

Submitted Information**For:** Matt Henderson**Subject:** Boulder Creek Stone Products
Minneapolis, MN**Date:** June 5, 2009**Project:** 0904-02 PTP**Samples Submitted:** 10 types of manufactured stone of various size, shape, and color

Name	Type	Samples
Ancona	Fast Stak	11
Appaloosa	Western Ledge Stak	10
Cactus Ridge	Montana Ledge	12
Cajun	Southeastern Ledgestone	9
Great Lakes	Splitface	9
Oklahoma Crème	Ohio Rubble	9
Red Mountain	Prairie Bluff	11
River Rock	River Rock	12
Tivoli	Italian Fieldstone	10
Toscana	Italian Fieldstone	10

Note: All submitted samples varied by size, shape, and color.

Submitted by: Matt Henderson

Introduction

Architectural Materials Testing (AMT) Laboratories is a Boyer Industries company that provides laboratory testing and consulting services for the construction industry. Laboratory testing includes evaluating chemical cleaning products and protective treatments for a variety of new and existing architectural materials.

This report includes descriptions of the PROSOCO, Inc. products and test methods that were used. Following test results and conclusions, the report provides recommendations for the most effective products and procedures.

Purpose of Testing

Ten types of manufactured stone samples were submitted to AMT Laboratories by PROSOCO, Inc. with a request to determine if application of the products evaluated will produce any surface alterations during new construction cleaning operations. Additionally, the effectiveness of water repellent, color/sheen enhancement, graffiti repellent, and stain repellent products suitable for manufactured stone were evaluated.

New Construction Cleaning – Sure Klean® Manufactured Stone Cleaner was tested at various dilutions to determine the optimum cleaner/cure time combination for complete removal of laboratory applied Type S from the submitted manufactured stone 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 S 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 S mortar after 7 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:

Surface Finish Removal 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.

Substrate Deterioration 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.

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

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

Protective Water Repellents – Paver Kare® Paver Enhancer, Paver Kare® Paver Enhancer WB, Stand Off® Stone, Tile & Masonry Protector (STMP), Sure Klean® Weather Seal Blok-Guard® & Graffiti Control, Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II, Sure Klean® Weather Seal Siloxane PD, Sure Klean® Weather Seal Siloxane WB Concentrate were evaluated for their ability to provide water repellency to the submitted manufactured stone.

Graffiti Repellency – Sure Klean® Weather Seal Blok-Guard® & Graffiti Control and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II were evaluated for graffiti resistance on the submitted manufactured stone. Enviro Klean® SafStrip® 8, Sure Klean® Fast Acting Stripper, and Defacer Eraser® Graffiti Wipe were evaluated for their ability to remove graffiti from the submitted manufactured stone.

Stain Repellency – Stand Off® Stone Tile & Masonry Protector (STMP) was evaluated for its ability to repel stains from the submitted samples.

Color and Sheen Enhancement – Paver Kare® Paver Enhancer and Paver Kare® Paver Enhancer WB were evaluated on the submitted natural stone for their ability to provide color and/or sheen enhancement.

Products Evaluated**New Construction Cleaning Products Evaluated**

Sample	Product	Dilution
All Submitted Manufactured Stone Samples	Sure Klean® Manufactured Stone Cleaner	1:2
		1:3

Protective Water Repellency Products Evaluated

Sample	Product	Dilution
All Submitted Manufactured Stone Samples	Paver Kare® Paver Enhancer	Concentrate
	Paver Kare® Paver Enhancer WB	Concentrate
	Stand Off® Stone, Tile & Masonry Protector (STMP)	Concentrate
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Concentrate
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Concentrate
	Sure Klean® Weather Seal Siloxane PD	Concentrate
	Sure Klean® Weather Seal Siloxane WB Concentrate	1:9

Graffiti Repellency Products Evaluated

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

Graffiti Removal Products Evaluated

Sample	Product	Dilution
All Submitted Manufactured Stone Samples	Enviro Klean® SafStrip® 8	Concentrate
	Sure Klean® Fast Acting Stripper	Concentrate
	Defacer Eraser® Graffiti Wipe	Concentrate

Products Evaluated**Stain Repellency Products Evaluated**

Sample	Product	Dilution
All Submitted Manufactured Stone Samples	Stand Off® Stone, Tile & Masonry Protector (STMP)	Concentrate

Color/Sheen Enhancement Products Evaluated

Sample	Product	Dilution
All Submitted Manufactured Stone Samples	Paver Kare® Paver Enhancer	Concentrate
	Paver Kare® Paver Enhancer WB	Concentrate

New Construction Cleaning

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove Type S mortar from the submitted manufactured stone while limiting surface alterations to the manufactured stone surface.

Description of Products Evaluated – New Construction Cleaning

Sure Klean[®] Manufactured Stone Cleaner removes common construction and atmospheric staining from manufactured stone and other architectural concrete surfaces. This general-purpose, non-etching acidic cleaner removes mortar smears, rust, mud, atmospheric dirt and other construction related soiling without altering the surface texture. Manufactured Stone Cleaner enhances the color intensity of integrally colored concrete.

Sample Preparation – New Construction Cleaning

Type S Mortar was prepared in compliance with the manufacturer's instructions, applied to the samples and allowed to cure. Mortar removal was accomplished using chemical assistance and a high-pressure water rinse with pressure rinsing equipment. The removal of Type S masonry mortar was visually evaluated after 7 days of curing. A visual examination was also made to the manufactured stone to determine if the products tested caused any change to the surface of the stone.

Test Method – New Construction Cleaning

New construction 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:
 Sure Klean[®] Manufactured Stone Cleaner 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.

Test Results – New Construction Cleaning**Cleaning Effectiveness (% Type S Mortar Removal)**

“Ancona”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	70 %
	1:3	80 %

“Appaloosa”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	85 %
	1:3	85 %

“Cactus Ridge”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	80 %
	1:3	80 %

“Cajun”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	95 %
	1:3	98 %

“Great Lakes”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	90 %
	1:3	95 %

“Oklahoma Crème”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	80 %
	1:3	80 %

“Red Mountain”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	90 %
	1:3	85 %

“River Rock”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	70 %
	1:3	70 %

Test Results – New Construction Cleaning**Cleaning Effectiveness (% Type S Mortar Removal)**

“Tivoli”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	100 %
	1:3	90 %

“Toscana”		
Product	Dilution	7 day
Sure Klean® Manufactured Stone Cleaner	1:2	70 %
	1:3	85 %

Test Results – Limiting Surface Alterations

“Ancona”					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	2	0	2	0
	1:3	1	0	1	0

“Appaloosa”					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	2	0	2	0
	1:3	2	0	2	0

“Cactus Ridge”					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	1	0	1	0
	1:3	1	0	1	0

“Cajun”					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	1	0	1	0
	1:3	1	0	1	0

“Great Lakes”					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	2	0	2	0
	1:3	2	0	2	0

“Oklahoma Crème”					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	1	0	1	0
	1:3	2	0	2	0

“Red Mountain”					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	2	0	2	0
	1:3	1	0	1	0

0 – No Change **2 – Change – Moderate** **4 – Change – Excessive**
1 – Change – Slight **3 – Change – Heavy**

Test Results – Limiting Surface Alterations

"River Rock"					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	1	0	1	0
	1:3	2	0	2	0

"Tivoli"					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	2	0	2	0
	1:3	2	0	2	0

"Toscana"					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Manufactured Stone Cleaner	1:2	2	0	2	0
	1:3	2	0	2	0

0 – No Change **2 – Change – Moderate** **4 – Change – Excessive**
1 – Change – Slight **3 – Change – Heavy**

Photographs – New Construction Cleaning

“Cajun”; 7 Day Cleaning; Type S Mortar



Sure Klean [®] Manufactured Stone Cleaner (1:2)	Untreated Control
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“Cajun”; 7 Day Cleaning; Type S Mortar



Sure Klean [®] Manufactured Stone Cleaner (1:3)	Untreated Control
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Photographs – New Construction Cleaning

“Tivoli”; 7 Day Cleaning; Type S Mortar



Sure Klean® Manufactured Stone Cleaner (1:2)	Untreated Control
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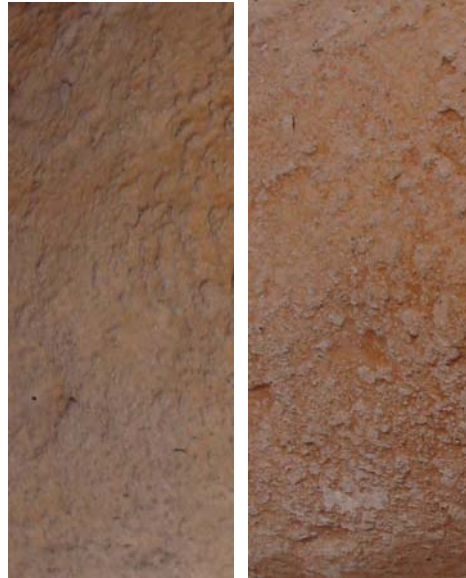
“Tivoli”; 7 Day Cleaning; Type S Mortar



Sure Klean® Manufactured Stone Cleaner (1:3)	Untreated Control
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Photographs – Limiting Surface Alterations

“River Rock”



Sure Klean [®] Manufactured Stone Cleaner (1:2)	Uncleaned Control
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Sure Klean [®] Manufactured Stone Cleaner (1:3)	Uncleaned Control
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Photographs – Limiting Surface Alterations

“River Rock”



High Pressure Rinsed	Wet Brush Scrubbing	Dry Brush Scrubbing	Untreated Surface
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Conclusions – New Construction Cleaning

Based on the test results, all of the submitted samples were efficiently cleaned with Sure Klean® Manufactured Stone Cleaner. It should be noted that Sure Klean® Manufactured Stone Cleaner and even dry brush scrubbing alone removed slight to moderate amounts of surface pigment from the submitted samples.

Recommendations – New Construction Cleaning

Recommendations for cleaning for the manufactured stone submitted by Boulder Creek Stone Products, Minneapolis, MN are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while limiting surface alterations.

Sample	New Construction Cleaning (Type S Mortar)
"Ancona"	Sure Klean® Manufactured Stone Cleaner (1:3)
"Appaloosa"	
"Cactus Ridge"	
"Cajun"	
"Great Lakes"	
"Oklahoma Crème"	
"Red Mountain"	
"River Rock"	
"Tivoli"	
"Toscana"	

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.

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
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Description of Products Evaluated – Protective Water Repellents

Paver Kare® Paver Enhancer is 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. Paver Enhancer penetrates and reacts with the surface to form a chemical bond, providing long-term durability, alkali resistance and superior breathability.

Paver Kare® Paver Enhancer WB is a long-lasting, penetrating water repellent for enhancing the natural color of most clay, concrete and porous natural stone paving, new or old. This water-based blend of siloxane resins increases paver service-life by providing protection against weather- and water-borne staining and soiling. It also helps pavers resist damage from destructive de-icing salts. Paver Enhancer WB is ideal for interlocking concrete, clay and integrally colored concrete paving, indoors or out. It will not alter the natural texture of treated surfaces.

Stand Off® SLX100™ Water & Oil Repellent is a combination of 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.

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control is 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 is a clear-drying, water-based silicone emulsion for weatherproofing concrete block and other porous masonry materials. Blok-Guard® & Graffiti Control II protects interior and exterior masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control II also 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.

Sure Klean® Weather Seal Siloxane PD (predilute) is a ready-to-use, water-based silane/siloxane water repellent for concrete and most masonry and stucco surfaces. Siloxane PD will not impair the natural breathing characteristics of treated surfaces. It helps masonry resist cracking, spalling, staining and other damage related to water intrusion. Low odor and alkaline stable, Siloxane PD is ideal for field and in-plant application.

Sure Klean® Weather Seal Siloxane WB Concentrate is a concentrated water repellent designed for dilution with fresh water at the job site. This solvent-free blend of silanes and oligomeric alkoxy siloxanes mixes easily with water to produce a penetrating water repellent ideal for application to dense or porous masonry surfaces. An effective alternative to conventional solvent-based silanes or siloxanes, Siloxane WB penetrates and chemically bonds deep within the masonry substrate to provide long-lasting protection against water-related staining or deterioration. Will not darken, produce a surface film or impair the natural breathing characteristics of treated surfaces.

Sample Preparation – Protective Water Repellents

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

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 windblown rain conditions was performed. Tests were run with vertical 5.0-milliliter head pressures. Filled to 5.0 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 5.0 mL of water or more, then:

A rating of **AA** *Above Average* water repellent performance would be reported for treatments which result in a loss of no more than:

$$5.0 \text{ mL} \times 20\% = \mathbf{1.0 \text{ mL}}$$

A rating of **A** *Average* water repellent performance would be reported for treatments which result in a loss of no more than:

$$5.0 \text{ mL} \times 50\% = \mathbf{2.5 \text{ mL}}$$

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

$$5.0 \text{ mL} \times 50\% = \mathbf{2.5 \text{ mL}}$$

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“Ancona”		
	Results in mL loss	Ranking
Untreated Control	- 0.3	--
Paver Kare® Paver Enhancer	- 0.1	<u>A</u>
Paver Kare® Paver Enhancer WB	- 0.2	<u>A</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.1	<u>A</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	- 0.1	<u>A</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	- 0.3	<u>BA</u>
Sure Klean® Weather Seal Siloxane PD	- 0.1	<u>A</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.1	<u>A</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“Appaloosa”		
	Results in mL loss	Ranking
Untreated Control	- 0.5	--
Paver Kare® Paver Enhancer	- 0.2	<u>A</u>
Paver Kare® Paver Enhancer WB	- 0.1	<u>AA</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.3	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	- 0.3	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	- 0.2	<u>A</u>
Sure Klean® Weather Seal Siloxane PD	- 0.2	<u>A</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.3	<u>BA</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“Cactus Ridge”		
	Results in mL loss	Ranking
Untreated Control	- 0.5	--
Paver Kare® Paver Enhancer	- 0.2	<u>A</u>
Paver Kare® Paver Enhancer WB	- 0.1	<u>AA</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.5	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	- 0.2	<u>A</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	- 0.2	<u>A</u>
Sure Klean® Weather Seal Siloxane PD	- 0.1	<u>AA</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.0	<u>AA</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“Cajun”		
	Results in mL loss	Ranking
Untreated Control	- 0.5	--
Paver Kare® Paver Enhancer	- 0.0	<u>AA</u>
Paver Kare® Paver Enhancer WB	- 0.1	<u>AA</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.2	<u>A</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	- 0.1	<u>AA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	- 0.2	<u>A</u>
Sure Klean® Weather Seal Siloxane PD	- 0.1	<u>AA</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.1	<u>AA</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“Great Lakes”		
	Results in mL loss	Ranking
Untreated Control	- 0.3	--
Paver Kare® Paver Enhancer	- 0.1	<u>A</u>
Paver Kare® Paver Enhancer WB	- 0.1	<u>A</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.2	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	- 0.1	<u>A</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	- 0.2	<u>BA</u>
Sure Klean® Weather Seal Siloxane PD	- 0.2	<u>BA</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.0	<u>AA</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“Oklahoma Crème”		
	Results in mL loss	Ranking
Untreated Control	- 0.4	--
Paver Kare® Paver Enhancer	- 0.1	<u>A</u>
Paver Kare® Paver Enhancer WB	- 0.5	<u>BA</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.3	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	- 0.2	<u>A</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	- 0.5	<u>BA</u>
Sure Klean® Weather Seal Siloxane PD	- 0.0	<u>AA</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.0	<u>AA</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“Red Mountain”		
	Results in mL loss	Ranking
Untreated Control	- 0.5	--
Paver Kare® Paver Enhancer	- 0.1	<u>AA</u>
Paver Kare® Paver Enhancer WB	- 0.1	<u>AA</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.3	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	- 0.2	<u>A</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	- 0.2	<u>A</u>
Sure Klean® Weather Seal Siloxane PD	- 0.1	<u>AA</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.1	<u>AA</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“River Rock”		
	Results in mL loss	Ranking
Untreated Control	- 0.5	--
Paver Kare® Paver Enhancer	- 0.0	<u>AA</u>
Paver Kare® Paver Enhancer WB	- 0.2	<u>A</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.1	<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>
Sure Klean® Weather Seal Siloxane PD	- 0.1	<u>AA</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.2	<u>A</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

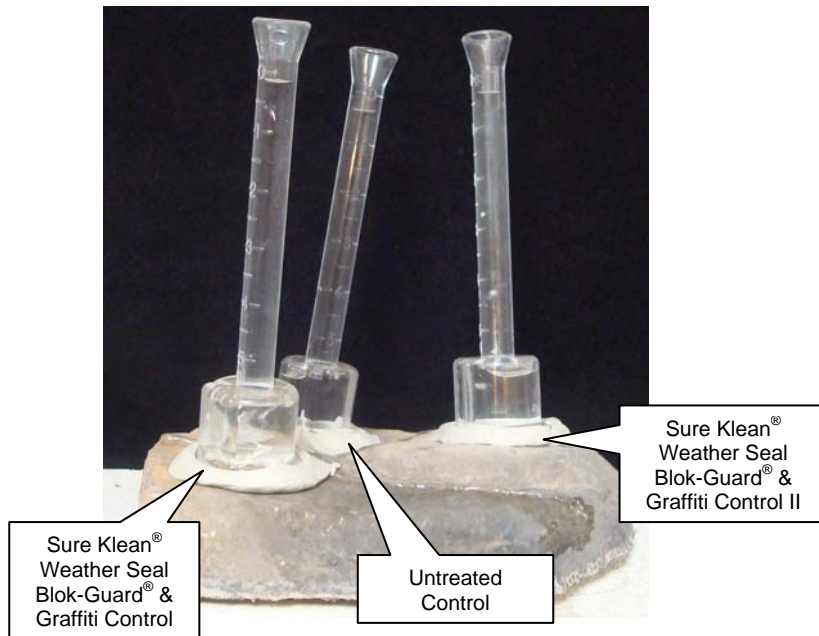
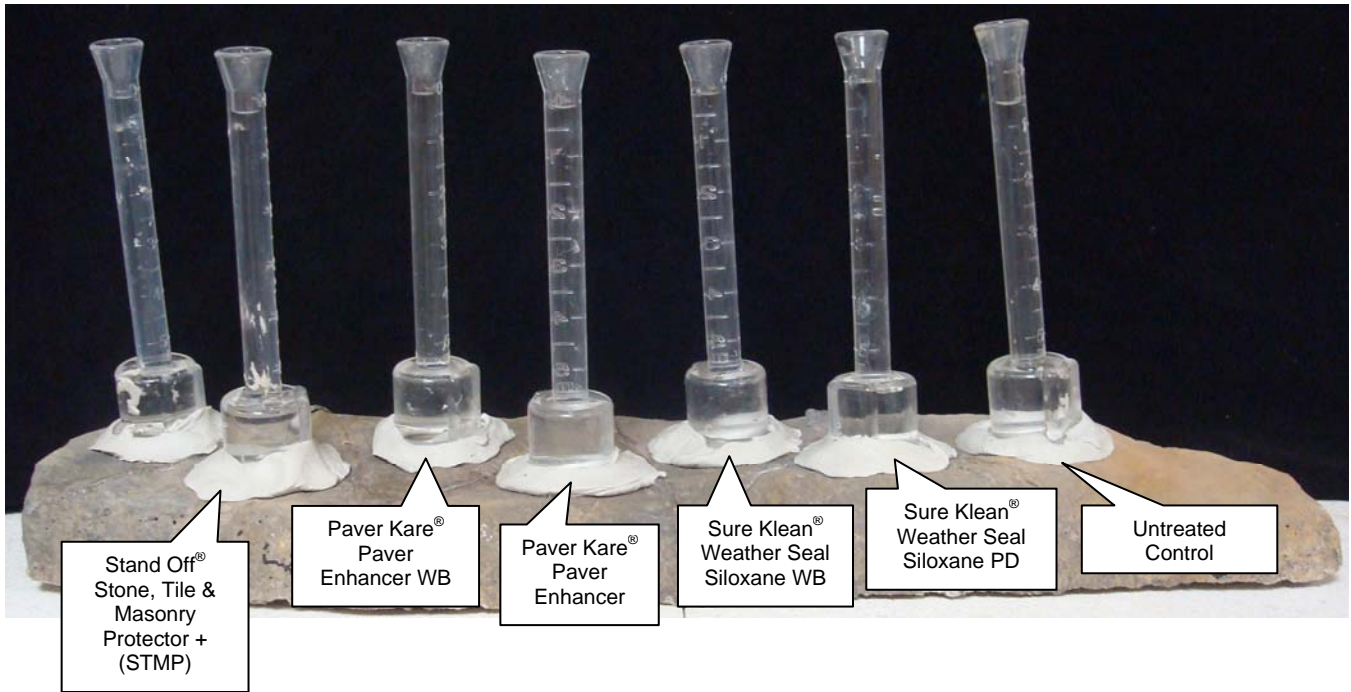
“Tivoli”		
	Results in mL loss	Ranking
Untreated Control	- 0.5	--
Paver Kare [®] Paver Enhancer	- 0.1	<u>AA</u>
Paver Kare [®] Paver Enhancer WB	- 0.1	<u>AA</u>
Stand Off [®] Stone, Tile & Masonry Protector (STMP)	- 0.2	<u>A</u>
Sure Klean [®] Weather Seal Siloxane PD	- 0.0	<u>AA</u>
Sure Klean [®] Weather Seal Siloxane WB Concentrate	- 0.1	<u>AA</u>
Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control	- 0.1	<u>A</u>
Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II	- 0.3	<u>BA</u>

Test Results – Protective Water Repellents**Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

“Toscana”		
	Results in mL loss	Ranking
Untreated Control	- 0.3	--
Paver Kare® Paver Enhancer	- 0.1	<u>A</u>
Paver Kare® Paver Enhancer WB	- 0.3	<u>BA</u>
Stand Off® Stone, Tile & Masonry Protector (STMP)	- 0.2	<u>BA</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	- 0.1	<u>A</u>
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	- 0.1	<u>A</u>
Sure Klean® Weather Seal Siloxane PD	- 0.4	<u>BA</u>
Sure Klean® Weather Seal Siloxane WB Concentrate	- 0.1	<u>A</u>

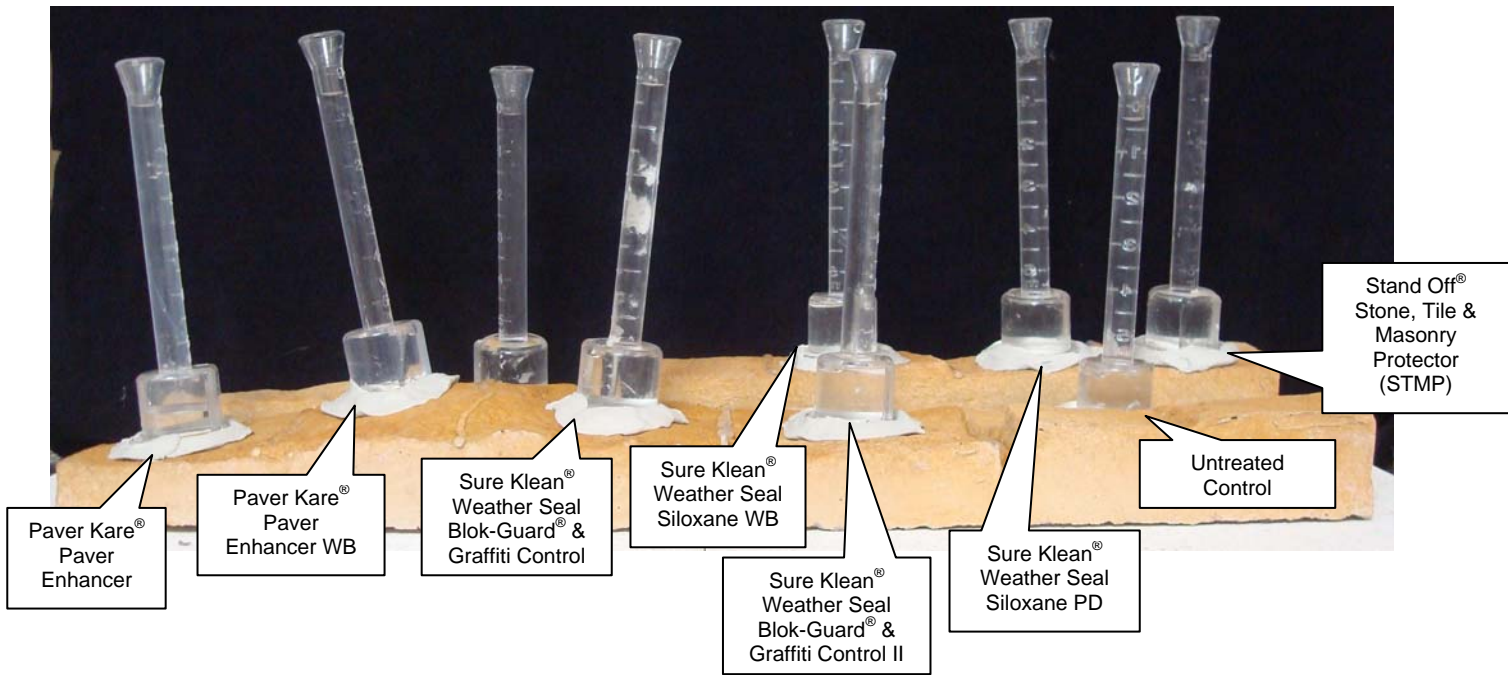
Photographs – Protective Water Repellents

“Tivoli”, RILEM Testing



Photographs – Protective Water Repellents

“Acona”, RILEM Testing



Conclusions – Protective Water Repellents

In the RILEM tests, results indicated that at least one of the treatments evaluated provided above average water repellent protection to each type of manufactured stone.

Recommendations – Protective Water Repellents

Recommendations for water repellent treatments for each type of manufactured stone submitted by Boulder Creek Stone Products, Minneapolis, MN provided in the chart below. Recommendations are based on the treatments that proved most effective at providing water repellency on the submitted samples.

Sample	Protective Water Repellents
"Ancona"	Paver Kare® Paver Enhancer Paver Kare® Paver Enhancer WB Stand Off® Stone, Tile & Masonry Protector (STMP) Sure Klean® Weather Seal Blok-Guard® & Graffiti Control Sure Klean® Weather Seal Siloxane PD Sure Klean® Weather Seal Siloxane WB Concentrate
"Appaloosa"	Paver Kare® Paver Enhancer Paver Kare® Paver Enhancer WB Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II Sure Klean® Weather Seal Siloxane PD
"Cajun" "Cactus Ridge"	Paver Kare® Paver Enhancer Paver Kare® Paver Enhancer WB Stand Off® Stone, Tile & Masonry Protector (STMP) Sure Klean® Weather Seal Blok-Guard® & Graffiti Control Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II Sure Klean® Weather Seal Siloxane PD Sure Klean® Weather Seal Siloxane WB Concentrate

Recommendations – Protective Water Repellents

Sample	Protective Water Repellents
"Great Lakes"	Paver Kare® Paver Enhancer Sure Klean® Weather Seal Blok-Guard® & Graffiti Control Sure Klean® Weather Seal Siloxane PD Sure Klean® Weather Seal Siloxane WB Concentrate
"Oklahoma Crème"	Paver Kare® Paver Enhancer Sure Klean® Weather Seal Blok-Guard® & Graffiti Control Sure Klean® Weather Seal Siloxane PD Sure Klean® Weather Seal Siloxane WB Concentrate
"Red Mountain"	Paver Kare® Paver Enhancer Paver Kare® Paver Enhancer WB Sure Klean® Weather Seal Blok-Guard® & Graffiti Control Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II Sure Klean® Weather Seal Siloxane PD Sure Klean® Weather Seal Siloxane WB Concentrate

Recommendations – Protective Water Repellents

Sample	Protective Water Repellents
"River Rock"	Paver Kare® Paver Enhancer Paver Kare® Paver Enhancer WB Stand Off® Stone, Tile & Masonry Protector (STMP) Sure Klean® Weather Seal Blok-Guard® & Graffiti Control Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II Sure Klean® Weather Seal Siloxane PD Sure Klean® Weather Seal Siloxane WB Concentrate
"Tivoli"	Paver Kare® Paver Enhancer Paver Kare® Paver Enhancer WB Stand Off® Stone, Tile & Masonry Protector (STMP) Sure Klean® Weather Seal Blok-Guard® & Graffiti Control Sure Klean® Weather Seal Siloxane PD Sure Klean® Weather Seal Siloxane WB Concentrate
"Toscana"	Paver Kare® Paver Enhancer Sure Klean® Weather Seal Blok-Guard® & Graffiti Control Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II Sure Klean® Weather Seal Siloxane WB Concentrate

* **NOTE:** Paver Kare® Paver Enhancer and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control are manufactured and marketed in compliance with VOC regulations. These products may not be suitable for sale in states and districts with more restrictive regulations.

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.

Color and Sheen Enhancement

This evaluation compares the effectiveness of the evaluated products in providing color and/or sheen enhancement to the submitted samples.

Description of Product Evaluated – Color and Sheen Enhancement

Paver Kare® Paver Enhancer is 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. Paver Enhancer penetrates and reacts with the surface to form a chemical bond, providing long-term durability, alkali resistance and superior breathability.

Paver Kare® Paver Enhancer WB is a long-lasting, penetrating water repellent for enhancing the natural color of most clay, concrete and porous natural stone paving, new or old. This water-based blend of siloxane resins increases paver service-life by providing protection against weather- and water-borne staining and soiling. It also helps pavers resist damage from destructive de-icing salts. Paver Enhancer WB is ideal for interlocking concrete, clay and integrally colored concrete paving, indoors or out. It will not alter the natural texture of treated surfaces.

Test Method – Color and Sheen Enhancement

Paver Kare® Paver Enhancer and Paver Kare® Paver Enhancer WB were applied by brush in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions. After 24 hours, a visual evaluation was made comparing the untreated surface to the treated surface.

Test Results – Color and Sheen Enhancement Products Evaluated

“Ancona”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	2	0
Paver Kare® Paver Enhancer WB	2	0

“Appaloosa”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	1	0
Paver Kare® Paver Enhancer WB	3	0

“Cactus Ridge”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	2	0
Paver Kare® Paver Enhancer WB	2	0

“Cajun”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	2	0
Paver Kare® Paver Enhancer WB	3	0

Scale:

- 0 – No Enhancement; Dull**
- 1 – Slight Enhancement**
- 2 – Moderate Enhancement**
- 3 – Significant Enhancement**

Test Results – Color and Sheen Enhancement Products Evaluated

“Great Lakes”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	2	0
Paver Kare® Paver Enhancer WB	2	0

“Oklahoma Crème”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	1	0
Paver Kare® Paver Enhancer WB	1	0

“Red Mountain”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	2	0
Paver Kare® Paver Enhancer WB	2	0

“River Rock”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	3	0
Paver Kare® Paver Enhancer WB	2	0

Scale:

- 0 – No Enhancement; Dull**
- 1 – Slight Enhancement**
- 2 – Moderate Enhancement**
- 3 – Significant Enhancement**

Test Results – Color and Sheen Enhancement Products Evaluated

“Tivoli”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	2	0
Paver Kare® Paver Enhancer WB	2	0

“Toscana”		
Product	Color Enhancement	Sheen Enhancement
Untreated Control	--	--
Paver Kare® Paver Enhancer	1	0
Paver Kare® Paver Enhancer WB	2	0

Scale:

- 0 – No Enhancement; Dull**
- 1 – Slight Enhancement**
- 2 – Moderate Enhancement**
- 3 – Significant Enhancement**

Photographs – Color and Sheen Enhancement

“Ancona”



Paver Kare®
Paver Enhancer

Paver Kare®
Paver Enhancer WB

Untreated
Control

“Great Lakes”



Paver Kare®
Paver Enhancer

Paver Kare®
Paver Enhancer WB

Untreated
Control

Recommendations – Color and Sheen Enhancement

Recommendations for color and sheen enhancement for the manufactured stone submitted by Boulder Creek Stone Products, Minneapolis, MN are provided in the chart below. Recommendations are based on the treatment that proved most effective in providing color and/or sheen enhancement to the submitted samples.

Sample	Color Enhancement	Sheen Enhancement
"Ancona"	Paver Kare® Paver Enhancer Paver Kare® Paver Enhancer WB	No Recommendations
"Appaloosa"		
"Cactus Ridge"		
"Cajun"		
"Great Lakes"		
"Oklahoma Crème"		
"Red Mountain"		
"River Rock"		
"Tivoli"		
"Toscana"		

* **NOTE:** Paver Kare® Paver Enhancer is manufactured and marketed in compliance with VOC regulations. This product may not be suitable for sale in states and districts with more restrictive regulations.

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

Graffiti Control

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

Description of Products Evaluated – Graffiti Control

Graffiti Control Treatments

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

Enviro Klean® SafStrip® 8 – A neutral pH stripping compound for nearly any hard surface – masonry, concrete, wood or metal. It bears the Enviro Klean® brand because it removes most high-strength paints and clear coats without the methylene chloride or methanol found in traditional solvent paint strippers. Use SafStrip® 8 to break the bond of the toughest oil-based “alkyd” paints, acrylics, lacquers and clear sealers. It also removes graffiti media such as spray paint and “magic” marker. SafStrip® 8’s gel-like consistency makes it hard to spill and easy to apply. It immediately emulsifies in water.

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.

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, split-face concrete block, wood and metal surfaces.

Graffiti Agents

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

Sample Preparation – Graffiti Control

Sections of the manufactured stone were treated with Sure Klean® Weather Seal Blok-Guard® & Graffiti Control and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions and allowed to cure for at least one day. At the end of the cure period, 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 and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents, using Enviro Klean® SafStrip® 8, Defacer Eraser® Graffiti Wipe, and Sure Klean® Fast Acting Stripper.

Test Method – Graffiti Control

Chemical cleaners were evaluated using the following procedure:

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

Enviro Klean® SafStrip® 8	30 minutes
Sure Klean® Fast Acting Stripper	20 minutes
Defacer Eraser® Graffiti Wipe	5 minutes
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.

Test Results – Graffiti Control

“Ancona”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	60 %	60 %	60 %	55 %
Sure Klean® Fast Acting Stripper	50 %	80 %	60 %	80 %	68 %
Defacer Eraser® Graffiti Wipe	40 %	80 %	80 %	80 %	70 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	85 %	100 %	100 %	100 %	96 %
Sure Klean® Fast Acting Stripper	90 %	100 %	100 %	100 %	98 %
Defacer Eraser® Graffiti Wipe	40 %	40 %	40 %	60 %	45 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	50 %	40 %	60 %	60 %	53 %
Sure Klean® Fast Acting Stripper	55 %	60 %	60 %	60 %	59 %
Defacer Eraser® Graffiti Wipe	40 %	40 %	40 %	40 %	40 %

“Appaloosa”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	20 %	20 %	20 %	25 %
Sure Klean® Fast Acting Stripper	70 %	30 %	40 %	40 %	45 %
Defacer Eraser® Graffiti Wipe	40 %	20 %	20 %	20 %	25 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	60 %	60 %	60 %	65 %	61 %
Sure Klean® Fast Acting Stripper	75 %	70 %	70 %	80 %	74 %
Defacer Eraser® Graffiti Wipe	55 %	60 %	60 %	60 %	59 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	60 %	60 %	60 %	55 %
Sure Klean® Fast Acting Stripper	60 %	60 %	65 %	80 %	66 %
Defacer Eraser® Graffiti Wipe	40 %	40 %	40 %	40 %	40 %

Test Results – Graffiti Control

“Cactus Ridge”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	40 %	40 %	50 %	43 %
Sure Klean® Fast Acting Stripper	55 %	50 %	60 %	85 %	63 %
Defacer Eraser® Graffiti Wipe	40 %	40 %	40 %	40 %	40 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	100 %	100 %	100 %	100 %	100 %
Sure Klean® Fast Acting Stripper	100 %	100 %	100 %	100 %	100 %
Defacer Eraser® Graffiti Wipe	95 %	100 %	100 %	100 %	99 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	60 %	60 %	60 %	55 %
Sure Klean® Fast Acting Stripper	55 %	70 %	70 %	70 %	66 %
Defacer Eraser® Graffiti Wipe	40 %	70 %	70 %	70 %	63 %

“Cajun”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	70 %	70 %	70 %	63 %
Sure Klean® Fast Acting Stripper	95 %	100 %	85 %	85 %	91 %
Defacer Eraser® Graffiti Wipe	45 %	60 %	60 %	60 %	56 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	98 %	100 %	100 %	100 %	100 %
Sure Klean® Fast Acting Stripper	100 %	100 %	100 %	100 %	100 %
Defacer Eraser® Graffiti Wipe	95 %	100 %	100 %	100 %	99 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	75 %	70 %	100 %	100 %	86 %
Sure Klean® Fast Acting Stripper	85 %	70 %	100 %	100 %	89 %
Defacer Eraser® Graffiti Wipe	70 %	55 %	100 %	100 %	81 %

Test Results – Graffiti Control

“Great Lakes”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	60 %	60 %	60 %	55 %
Sure Klean® Fast Acting Stripper	45 %	90 %	60 %	90 %	71 %
Defacer Eraser® Graffiti Wipe	40 %	60 %	60 %	90 %	63 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	98 %	100 %	100 %	100 %	100 %
Sure Klean® Fast Acting Stripper	100 %	100 %	100 %	100 %	100 %
Defacer Eraser® Graffiti Wipe	95 %	100 %	98 %	100 %	99 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	90 %	95 %	95 %	95 %	94 %
Sure Klean® Fast Acting Stripper	65 %	60 %	60 %	60 %	61 %
Defacer Eraser® Graffiti Wipe	70 %	95 %	85 %	100 %	88 %

“Oklahoma Crème”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	20 %	20 %	20 %	20 %	20 %
Sure Klean® Fast Acting Stripper	55 %	60 %	60 %	80 %	64 %
Defacer Eraser® Graffiti Wipe	20 %	20 %	20 %	20 %	20 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	30 %	40 %	40 %	40 %	38 %
Sure Klean® Fast Acting Stripper	80 %	60 %	65 %	100 %	76 %
Defacer Eraser® Graffiti Wipe	30 %	40 %	40 %	40 %	38 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	40 %	40 %	40 %	40 %
Sure Klean® Fast Acting Stripper	45 %	40 %	40 %	40 %	41 %
Defacer Eraser® Graffiti Wipe	40 %	40 %	40 %	40 %	40 %

Test Results – Graffiti Control

“Red Mountain”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	45 %	60 %	60 %	60 %	56 %
Sure Klean® Fast Acting Stripper	80 %	70 %	70 %	60 %	70 %
Defacer Eraser® Graffiti Wipe	45 %	60 %	60 %	60 %	56 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	85 %	95 %	95 %	90 %	91 %
Sure Klean® Fast Acting Stripper	100 %	100 %	100 %	100 %	100 %
Defacer Eraser® Graffiti Wipe	85 %	95 %	95 %	95 %	93 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	40 %	40 %	60 %	45 %
Sure Klean® Fast Acting Stripper	45 %	60 %	60 %	80 %	61 %
Defacer Eraser® Graffiti Wipe	45 %	60 %	70 %	70 %	61 %

“River Rock”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	20 %	40 %	55 %	40 %	39 %
Sure Klean® Fast Acting Stripper	70 %	80 %	80 %	85 %	79 %
Defacer Eraser® Graffiti Wipe	30 %	40 %	40 %	40 %	38 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	20 %	40 %	85 %	70 %	54 %
Sure Klean® Fast Acting Stripper	45 %	80 %	80 %	80 %	71 %
Defacer Eraser® Graffiti Wipe	30 %	70 %	70 %	70 %	60 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	30 %	40 %	60 %	50 %	45 %
Sure Klean® Fast Acting Stripper	95 %	40 %	60 %	40 %	59 %
Defacer Eraser® Graffiti Wipe	20 %	40 %	40 %	40 %	35 %

Test Results – Graffiti Control

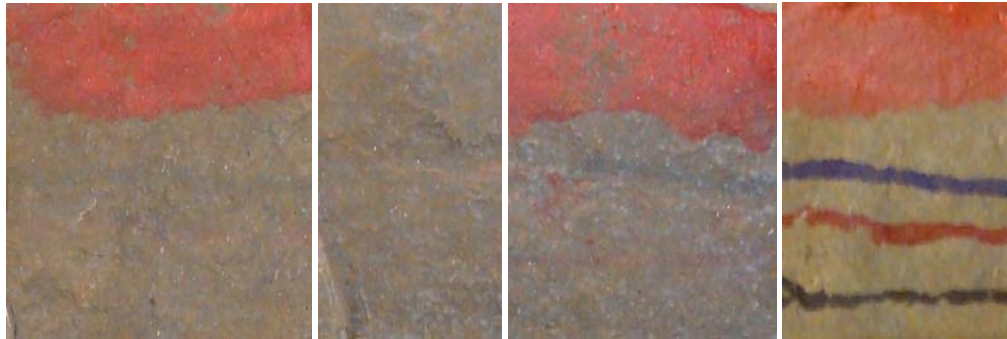
“Tivoli”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	20 %	40 %	40 %	90 %	48 %
Sure Klean® Fast Acting Stripper	40 %	50 %	50 %	50 %	48 %
Defacer Eraser® Graffiti Wipe	20 %	40 %	40 %	45 %	36 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	45 %	70 %	80 %	100 %	74 %
Sure Klean® Fast Acting Stripper	45 %	60 %	100 %	100 %	76 %
Defacer Eraser® Graffiti Wipe	40 %	40 %	40 %	40 %	40 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	60 %	85 %	85 %	68 %
Sure Klean® Fast Acting Stripper	50 %	60 %	100 %	100 %	78 %
Defacer Eraser® Graffiti Wipe	40 %	60 %	60 %	60 %	55 %

“Toscana”					
Untreated Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	40 %	70 %	70 %	70 %	63 %
Sure Klean® Fast Acting Stripper	40 %	80 %	70 %	70 %	65 %
Defacer Eraser® Graffiti Wipe	40 %	70 %	70 %	70 %	63 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	90 %	100 %	100 %	100 %	98 %
Sure Klean® Fast Acting Stripper	85 %	100 %	100 %	100 %	96 %
Defacer Eraser® Graffiti Wipe	60 %	100 %	100 %	100 %	90 %
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Red Paint	Blue Marker	Red Marker	Black Marker	% Avg. Removal
Enviro Klean® SafStrip® 8	20 %	95 %	100 %	95 %	78 %
Sure Klean® Fast Acting Stripper	25 %	60 %	60 %	60 %	51 %
Defacer Eraser® Graffiti Wipe	20 %	95 %	95 %	95 %	76 %

Photographs – Graffiti Control

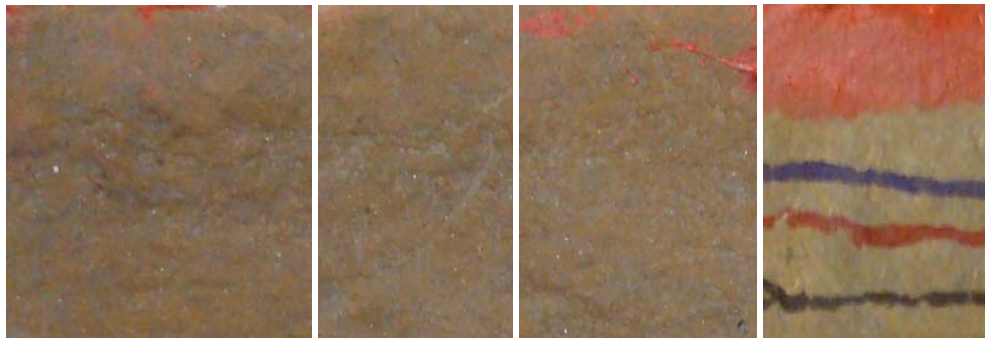
“Cajun”

Untreated Surface



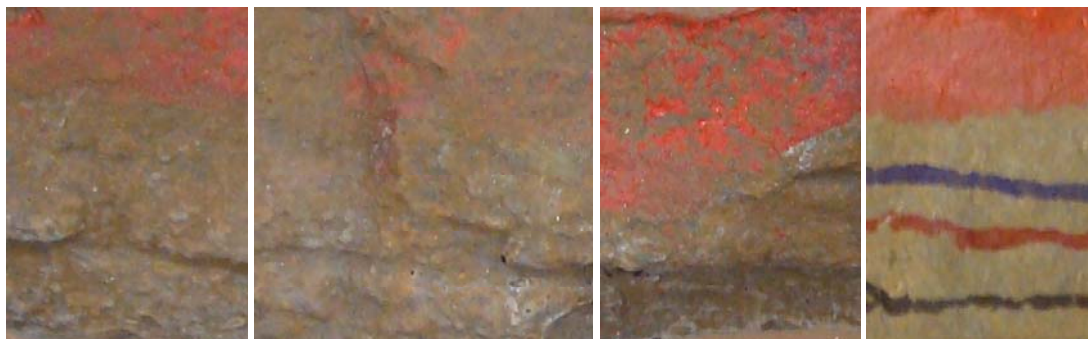
Enviro Klean® SafStrip® 8	Sure Klean® Fast Acting Stripper	Defacer Eraser® Graffiti Wipe	Before Graffiti Removal
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Sure Klean® Weather Seal Blok-Guard® & Graffiti Control



Enviro Klean® SafStrip® 8	Sure Klean® Fast Acting Stripper	Defacer Eraser® Graffiti Wipe	Before Graffiti Removal
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Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II



Enviro Klean® SafStrip® 8	Sure Klean® Fast Acting Stripper	Defacer Eraser® Graffiti Wipe	Before 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 and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II prior to graffiti application.

Recommendations – Graffiti Control

Recommendations for graffiti control treatment for the manufactured stone submitted by Boulder Creek Stone Products, Minneapolis, MN 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	Graffiti Repellents	Graffiti Removers
“Ancona”	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Enviro Klean® SafStrip® 8 Sure Klean® Fast Acting Stripper
“Appaloosa” “Oklahoma Crème” “River Rock”	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Sure Klean® Fast Acting Stripper
“Cactus Ridge” “Red Mountain”	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Enviro Klean® SafStrip® 8 Sure Klean® Fast Acting Stripper Defacer Eraser® Graffiti Wipe
“Cajun”	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control or Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Enviro Klean® SafStrip® 8 Sure Klean® Fast Acting Stripper Defacer Eraser® Graffiti Wipe
“Great Lakes” “Toscana”	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Enviro Klean® SafStrip® 8 Sure Klean® Fast Acting Stripper Defacer Eraser® Graffiti Wipe
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Enviro Klean® SafStrip® 8 Defacer Eraser® Graffiti Wipe

Recommendations – Graffiti Control

Sample	Graffiti Repellents	Graffiti Removers
"Tivoli"	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Enviro Klean® SafStrip® 8 Sure Klean® Fast Acting Stripper Defacer Eraser® Graffiti Wipe
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Sure Klean® Fast Acting Stripper

* NOTE: Sure Klean® Weather Seal Blok-Guard® & Graffiti Control is manufactured and marketed in compliance with VOC regulations. This product may not be suitable for sale in states and districts with more restrictive regulations.

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

Stain Repellency

These trials were conducted to determine the effectiveness of treatments in preventing food and oil staining on the manufactured stone samples.

Description of Products Evaluated – Stain Repellency

Stain Repellent Treatments

Stand Off® Stone, Tile & Masonry Protector (STMP) – is a penetrating water, oil and stain repellent. This easy-to-use, low odor protective treatment improves stain resistance and simplifies maintenance cleaning of interior and exterior stone, quarry tile, concrete and masonry surfaces. Surfaces treated with STMP resist staining from oil, food and waterborne matter while retaining their natural color, texture, and breathability.

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>	<u>Temperature</u>
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

The protective treatments were applied by brush in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions. The treatments were allowed to cure on the samples for at least 72 hours before testing.

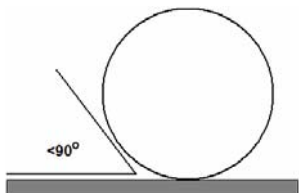
Surface Beading Evaluation

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 food or oil quickly absorbed into the substrate and correlates to “below average” repellency.

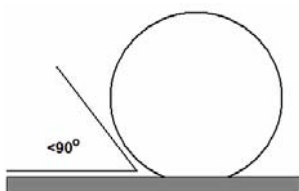
Note: Non-free flowing staining agents such as ketchup and mustard are applied in a globular fashion and therefore are not evaluated for their beading properties.

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.

Test Results – Surface Beading

“Ancona”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	4	--	--	3	3	3	5	5	3
Stand Off [®] Stone, Tile & Masonry Protector (STMP)	3	--	--	3	3	3	4	4	3

“Appaloosa”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	--	--	4	3	3	5	5	3
Stand Off [®] Stone, Tile & Masonry Protector (STMP)	3	--	--	3	3	2	3	3	4

“Cactus Ridge”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	5	--	--	5	3	3	5	5	4
Stand Off [®] Stone, Tile & Masonry Protector (STMP)	3	--	--	3	3	3	3	3	3

“Cajun”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	--	--	3	3	3	4	4	3
Stand Off [®] Stone, Tile & Masonry Protector (STMP)	3	--	--	3	3	3	3	3	3

“Great Lakes”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	--	--	5	3	3	5	5	3
Stand Off [®] Stone, Tile & Masonry Protector (STMP)	3	--	--	3	3	3	3	3	3

“Oklahoma Crème”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	4	--	--	4	4	4	5	5	4
Stand Off [®] Stone, Tile & Masonry Protector (STMP)	3	--	--	3	3	3	3	3	3

“Red Mountain”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	5	--	--	3	3	3	5	5	3
Stand Off [®] Stone, Tile & Masonry Protector (STMP)	3	--	--	5	2	2	3	3	3

Test Results – Surface Beading

“River Rock”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	5	--	--	5	4	4	5	5	4
Stand Off[®] Stone, Tile & Masonry Protector (STMP)	3	--	--	3	3	3	3	3	3

“Tivoli”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	--	--	3	3	3	5	5	5
Stand Off[®] Stone, Tile & Masonry Protector (STMP)	3	--	--	3	3	3	3	3	3

“Toscana”									
Treatment	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	--	--	2	3	2	4	4	3
Stand Off[®] Stone, Tile & Masonry Protector (STMP)	3	--	--	4	2	2	3	2	3

Test Results – Stain Repellency**% Stain Removal**

“Ancona”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	*40 %	< 1 %	< 1 %	40 %
4 hr	80 %	*100 %	< 1 %	< 1 %	*100 %	*100 %	< 1 %	< 1 %	*60 %
1 hr	100 %	*100 %	*100 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	60 %
10 min	100 %	*100 %	*100 %	20 %	*100 %	*100 %	< 1 %	< 1 %	100 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100 %	*90 %	*100 %	90 %	100 %	100 %	90 %	90 %	90 %
4 hr	100 %	90 %	*100 %	90 %	100 %	100 %	90 %	90 %	90 %
1 hr	100 %	100 %	*90 %	100 %	100 %	90 %	90 %	90 %	100 %
10 min	100 %	100 %	*100 %	100 %	100 %	100 %	100 %	100 %	100 %

“Appaloosa”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	90 %	< 1 %	< 1 %	< 1 %	60 %	60 %	< 1 %	< 1 %	< 1 %
4 hr	90 %	< 1 %	< 1 %	< 1 %	60 %	60 %	< 1 %	< 1 %	60 %
1 hr	90 %	*80 %	*80 %	< 1 %	60 %	60 %	< 1 %	< 1 %	60 %
10 min	*100 %	*90 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	< 1 %	*100 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	90 %	< 1 %	< 1 %	40 %	80 %	*80 %	< 1 %	< 1 %	< 1 %
4 hr	90 %	100 %	80 %	80 %	60 %	*95 %	< 1 %	< 1 %	60 %
1 hr	100 %	100 %	90 %	90 %	100 %	*100 %	90 %	100 %	100 %
10 min	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

* Indicates etching upon the surface.

Test Results – Stain Repellency**% Stain Removal**

“Cactus Ridge”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100 %	< 1 %	< 1 %	100 %	*100 %	80 %	< 1 %	< 1 %	80 %
4 hr	90 %	*100 %	*100 %	80 %	80 %	*80 %	< 1 %	< 1 %	60 %
1 hr	100 %	*100 %	*100 %	90 %	80 %	*90 %	< 1 %	< 1 %	90 %
10 min	100 %	*100 %	*100 %	85 %	80 %	*90 %	< 1 %	< 1 %	90 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100 %	< 1 %	< 1 %	80 %	80 %	80 %	< 1 %	60 %	80 %
4 hr	100 %	100 %	*100 %	90 %	*100 %	100 %	100 %	100 %	100 %
1 hr	100 %	*100 %	*100 %	90 %	*90 %	100 %	100 %	100 %	100 %
10 min	100 %	100 %	*100 %	90 %	*90 %	100 %	100 %	100 %	100 %

“Cajun”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	80 %	< 1 %	< 1 %	*100 %	20 %	*100 %	< 1 %	< 1 %	80 %
4 hr	80 %	*100 %	*100 %	*100 %	80 %	*100 %	< 1 %	< 1 %	80 %
1 hr	80 %	*100 %	*100 %	*100 %	80 %	*100 %	< 1 %	< 1 %	80 %
10 min	100 %	*100 %	*100 %	*100 %	*100 %	*100 %	60 %	60 %	100 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	80 %	< 1 %	< 1 %	100 %	100 %	< 1 %	80 %	80 %	100 %
4 hr	100 %	< 1 %	< 1 %	100 %	100 %	100 %	100 %	100 %	100 %
1 hr	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
10 min	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

* Indicates etching upon the surface.

Test Results – Stain Repellency**% Stain Removal**

“Great Lakes”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	60 %	< 1 %	< 1 %	< 1 %	40 %	< 1 %	< 1 %	< 1 %	< 1 %
4 hr	60 %	< 1 %	< 1 %	< 1 %	*100 %	*100 %	< 1 %	< 1 %	40 %
1 hr	100 %	< 1 %	< 1 %	40 %	*100 %	*100 %	< 1 %	< 1 %	70 %
10 min	100 %	< 1 %	< 1 %	40 %	*100 %	*100 %	< 1 %	< 1 %	100 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	90 %	< 1 %	< 1 %	< 1 %	80 %	< 1 %	80 %	< 1 %	60 %
4 hr	100 %	< 1 %	< 1 %	100 %	80 %	60 %	< 1 %	60 %	60 %
1 hr	100 %	90 %	90 %	100 %	100 %	100 %	100 %	100 %	90 %
10 min	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

“Oklahoma Crème”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	80 %	< 1 %	< 1 %	100 %	< 1 %	< 1 %	< 1 %	< 1 %	60 %
4 hr	60 %	*80 %	< 1 %	60 %	*100 %	60 %	< 1 %	< 1 %	60 %
1 hr	60 %	*80 %	*80 %	80 %	*100 %	60 %	< 1 %	< 1 %	60 %
10 min	60 %	*80 %	*80 %	50 %	60 %	60 %	< 1 %	< 1 %	60 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100 %	< 1 %	< 1 %	90 %	90 %	80 %	< 1 %	< 1 %	60 %
4 hr	90 %	90 %	90 %	90 %	80 %	80 %	80 %	80 %	80 %
1 hr	100 %	90 %	90 %	100 %	100 %	100 %	80 %	80 %	80 %
10 min	100 %	100 %	100 %	100 %	100 %	100 %	80 %	80 %	90 %

* Indicates etching upon the surface.

Test Results – Stain Repellency**% Stain Removal**

“Red Mountain”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	60 %	< 1 %	< 1 %	80 %	*100 %	*100 %	< 1 %	< 1 %	60 %
4 hr	80 %	*100 %	*100 %	60 %	*80 %	100 %	80 %	80 %	*60 %
1 hr	90 %	*100 %	*100 %	60 %	*80 %	*100 %	60 %	60 %	*60 %
10 min	90 %	*100 %	*100 %	60 %	*80 %	*100 %	60 %	60 %	*60 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100 %	< 1 %	< 1 %	100 %	100 %	100 %	80 %	80 %	100 %
4 hr	100 %	100 %	< 1 %	100 %	100 %	100 %	100 %	100 %	100 %
1 hr	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %
10 min	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

“River Rock”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	80 %	< 1 %	< 1 %	*90 %	*100 %	< 1 %	< 1 %	< 1 %	< 1 %
4 hr	100 %	*100 %	*100 %	*100 %	*100 %	< 1 %	< 1 %	< 1 %	80 %
1 hr	80 %	*100 %	*100 %	80 %	80 %	80 %	< 1 %	< 1 %	80 %
10 min	80 %	*100 %	*100 %	80 %	80 %	80 %	80 %	80 %	80 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100 %	< 1 %	< 1 %	100 %	90 %	90 %	< 1 %	< 1 %	60 %
4 hr	100 %	*100 %	*100 %	60 %	90 %	90 %	80 %	90 %	60 %
1 hr	100 %	90 %	*100 %	60 %	80 %	80 %	80 %	90 %	100 %
10 min	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

* Indicates etching upon the surface.

Test Results – Stain Repellency**% Stain Removal**

“Tivoli”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	60 %	< 1 %	< 1 %	40 %	20 %	20 %	< 1 %	< 1 %	20 %
4 hr	80 %	< 1 %	< 1 %	20 %	40 %	60 %	< 1 %	< 1 %	90 %
1 hr	60 %	< 1 %	< 1 %	20 %	40 %	40 %	< 1 %	< 1 %	60 %
10 min	80 %	< 1 %	< 1 %	60 %	40 %	40 %	< 1 %	< 1 %	60 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100 %	90 %	< 1 %	60 %	60 %	60 %	< 1 %	< 1 %	60 %
4 hr	80 %	90 %	20 %	90 %	90 %	90 %	< 1 %	< 1 %	80 %
1 hr	100 %	90 %	80 %	90 %	90 %	90 %	60 %	100 %	100 %
10 min	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

“Toscana”									
Untreated Control									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	*100 %	< 1 %	< 1 %	90 %	*100 %	90 %	< 1 %	< 1 %	80 %
4 hr	*100 %	*100 %	< 1 %	100 %	*100 %	90 %	80 %	80 %	90 %
1 hr	*100 %	*100 %	*100 %	100 %	*100 %	90 %	60 %	60 %	90 %
10 min	*100 %	*100 %	*100 %	100 %	*100 %	90 %	60 %	60 %	90 %
Stand Off® Stone, Tile & Masonry Protector (STMP)									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100 %	< 1 %	< 1 %	100 %	*100 %	90 %	80 %	80 %	90 %
4 hr	90 %	*100 %	*100 %	100 %	*100 %	90 %	80 %	90 %	90 %
1 hr	90 %	*100 %	*100 %	100 %	*100 %	90 %	80 %	100 %	90 %
10 min	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %	100 %

* Indicates etching upon the surface.

Conclusions – Stain Repellency

Based upon laboratory evaluations, surface beading and stain resistance was improved when the submitted samples were treated with Stand Off® Stone, Tile & Masonry Protector (STMP). STMP was especially effective at repelling the oil stains from the submitted samples.

Recommendations – Stain Repellency

Recommendations for stain resistance for the manufactured stone submitted by Boulder Creek Stone Products, Minneapolis, MN are provided in the chart below.

Sample	Stain Repellent	Maintenance Cleaner
"Ancona"	Stand Off® Stone, Tile & Masonry Protector (STMP)	Enviro Klean® 2010 All Surface Cleaner (1:10)
"Appaloosa"		
"Cactus Ridge"		
"Cajun"		
"Great Lakes"		
"Oklahoma Crème"		
"Red Mountain"		
"River Rock"		
"Tivoli"		
"Toscana"		

The ability of a stain repellent treatment to prevent staining 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 stain repellent product and procedures for a particular project. See product literature for additional application and product information.

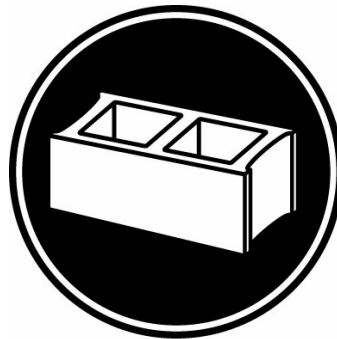


Alia Bober
Project Testing Laboratory Technician



PALLET TAG PROGRAM
Laboratory Report

Boulder Creek Stone Products
8282 Arthur St.
Minneapolis, MN 55432



Project No. 0904-02

Prepared For:
PROSOCO
SINCE 1939

Prepared By:
AMT Laboratories
June 2009