance and a high-pressure water rinse with pressure rinsing equipment. The removal of Type N mortar was visually evaluated after 7, 14 and 21 days of curing.

<u>Description of Products Evaluated</u> - New Construction Cleaning

Sure Klean® Light Duty Concrete Cleaner – Removes common construction and atmospheric staining from smooth architectural and engineered concrete. This general-purpose, non-etching, acidic cleaner removes rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Light Duty Concrete Cleaner adds depth to colors and brightens white matrices and exposed aggregate.

Enviro Klean® Safety Klean – An effective, safe, alternative to acidic compounds for cleaning brick, tile, and concrete surfaces. Safety Klean rids new masonry construction of excess mortar, dirt and other common job site soiling. It's ideal for projects where traditional acidic cleaners are not allowed. Non-fuming Safety Klean contains no hydrochloric or other traditional inorganic acids and is safe for use on and around most metal surfaces. Always test. Additionally, it is up to 70 percent more effective than citric and glycolic acids and 50 percent more effective than phosphoric acid.

Test Method – New Construction Cleaning

Dilution ratios refer to mixtures of concentrated cleaner: fresh water. Chemical cleaners were evaluated using the following procedure:

- 1. Pre-wet the surface with water.
- 2. Apply the cleaner.
- 3. Allow the appropriate dwell time, as specified.

Light Duty Concrete Cleaner	3-5 minutes
Safety Klean	3-5 minutes

4. Pressure rinse thoroughly.*

^{*}Pressure Rinsing Equipment – Masonry washing equipment generating approximately 700-800 psi with a water flow rate of 8 gallons per minute delivered through a 45 degree fan spray tip was used for rinsing.





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Test Results - New Construction Cleaning

% removal

"Sandstone #	#1 - Pleasant Hil	l Buff"		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	100%	100%	80%
Sule Riean Light Duty Concrete Cleaner	1:3	100%	98%	80%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Riean Salety Riean	1:3	100%	100%	100%
"Sandston	e #2 - Orchard B	Suff"		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	98%	95%	80%
Sure Rieari Light Duty Concrete Cleaner	1:3	98%	95%	80%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Environtean Galety Rean	1:3	100%	100%	100%
"Sandstone #	3 - Copper Varie	gated"		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	98%	98%	85%
Outo Mean Light Duty Concrete Cleaner	1:3	95%	95%	80%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Livilo Reali Galety Reali	1:3	100%	100%	100%
"Sandstone	e #4 - Sunset Blu	ush"		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	98%	90%	70%
Cure rican Light Duty Concrete Cleaner	1:3	90%	90%	60%
Enviro Klean [®] Safety Klean	1:2	100%	100%	98%
•	1:3	100%	100%	98%
"Sandstone #5	- Burgundy Brov	vnstone"		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	95%	90%	80%
Care rican Light Buty Concrete Cleaner	1:3	95%	90%	80%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
•	1:3	100%	100%	100%
"Sandstor	ne #6 - Scioto Bu	uff"		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	99%	95%	80%
Caro I dan Eight Daty Control Clothol	1:3	95%	90%	80%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
<u> </u>	1:3	100%	100%	100%
"Sandstone	#7 - Scioto Blue/	'Gray"		_
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	100%	85%	80%
Caro Maari Light Daty Controlle Cicarie	1:3	100%	85%	80%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
	1:3	100%	100%	100%





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Test Results – Limiting Surface Alterations

Substrate: Sandstone	Pigment	Color: "Sandston	ie #1 - Pleasant F	Hill Buff"	
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Light Duty	1:2	0	0	0	0
Concrete Cleaner	1:3	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Elivilo Rieali Salety Rieali	1:3	0	0	0	0
Substrate: Sandstone	Pigment	Color: "Sandston	e #2 - Orchard B	uff"	
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Light Duty	1:2	0	0	0	0
Concrete Cleaner	1:3	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Elivilo Rieali Salety Rieali	1:3	0	0	0	0
Substrate: Sandstone	Pigment	Color: "Sandston	ie #3 - Copper Va	ariegated"	
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Light Duty	1:2	0	0	0	0
Concrete Cleaner	1:3	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Riean Salety Riean	1:3	0	0	0	0
	0)))	•
Substrate: Sandstone		Color: "Sandston	, and the second	•	,
Substrate: Sandstone Product		ŭ	, and the second	•	Staining
	Pigment	Color: "Sandston Surface Finish	e #4 - Sunset Blu Substrate	ush" Color	Staining 0
Product	Pigment Dilution	Color: "Sandston Surface Finish Removal	e #4 - Sunset Blu Substrate Deterioration	ush" Color Change	
Product Sure Klean [®] Light Duty Concrete Cleaner	Pigment Dilution 1:2	Color: "Sandston Surface Finish Removal 0	e #4 - Sunset Blu Substrate Deterioration 0	Color Change 0	0
Product Sure Klean® Light Duty	Dilution 1:2 1:3	Color: "Sandston Surface Finish Removal 0	e #4 - Sunset Blu Substrate Deterioration 0 0	ush" Color Change 0	0
Product Sure Klean [®] Light Duty Concrete Cleaner	Pigment Dilution 1:2 1:3 1:2 1:3	Color: "Sandston Surface Finish Removal 0 0	Substrate Deterioration 0 0 0 0	Color Change 0 0 0	0 0 0
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product	Pigment Dilution 1:2 1:3 1:2 1:3	Color: "Sandston Surface Finish Removal 0 0 0	Substrate Deterioration 0 0 0 0	Color Change 0 0 0	0 0 0
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment	Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish	Substrate Deterioration 0 0 0 0 0 se #5 - Burgundy Substrate	Color Change 0 0 0 0 Brownstone"	0 0 0 0
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution	Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish Removal	Substrate Deterioration 0 0 0 0 substrate Deterioration 0 Substrate Deterioration	Color Change 0 0 0 0 Brownstone" Color Change	0 0 0 0 0 Staining
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty Concrete Cleaner	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution 1:2	Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish Removal 0	Substrate Deterioration 0 0 0 0 0 substrate Deterioration 0 0 0 te #5 - Burgundy Substrate Deterioration 0	Color Change 0 0 0 0 Brownstone" Color Change 0	0 0 0 0 0 Staining
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution 1:2 1:3	Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish Removal 0 0	substrate Deterioration 0 0 0 0 0 e #5 - Burgundy Substrate Deterioration 0 0 0 0 0 0 0 0 0 0 0 0 0	Color Change 0 0 0 0 Brownstone" Color Change 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 Staining 0
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty Concrete Cleaner	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution 1:2 1:3 1:2 1:3 1:2 1:3	Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish Removal 0 0 0	Substrate Deterioration 0 0 0 0 0 se #5 - Burgundy Substrate Deterioration 0 0 0 0 0 0 0 0 0 0 0 0 0	Color Change 0 0 0 0 Brownstone" Color Change 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 Staining 0 0
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution 1:2 1:3 1:2 1:3 1:2 1:3	Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish Removal 0 0 0 0 0 0 0 0 0 0	Substrate Deterioration 0 0 0 0 0 se #5 - Burgundy Substrate Deterioration 0 0 0 0 0 0 0 0 0 0 0 0 0	Color Change 0 0 0 0 Brownstone" Color Change 0 0 0 0 0 0 0 0 0 0 0	0 0 0 0 0 Staining 0 0
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty Concrete Cleaner	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Pigment	Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish Removal Surface Finish Removal O Surface Finish	substrate Deterioration 0 0 0 0 0 e #5 - Burgundy Substrate Deterioration 0 0 0 e #5 - Scioto Buf Substrate	Color Change 0 0 0 0 Brownstone" Color Change 0 0 f" Color	0 0 0 0 0 Staining 0 0 0
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution	Color: "Sandston Surface Finish Removal 0 0 0 0 Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston Surface Finish Removal 0 Surface Finish Removal	Substrate Deterioration 0 0 0 0 0 e #5 - Burgundy Substrate Deterioration 0 0 substrate Deterioration 0 0 0 te #6 - Scioto Buf Substrate Deterioration	Color Change 0 0 0 0 Brownstone" Color Change 0 0 f" Color Change	0 0 0 0 0 Staining 0 0 0
Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty Concrete Cleaner Enviro Klean® Safety Klean Substrate: Sandstone Product Sure Klean® Light Duty Concrete Cleaner	Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution 1:2 1:3 1:2 1:3 Pigment Dilution 1:2 1:3 Pigment Dilution	Color: "Sandston Surface Finish Removal 0 0 0 0 Color: "Sandston Surface Finish Removal 0 0 Color: "Sandston Surface Finish Removal 0 0 0 Color: "Sandston 0 0 Color: "Sandston	Substrate Deterioration 0 0 0 0 0 e #5 - Burgundy Substrate Deterioration 0 0 substrate Deterioration 0 0 0 0 0 0 0 0 0 0 0 0 0	Color Change 0 0 0 0 Brownstone" Color Change 0 0 f" Color Change 0 0 0 0 0 0	0 0 0 0 0 Staining 0 0 0 Staining

0 - No change

3 - change - heavy

1 - change - slight

4 - change - excessive

2 - change - moderate





PROSOCO, Inc. Page 7

Test Results – Limiting Surface Alterations

Substrate: Sandstone	Pigment Color: "Sandstone #7 - Scioto Blue/Gray"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Light Duty	1:2	0	0	0	0
Concrete Cleaner	1:3	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Riean Salety Riean	1:3	0	0	0	0

0 – No change

3 - change - heavy

1 – change – slight

4 - change - excessive

2 - change - moderate





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Photographs - New Construction Cleaning

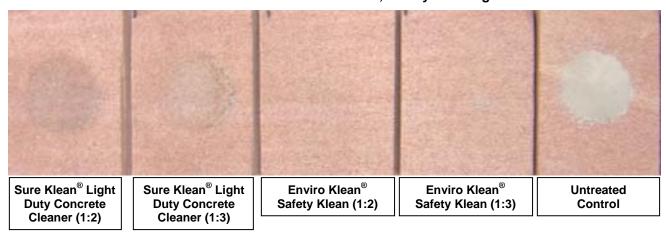
"Sandstone #4 - Sunset Blush"; 7 Day Cleaning



"Sandstone #4 - Sunset Blush"; 14 Day Cleaning



"Sandstone #4 - Sunset Blush"; 21 Day Cleaning







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Photographs – Limiting Surface Alterations

"Sandstone #4 - Sunset Blush"; Limiting Surface Alterations







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Conclusions - New Construction Cleaning

Based on the test results, Enviro Klean[®] Safety Klean performed well in removing excess mortar from the submitted samples even after allowing the mortar to remain on the surface of the samples for 21 days using Type N mortar under ideal curing conditions.

It is recommended that the selected cleaner always be used in the lowest possible concentration. To facilitate easier removal of excess mortar and construction dirt while minimizing any potential surface alterations, clean within 7 days of construction when using Type N mortar.

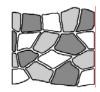
Recommendations - New Construction Cleaning

Recommendations for cleaning for the sandstone submitted by Briar Hill Stone Company, Glenmont, OH are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while limiting surface alterations to the submitted samples.

Sample	New Construction Cleaning (Type N mortar, 21 day cleaning)
All Submitted Samples	Enviro Klean [®] Safety Klean (1:2) OR (1:3)

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





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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

Description of Products Evaluated – Protective Water Repellents

Sure Klean® Weather Seal Natural Stone Treatment WB – A low odor, water-based solution of potassium methyl siliconate developed to effectively treat a wide range of natural stone and masonry surfaces. Natural Stone Treatment WB provides long-lasting repellency without altering the natural appearance of the substrate. Natural Stone Treatment WB is used as a surface treatment on natural stone and masonry surfaces to impart a water-repellent surface and reduce water absorption into the substrate. Unlike conventional siliconate water repellents, Natural Stone Treatment WB has been developed to help prevent surface staining during application.

Consolideck® Saltguard® WB – A ready-to-use water-based, VOC compliant silane/siloxane water repellent and "chloride screen" for the protection of concrete and masonry surfaces. Saltguard® WB penetrates more deeply than conventional water- or solvent-based water repellents. Low odor and alkaline stable, Saltguard® WB is ideal for field or in-plant application to concrete and most masonry surfaces. Saltguard® WB protects horizontal and vertical surfaces from moisture intrusion and chemical attack of chloride salts.

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control – A clear, solvent-based silicone elastomer formulated to weatherproof concrete block and other porous masonry materials. Blok-Guard® & Graffiti Control protects masonry surfaces from repeated graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering. Graffiti removal is fast and easy using Defacer Eraser® Graffiti Wipe. Blok-Guard® & Graffiti Control is easy to apply with low-pressure spray, brush or roller.

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II — A clear-drying, water-based silicone emulsion for weatherproofing concrete block and other porous masonry materials. Blok-Guard® & Graffiti Control II also protects masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control II protects exterior walls exposed to normal weathering. Graffiti removal from treated surfaces is fast and easy using Defacer Eraser® Graffiti Wipe. Blok-Guard® & Graffiti Control II is easy to apply with low-pressure spray, brush or roller.

Stand Off® SLX100 Water & Oil Repellent – Combines water and oil repellency on most substrates to prevent staining by waterborne and oily substances. This modified "neat" silane system offers invisible protection and low volatility. The small molecular structure of SLX100 allows for maximum penetration at coverage rates higher than that of conventional silanes. Depth of penetration is controlled by the application rate (loading rate). This makes SLX100 ideal for protecting granite and other dense, color-sensitive surfaces.

Sample Preparation – Protective Water Repellents

The submitted samples were scored and allowed to dry for at least 24 hours prior to treatment. The treatments were then applied to the submitted samples by brush as recommended in the current PROSOCO, Inc. Product Data Sheet instructions. All treatments were allowed to cure for at least 72 hours prior to testing.





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Test Methods - Protective Water Repellents

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

The water absorption tube test simulating wind driven and wind blown rain conditions was performed. Tests were run with vertical 5.0-milliliter head pressures. Filled to 5 milliliters, a water absorption tube produces a 103 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 <u>A</u>Average water repellent performance would require loss of no more than:

5 ml X 50% = 2.5 ml.

A rating of <u>BA</u> Below Average water repellent performance would be reported for treatments which result in a loss of more than:

5 ml X 50% = 2.5 ml.





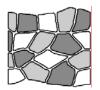
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Test Results - Protective Water Repellents

Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes $\underline{AA} = \text{Above Average}$ $\underline{A} = \text{Average}$ $\underline{BA} = \text{Below Average}$

"Sandstone #1 - Pleasant Hill Buff"	Results in mL loss	Ranking
Untreated Control	-5.0	
Sure Klean® Weather Seal Natural Stone Treatment WB	-0.0	AA
Consolideck [®] Saltguard [®] WB	-4.4	BA
Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control	-0.0	AA
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	-0.0	AA
Stand Off® SLX100 Water & Oil Repellent	-0.0	AA
"Sandstone #2 - Orchard Buff"	Results in mL loss	Ranking
Untreated Control	-5.0	
Sure Klean® Weather Seal Natural Stone Treatment WB	-0.0	AA
Consolideck [®] Saltguard [®] WB	-4.5	BA
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	-0.0	AA
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	AA
"Sandstone #3 - Copper Variegated"	Results in mL loss	Ranking
Untreated Control	-5.0	
Sure Klean® Weather Seal Natural Stone Treatment WB	-0.0	AA
Consolideck® Saltguard® WB	-4.8	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	-0.0	<u>AA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	-0.0	AA
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
"Sandstone #4 - Sunset Blush"	Results in mL loss	<u>Ranking</u>
Untreated Control	-5.0	
Sure Klean® Weather Seal Natural Stone Treatment WB	-0.0	<u>AA</u>
Consolideck [®] Saltguard [®] WB	-5.0	BA
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	-0.0	<u>AA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
"Sandstone #5 - Burgundy Brownstone"	Results in mL loss	<u>Ranking</u>
Untreated Control	-5.0	
Sure Klean® Weather Seal Natural Stone Treatment WB	-0.0	<u>AA</u>
Consolideck® Saltguard® WB	-5.0	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	-0.0	<u>AA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>





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Test Results - Protective Water Repellents

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

AA = Above Average

 $\underline{\mathbf{A}}$ = Average

BA = Below Average

"Sandstone #6 - Scioto Buff"	Results in mL loss	<u>Ranking</u>
Untreated Control	-0.8	
Sure Klean® Weather Seal Natural Stone Treatment WB	-0.0	<u>AA</u>
Consolideck [®] Saltguard [®] WB	-0.0	<u>AA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	-0.0	<u>AA</u>
Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
"Sandstone #7 - Scioto Blue/Gray"	Results in mL loss	<u>Ranking</u>
"Sandstone #7 - Scioto Blue/Gray" Untreated Control	-0.3	Ranking
<u> </u>		Ranking AA
Untreated Control	-0.3	
Untreated Control Sure Klean® Weather Seal Natural Stone Treatment WB	-0.3 -0.0	 <u>AA</u>
Untreated Control Sure Klean [®] Weather Seal Natural Stone Treatment WB Consolideck [®] Saltguard [®] WB	-0.3 -0.0 -0.0	 <u>AA</u> <u>AA</u>

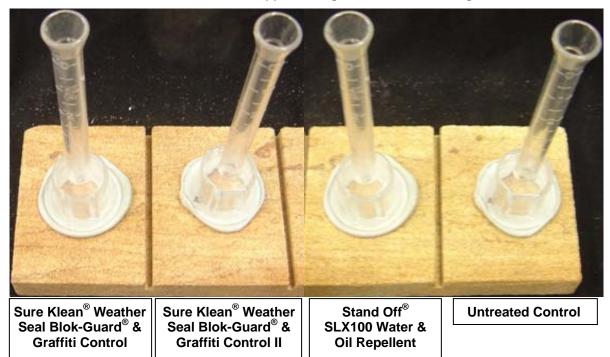


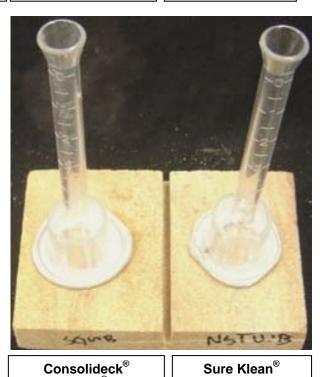


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Photographs - Protective Water Repellents

"Sandstone #3 - Copper Variegated"; RILEM Testing





Weather Seal Natural Stone Treatment WB

Saltguard® WB





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Conclusions – Protective Water Repellents

Test results indicate that all of the water repellents tested, Consolideck® Saltguard® WB, except exhibited above average water repellency on the submitted samples. In addition, Sure Klean® Weather Seal Blok-Guard® & Graffiti Control and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II provided slight to moderate color enhancement to the submitted samples. Sure Klean® Weather Seal Natural Stone Treatment WB, Consolideck® Saltguard® WB and Stand Off® SLX100 Water & Oil Repellent caused no noticeable color change on any of the submitted samples.

Recommendations – Protective Water Repellents

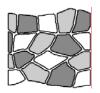
Recommendations for water repellent treatments for the sandstone submitted by Briar Hill Stone Company, Glenmont, OH are provided in the chart below. Recommendations are based on the treatments that proved most effective at providing water repellency on the submitted sandstone.

Sample	Water Repellents
"Sandstone #1 - Pleasant Hill Buff" "Sandstone #2 - Orchard Buff" "Sandstone #3 - Copper Variegated" "Sandstone #4 - Sunset Blush" "Sandstone #5 - Burgundy Brownstone"	Sure Klean [®] Weather Seal Natural Stone Treatment WB OR Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control OR Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II OR Stand Off [®] SLX100 Water & Oil Repellent
"Sandstone #6 - Scioto Buff" "Sandstone #7 - Scioto Blue/Gray"	Sure Klean [®] Weather Seal Natural Stone Treatment WB OR Consolideck [®] Saltguard [®] WB OR Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control OR Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II OR Stand Off [®] SLX100 Water & Oil Repellent

The ability of a water repellent treatment to prevent the ingress of water is affected by a variety of factors. Therefore, on-site testing should be carried out for all installations with the recommended systems to ensure job site workmanship yields equivalent results.

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.





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Graffiti Control

This evaluation compares the effectiveness of graffiti control treatments in preventing staining of enamel spray paint and permanent markers.

<u>Description of Products Evaluated</u> – Graffiti Control

Products Evaluated for Graffiti Repellency

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control – A clear, solvent-based silicone elastomer formulated to weatherproof concrete block and other porous masonry materials. Blok-Guard® & Graffiti Control protects masonry surfaces from repeated graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering. Graffiti removal is fast and easy using Defacer Eraser® Graffiti Wipe. Blok-Guard® & Graffiti Control is easy to apply with low-pressure spray, brush or roller.

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II – A clear-drying, water-based silicone emulsion for weatherproofing concrete block and other porous masonry materials. Blok-Guard® & Graffiti Control II also protects masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control II protects exterior walls exposed to normal weathering. Graffiti removal from treated surfaces is fast and easy using Defacer Eraser® Graffiti Wipe. Blok-Guard® & Graffiti Control II is easy to apply with low-pressure spray, brush or roller.

Products Evaluated for Graffiti Removal

Defacer Eraser[®] **Graffiti Wipe** – An easy-to-use graffiti remover that does not contain methanol, methylene chloride or other "halogenated" solvents prohibited on many projects. Graffiti Wipe removes a variety of graffiti stains from most smooth masonry, wood and metal surfaces.

Sure Klean[®] **Fast Acting Stripper** – A thixotropic stripping compound formulated specifically for removal of high strength paints and coatings such as epoxies, polyurethanes, and floor enamels. Additionally, Fast Acting Stripper dissolves most spray paints, marking pens, lacquers and other graffiti.

Graffiti Agents

Interior/Exterior Spray Paint (Red) Permanent Marker (Green) Permanent Marker (Red) Permanent Marker (Black)





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Sample Preparation - Graffiti Control

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II were applied by brush to sections of the submitted samples in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions. The samples were then allowed to cure for 24 hours. A visual adverse effects evaluation was made and then the graffiti agents were applied to the substrates.

Spray paint and markers were applied as graffiti agents to all treated surfaces no sooner than one day following application of Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II. Removal of the graffiti agents was attempted 24 hours after application, using Defacer Eraser[®] Graffiti Wipe and Sure Klean[®] Fast Acting Stripper.

Test Methods - Graffiti Control

Chemical cleaners were evaluated using the following procedure:

- 1. Apply the graffiti removal product to a dry surface, soiled with graffiti.
- 2. Allow appropriate dwell time:

- 3. Pressure rinse thoroughly until water runs clear.*
- 4. Allow the surface to dry thoroughly and visually examine to determine effectiveness.

*Pressure Rinsing Equipment – Masonry washing equipment generating approximately 700-800 psi with a water flow rate of 8 gallons per minute delivered through a 45 degree fan spray tip was used for rinsing.





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Test Results - Graffiti Control

	"Sandstone #1 - Pleasant Hill Buff"								
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	60%	40%	80%	60%	60%				
Graffiti Wipe	10%	10%	80%	80%	45%				
Blok-Guard [®] & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	90%	90%	90%	90%	90%				
Graffiti Wipe	90%	50%	80%	70%	73%				
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	70%	50%	60%	70%	63%				
Graffiti Wipe	80%	50%	60%	70%	65%				
	"Sand	stone #2 - Orc	hard Buff"						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	60%	70%	50%	20%	50%				
Graffiti Wipe	10%	1%	50%	80%	35%				
Blok-Guard [®] & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	70%	80%	90%	95%	84%				
Graffiti Wipe	80%	20%	90%	90%	70%				
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	60%	70%	50%	30%	53%				
Graffiti Wipe	20%	10%	50%	90%	43%				
	"Sandsto	ne #3 - Coppe	r Variegated"						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	80%	80%	70%	90%	80%				
Graffiti Wipe	20%	10%	70%	95%	49%				
Blok-Guard [®] & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	80%	95%	95%	95%	91%				
Graffiti Wipe	85%	90%	90%	90%	89%				
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	80%	70%	50%	85%	71%				
Graffiti Wipe	20%	10%	50%	85%	41%				
	"Sand	stone #4 - Sun	set Blush"						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	90%	80%	80%	90%	85%				
Graffiti Wipe	40%	30%	80%	90%	60%				
Blok-Guard [®] & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	80%	95%	90%	95%	90%				
Graffiti Wipe	95%	80%	90%	95%	90%				
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	90%	80%	50%	70%	73%				
Graffiti Wipe	40%	40%	50%	70%	50%				





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Test Results - Graffiti Control

"Sandstone #5 - Burgundy Brownstone"									
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	85%	80%	80%	80%	81%				
Graffiti Wipe	20%	40%	90%	90%	60%				
Blok-Guard [®] & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	80%	85%	90%	90%	86%				
Graffiti Wipe	95%	70%	85%	85%	84%				
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	85%	80%	85%	85%	84%				
Graffiti Wipe	60%	60%	85%	85%	73%				
	"Sand	dstone #6 - Sci	oto Buff"						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	85%	70%	50%	95%	75%				
Graffiti Wipe	40%	40%	50%	85%	54%				
Blok-Guard [®] & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	85%	90%	90%	95%	90%				
Graffiti Wipe	95%	75%	90%	95%	89%				
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	90%	70%	50%	95%	76%				
Graffiti Wipe	90%	40%	50%	85%	66%				
	"Sandst	one #7 - Scioto	Blue/Gray"						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	75%	70%	60%	98%	76%				
Graffiti Wipe	10%	20%	60%	70%	40%				
Blok-Guard [®] & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	98%	90%	98%	98%	96%				
Graffiti Wipe	98%	90%	98%	98%	96%				
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal				
Fast Acting Stripper	95%	70%	60%	98%	81%				
Graffiti Wipe	95%	70%	60%	90%	79%				

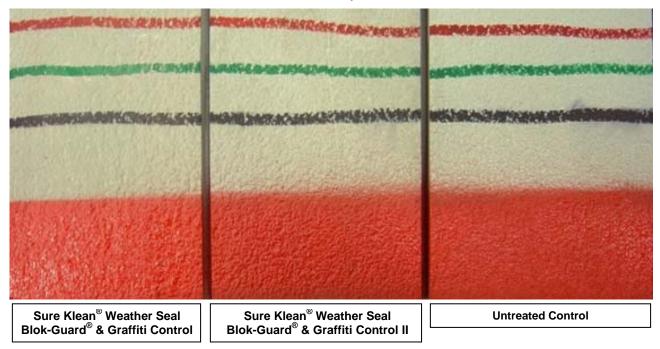




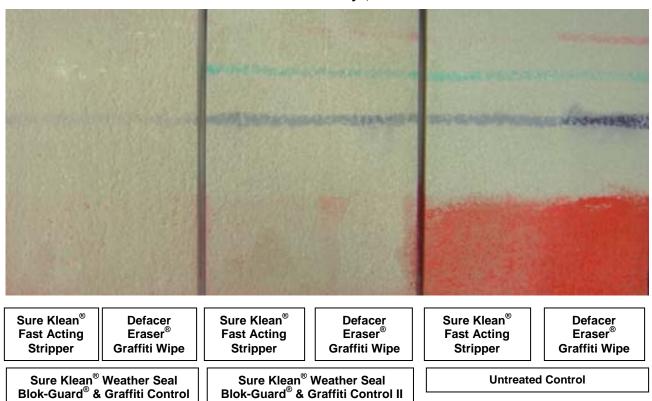
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Photographs - Graffiti Control

"Sandstone #7 - Scioto Blue/Gray"; Before Graffiti Removal



"Sandstone #7 - Scioto Blue/Gray"; After Graffiti Removal







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Conclusions – Graffiti Control

Based upon laboratory evaluations, graffiti removal was improved when the submitted samples were treated with Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control prior to graffiti application. Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II provided a slight color enhancement to the appearance of the submitted samples.

Recommendations - Graffiti Control

Recommendations for graffiti control treatment for each type of sandstone submitted by Briar Hill Stone Company, Glenmont, OH are provided in the chart below. Recommendations are based on the treatment that proved most effective for providing graffiti repellency and the product that was most effective at removing the graffiti on all types submitted.

Sample Type	Graffiti Repellency	Graffiti Removal
All Submitted Samples	Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control	Sure Klean [®] Fast Acting Stripper OR Defacer Eraser [®] Graffiti Wipe

Apply all products in accordance with the manufacturer's recommendation provided on container labels and product data sheets. Because the severity of graffiti varies from location to location, on-site testing should be conducted to determine the most appropriate graffiti control product and procedure for a particular project.





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Stain Repellency

These trials were conducted to determine the effectiveness of treatments in preventing food, oil, and miscellaneous staining on the submitted samples.

Description of Products Evaluated – Stain Repellency

Stain Repellent Treatments

Stand Off® SLX100 Water & Oil Repellent – Combines water and oil repellency on most substrates to prevent staining by waterborne and oily substances. This modified "neat" silane system offers invisible protection and low volatility. The small molecular structure of SLX100 allows for maximum penetration at coverage rates higher than that of conventional silanes. Depth of penetration is controlled by the application rate (loading rate). This makes SLX100 ideal for protecting granite and other dense, color-sensitive surfaces.

Maintenance Cleaner

Enviro Klean® 2010 All Surface Cleaner – A "next-generation" product for cleaning and degreasing light-to-heavily soiled stone, tile, masonry and much more. Powerful enough for industrial use, flexible enough for jobs around the home, space-saving EK 2010 replaces a host of individual cleaning agents. It is suitable for home-use on windows, bathroom tub and tile, counter tops and more when diluted with water. It's concentrated enough for the toughest industrial cleaning jobs on concrete, metal and many other plant and warehouse surfaces. EK 2010 also removes Sure Klean® Weather Seal Siloxane PD overspray from windows.

Staining Agents Evaluated

<u>Products</u>	Temperature
Coca Cola	ambient (~70°F)
Ketchup	ambient (~70°F)
Mustard	ambient (~70°F)
Red wine	ambient (~70°F)
Balsamic Vinegar	ambient (~70°F)
Soy Sauce	ambient (~70°F)
Olive Oil	ambient (~70°F)
Wesson Oil	(~250°F)
Coffee	(~120°F)

Sample Preparation – Stain Repellency

Samples were cleaned with Enviro Klean[®] 2010 All Surface Cleaner diluted with 10 parts water and allowed to dry for at least 24 hours prior to treatment. Stand Off[®] SLX100 Water & Oil Repellent was applied by brush in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions. Stand Off[®] SLX100 Water & Oil Repellent was allowed to cure for 72 hours prior to testing.





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Test Method - Stain Repellency

Surface Beading Evaluation

The food and oil products were applied to the test areas by using a dropper creating a bead 0.5 - 1.0 cm in diameter. The beading properties of the oils and liquids were visually evaluated within two minutes after application. The results are reported as a rating based on the angle of contact between the base of the droplet and the substrate. A rating of "1 or 2" indicated the smallest angle of contact ($<90^{\circ}$) which correlates to "above average" repellency. A rating of "3 or 4" indicates "average" repellency. A rating of "5 or greater" indicated that the oil quickly absorbed into the substrate and correlates to "below average" repellency.

Note: Non-free flowing staining agents such as ketchup and mustard are applied in a globular fashion and therefore are not evaluated for their beading properties.

Rating System (1-5)

1. No wetting of contact area (no darkening); angle less than 90°



2. Wetting contained to the contact area (slight darkening); angle is less than 90°



3. Wetting contained to the contact area (slight darkening); angle is greater than 90°, but less than 135°.



4. Wetting beyond the contact area (darkening); angle is greater than 135°



5. Wetting beyond the contact area (darkening); angle is flat.



Stain Removal Evaluation

The soiling agents were allowed to dwell on the treated and untreated substrates for times of 24 hours, 4 hours, 1 hour, and 10 minutes. The test areas were then cleaned with Enviro Klean[®] 2010 All Surface Cleaner diluted 1 part concentrate to 10 parts fresh water and scrubbed under a stream of running water from a faucet. Samples were allowed to dry for 24 hours. Evaluation consisted of a visual examination of the tested areas to determine the percentage of staining removal.





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Test Results – Surface Beading

"Sandstone #1 - Pleasant Hill Buff"									
Treatment	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	5	-	-	5	5	4	5	5	4
SLX100	1	-	-	1	1	1	2	2	1
		"S	andstone	#2 - Orc	hard Buff"				
Treatment	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	3	4	4	5	5	4
SLX100	1	-	-	1	1	1	2	2	1
		"Sand	dstone #3	- Coppe	r Variegate	d"			
Treatment	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	4	5	5	5	5	4
SLX100	1	-	-	2	2	2	3	3	2
		"Sa	andstone	#4 - Sun	set Blush"			•	
Treatment	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	5	5	4	5	5	4
SLX100	1	-	-	2	2	2	2	2	2
		"Sands	tone #5 - I	Burgund	y Brownst	one"		·	
Treatment	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	5	5	4	5	5	4
SLX100	1	-	-	2	2	2	2	2	2
		"(Sandstone	#6 - Sci	oto Buff"				
Treatment	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	4	4	4	5	5	4
SLX100	1	-	-	2	2	2	3	3	4
		"Sar	dstone #7	7 - Scioto	Blue/Gray	/ "			
Treatment	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	4	4	4	5	5	4
SLX100	1	-	-	1	1	1	2	2	3





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Test Results - Stain Repellency

	"Sandstone #1 - Pleasant Hill Buff"								
	Untreated	Control							
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	<1%	<1%	80%	80%	90%	<1%	<1%	90%
4 hour	100%	90%	90%	80%	80%	90%	<1%	<1%	90%
1 hour	100%	100%	100%	80%	80%	90%	<1%	<1%	90%
10 min.	100%	100%	100%	80%	80%	90%	<1%	<1%	90%
	Stand Of	f [®] SLX100	Water & C	Dil Repelle	nt				
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	95%	95%	95%	90%	90%	100%
4 hour	100%	100%	100%	95%	95%	95%	100%	100%	100%
1 hour	100%	100%	100%	95%	95%	100%	100%	100%	100%
10 min.	100%	100%	100%	95%	95%	100%	100%	100%	100%
			•	"Sandston	e #2 - Orc	hard Buff	1		
	Untreated	Control							
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	<1%	90%	60%	60%	60%	<1%	<1%	<1%
4 hour	100%	90%	90%	95%	60%	60%	<1%	<1%	50%
1 hour	100%	100%	100%	95%	60%	90%	<1%	<1%	90%
10 min.	100%	100%	100%	95%	90%	90%	<1%	<1%	90%
	Stand Of	f [®] SLX100	Water & 0	Oil Repelle	ent				
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	90%	90%	100%
4 hour	100%	100%	100%	100%	100%	100%	90%	90%	100%
1 hour	100%	100%	100%	100%	100%	100%	90%	90%	100%
10 min.	100%	100%	100%	100%	100%	100%	95%	95%	100%
			"Sa	andstone #	‡3 - Coppe	r Variegat	ed"		
	Untreated	Control				,			
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	<1%	100%	90%	90%	100%	<1%	<1%	60%
4 hour	100%	100%	100%	90%	90%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	90%	90%	100%	<1%	<1%	100%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	100%
	Stand Of	f [®] SLX100	Water & 0	Oil Repelle	nt				
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%





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<u>Test Results</u> – Stain Repellency

		"Sandstone #4 - Sunset Blush"							
	Untreated	I Control							
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	<1%	100%	90%	90%	90%	<1%	<1%	100%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	100%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	100%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	100%
	Stand Of	if [®] SLX100	Water & 0	Dil Repelle	nt				
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	90%	90%	100%
4 hour	100%	100%	100%	100%	100%	100%	90%	90%	100%
1 hour	100%	100%	100%	100%	100%	100%	95%	95%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
			"San	dstone #5	- Burgund	ly Brownst	one"		
	Untreated	I Control							
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	<1%	100%	80%	80%	80%	<1%	<1%	100%
4 hour	100%	100%	100%	80%	80%	80%	<1%	<1%	100%
1 hour	100%	100%	100%	80%	80%	80%	<1%	<1%	100%
10 min.	100%	100%	100%	80%	80%	80%	<1%	<1%	100%
	Stand Of	f [®] SLX100	Water & 0	Dil Repelle	nt				
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	90%	90%	100%
4 hour	100%	100%	100%	100%	100%	100%	90%	90%	100%
1 hour	100%	100%	100%	100%	100%	100%	95%	95%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
				"Sandsto	ne #6 - Sc	ioto Buff"			
	Untreated	l Control							
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	<1%	<1%	90%	40%	50%	<1%	<1%	80%
4 hour	100%	90%	90%	90%	40%	80%	<1%	<1%	100%
1 hour	100%	90%	90%	100%	60%	90%	<1%	<1%	100%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	100%
	Stand Of	if [®] SLX100	Water & 0	Dil Repelle	nt				
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%





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Test Results - Stain Repellency

	"Sandstone #7 - Scioto Blue/Gray"								
	Untreated	Control							
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	<1%	<1%	85%	50%	50%	<1%	<1%	80%
4 hour	100%	90%	60%	85%	50%	90%	<1%	<1%	80%
1 hour	100%	100%	100%	85%	70%	100%	<1%	<1%	80%
10 min.	100%	100%	100%	90%	100%	100%	<1%	<1%	80%
	Stand Of	f [®] SLX100	Water & 0	Dil Repelle	nt				
	Coca- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%

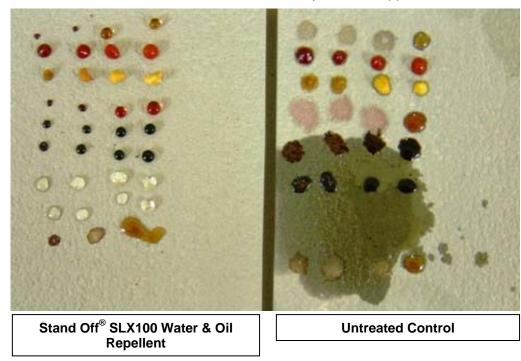




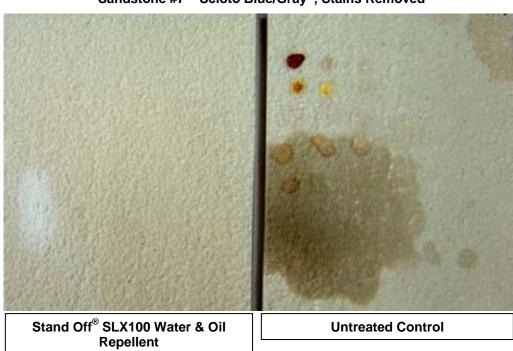
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Photographs – Stain Repellency

"Sandstone #7 - Scioto Blue/Gray"; Stains Applied



"Sandstone #7 - Scioto Blue/Gray"; Stains Removed







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Conclusions - Stain Repellency

Based upon laboratory evaluations, Stand Off[®] SLX100 Water & Oil Repellent improved the surface beading of the submitted samples. In addition, Stand Off[®] SLX100 Water & Oil Repellent was effective in repelling the staining agents from the submitted samples. Stand Off[®] SLX100 Water & Oil Repellent did not alter the appearance of any of the submitted samples.

Recommendations - Stain Repellency

Recommendations for stain resistance treatment for the sandstone submitted by Briar Hill Stone Company, Glenmont, OH are provided in the chart below. Recommendations are based on the treatments that proved most effective for providing stain repellency on the submitted sandstone.

Sample	Stain Repellent	Maintenance Cleaner
All Submitted Samples	Stand Off [®] SLX100 Water & Oil Repellent	Enviro Klean [®] 2010 All Surface Cleaner (1:10)

The ability of a stain repellent treatment to prevent staining is affected by a variety of factors. Therefore, onsite testing should be carried out for all installations with the recommended systems to ensure job site workmanship yields equivalent results.

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 stain repellent product and procedures for a particular project. See product literature for additional application and product information.

Christopher A. Moore

Project Testing Laboratory Technician

CAM



Laboratory Report

Pallet Tag Program Evaluation

Briar Hill Stone Company Glenmont, OH

Project No. 0509-16 PTP

Prepared For:

Briar Hill Stone Company 12470 State Route 520 Glenmont, OH 44628

Prepared By:

PROSOCO, Inc. November 2005