



# PALLET TAG PROGRAM LABORATORY REPORT



**PROSOCO, Inc.**

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**FOR:** James Holt  
**cc:** Paul Tessier

**SUBJECT:** Centurion Stone Inc.  
Nashville, TN

**DATE:** June 4, 2004

**PROJECT:** 0404-14 PTP

**SAMPLES SUBMITTED:** 8 types of simulated stone

Sample	Color	Size
Appalachian Rubble	Various	Various
Brown Rubble		
Gray Rubble		
Pennsylvania Rubble		
California Stack		
Gray Stack		
Kentucky Stack		
Texas Stack		

Submitted by: James Holt



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## PURPOSE OF TESTING:

Eight types of simulated stone in various colors and sizes were submitted to PROSOCO, Inc.'s Testing Laboratory with a request to determine if application of the products evaluated would produce any surface alteration during new construction cleaning operations. Additionally, the effectiveness of water repellents, graffiti repellents, and stain repellents, suitable for simulated stone, were evaluated.

**A. New Construction Cleaning** – Sure Klean<sup>®</sup> Manufactured Stone Cleaner\*, Enviro Klean<sup>®</sup> Safety Klean, and Sure Klean<sup>®</sup> Vana Trol<sup>®</sup> were evaluated at various dilutions for removal of laboratory applied mortar.

To simulate new construction soiling, samples are placed on a bench with finished surface facing upward. Hollow cylinders measuring 50 mm in diameter and 75 mm tall are positioned on top of each sample and filled with a wet mixture of Ash Grove<sup>®</sup> Type N cementitious mortar. The wet, mortar-filled cylinder is allowed to remain in contact with the tile for 10 minutes before removal.

Heavy deposits of mortar are removed with dry scraping after 24 hours. Prepared cleaning solutions are then evaluated for their effectiveness in removing residual Ash Grove<sup>®</sup> Type N mortar staining after 7 days, 14 days, and 21 days of curing.

**B. Limiting Surface Alterations Testing** – Sure Klean<sup>®</sup> Manufactured Stone Cleaner, Enviro Klean<sup>®</sup> Safety Klean, and Sure Klean<sup>®</sup> Vana Trol<sup>®</sup> were evaluated at various dilutions to determine if a cleaning program implemented to remove excess mortar and related new construction soiling would otherwise alter the appearance of cleaned surfaces. Surface Alteration was evaluated visually based upon perceived discoloration or erosion/etching of the masonry unit.

Aggregate Exposure is the visual examination of the sample comparing aggregate exposure of the untreated control surface to surfaces cleaned with selected product(s) at given dilutions.

Surface Pigment Alteration/Removal is the visual examination of the sample comparing the surface pigmentation of the untreated control to surfaces cleaned with selected product(s) at given dilutions.

Matrix Erosion is the visual examination comparing the untreated control surface to surfaces cleaned with selected products at given dilutions looking for any potential erosion/digestion of the cementitious matrix of the sample.

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

The following is the scale used for reporting results of all categories:

0 – no change	3 – heavy
1 – slight	4 – excessive
2 – moderate	

**C. Protective Water Repellents** - Sure Klean<sup>®</sup> Custom Masonry Sealer and Sure Klean<sup>®</sup> Weather Seal Siloxane WB Concentrate were evaluated for their ability to provide water repellency to the submitted samples.

**D. Stain Repellency** – Stand Off<sup>®</sup> Stone, Tile, & Masonry Protector and Stand Off<sup>®</sup> SLX100 Water & Oil Repellent were evaluated for their ability to provide stain repellency to the submitted samples.

**E. Graffiti Resistance** - Sure Klean<sup>®</sup> Custom Masonry Sealer and Sure Klean<sup>®</sup> Weather Seal Siloxane WB Concentrate followed by Defacer Eraser<sup>®</sup> Sacrificial Coating SC-1 were evaluated for their ability to provide graffiti repellency to the submitted samples. Defacer Eraser<sup>®</sup> Fast Acting Stripper and Defacer Eraser<sup>®</sup> Graffiti Wipe were evaluated for their ability to remove graffiti from the submitted samples.

\*In the original report, this product was called Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner. This report was revised when the product name was changed.



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**PRODUCTS EVALUATED**

**CLEANING AND LIMITING SURFACE ALTERATIONS PRODUCTS EVALUATED**

SAMPLE	PRODUCT	DILUTION
All Submitted Simulated-Stone	Sure Klean® Manufactured Stone Cleaner	1:2, 1:3
	Enviro Klean® Safety Klean	1:6
	Sure Klean® Vana Trol®	1:20, 1:30

**WATER REPELLENCY PRODUCTS EVALUATED**

SAMPLE	PRODUCT	DILUTION
All Submitted Simulated-Stone	Sure Klean® Custom Masonry Sealer	Concentrate
	Sure Klean® Weather Seal Siloxane WB Concentrate	1:9, 1:14

**STAIN REPELLENCY PRODUCTS EVALUATED**

SAMPLE	PRODUCT	DILUTION
All Submitted Simulated-Stone	Stand Off® Stone, Tile, & Masonry Protector	Concentrate
	Stand Off® SLX100 Water & Oil Repellent	Concentrate

**GRAFFITI REPELLENCY PRODUCTS EVALUATED**

SAMPLE	PRODUCT	DILUTION
All Submitted Simulated-Stone	Sure Klean® Custom Masonry Sealer	Concentrate
	Sure Klean® Weather Seal WB Concentrate (1:9) followed by Defacer Eraser® Sacrificial Coating SC-1	Concentrate

**GRAFFITI REMOVAL PRODUCTS EVALUATED**

SAMPLE	PRODUCT	DILUTION
All Submitted Simulated-Stone	Defacer Eraser® Fast Acting Stripper	Concentrate
	Defacer Eraser® Graffiti Wipe	Concentrate

Dilution ratios refer to mixtures of concentrated product : fresh water.



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## SECTION A – NEW CONSTRUCTION CLEANING

### **DESCRIPTION OF PRODUCTS EVALUATED – New Construction Cleaning**

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove Ash Grove® Type N mortar from the submitted simulated stone.

Ash Grove® Type N cementitious mortar were prepared in compliance with the manufacturers instructions, applied to the simulated stone and allowed to cure for 7, 14 and 21 days. The removal of mortar after each day of curing was visually evaluated.

**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 rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Manufactured Stone 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.

**Sure Klean® Vana Trol®** - A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, manganese and other metallic stains. Vana Trol® is designed to simplify rinsing and reduces potential for efflorescence.

### **TEST METHOD – New Construction Cleaning**

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

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

Vana Trol® .....	3 minutes
Manufactured Stone Cleaner .....	3-5 minutes
Safety Klean.....	3 minutes
4. Rinse thoroughly\*.

\*Pressure rinsing was conducted at approximately 1300 psi with a warm water flow rate of 1.9 gallons per minute.



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**TEST RESULTS – New Construction Cleaning**

% Removal

**“Appalachian Rubble” Simulated Stone**

<u>Type N Mortar</u>	<u>7 day</u>	<u>14 day</u>	<u>21 day</u>
Safety Klean (1:6)	100%	100%	100%
Manufactured Stone Cleaner (1:2)	100%	100%	100%
Manufactured Stone Cleaner (1:3)	100%	100%	100%

**“Brown Rubble” Simulated Stone**

<u>Type N Mortar</u>	<u>7 day</u>	<u>14 day</u>	<u>21 day</u>
Safety Klean (1:6)	90%	90%	90%
Manufactured Stone Cleaner (1:2)	85%	85%	85%
Manufactured Stone Cleaner (1:3)	85%	90%	85%

**“Gray Rubble” Simulated Stone**

<u>Type N Mortar</u>	<u>7 day</u>	<u>14 day</u>	<u>21 day</u>
Safety Klean (1:6)	90%	85%	85%
Manufactured Stone Cleaner (1:2)	90%	85%	85%
Manufactured Stone Cleaner (1:3)	90%	85%	85%

**“Pennsylvania Rubble” Simulated Stone**

<u>Type N Mortar</u>	<u>7 day</u>	<u>14 day</u>	<u>21 day</u>
Safety Klean (1:6)	85%	90%	90%
Manufactured Stone Cleaner (1:2)	85%	90%	90%
Manufactured Stone Cleaner (1:3)	85%	90%	80%
Vana Trol® (1:20)	85%	90%	90%
Vana Trol® (1:30)	85%	90%	80%



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## TEST RESULTS Continued – New Construction Cleaning

### % Removal

#### “California Stack” Simulated Stone

<u>Type N Mortar</u>	<u>7 day</u>	<u>14 day</u>	<u>21 day</u>
Safety Klean (1:6)	80%	80%	80%
Manufactured Stone Cleaner (1:2)	80%	80%	80%
Manufactured Stone Cleaner (1:3)	80%	80%	80%
Vana Trol <sup>®</sup> (1:20)	80%	80%	80%
Vana Trol <sup>®</sup> (1:30)	80%	80%	80%

#### “Gray Stack” Simulated Stone

<u>Type N Mortar</u>	<u>7 day</u>	<u>14 day</u>	<u>21 day</u>
Safety Klean (1:6)	95%	95%	95%
Manufactured Stone Cleaner (1:2)	95%	95%	95%
Manufactured Stone Cleaner (1:3)	95%	95%	95%

#### “Kentucky Stack” Simulated Stone

<u>Type N Mortar</u>	<u>7 day</u>	<u>14 day</u>	<u>21 day</u>
Safety Klean (1:6)	95%	95%	95%
Manufactured Stone Cleaner (1:2)	95%	95%	95%
Manufactured Stone Cleaner (1:3)	95%	95%	95%

#### “Texas Stack” Simulated Stone

<u>Type N Mortar</u>	<u>7 day</u>	<u>14 day</u>	<u>21 day</u>
Safety Klean (1:6)	90%	95%	95%
Manufactured Stone Cleaner (1:2)	85%	90%	90%
Manufactured Stone Cleaner (1:3)	95%	85%	90%



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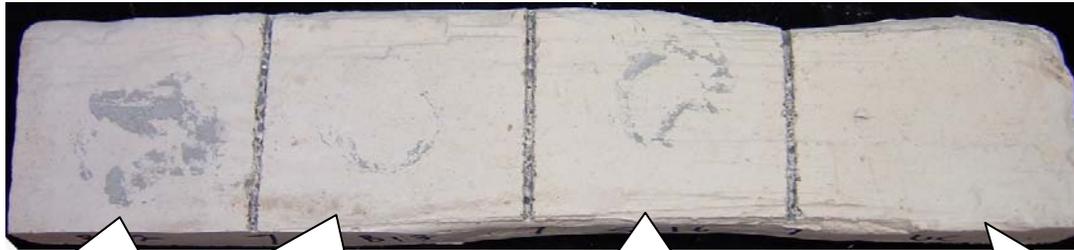


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## PHOTOGRAPHS- New Construction Cleaning: Type N Mortar

### "Texas Stack" – 7 day Cleaning



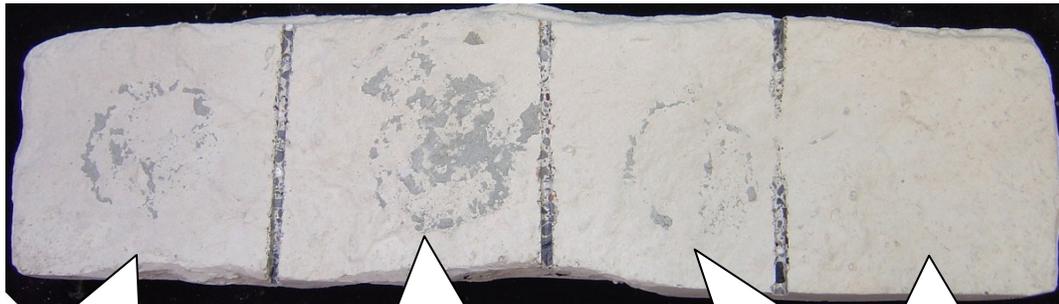
**Sure Klean®  
Manufactured  
Stone Cleaner (1:2)**

**Sure Klean®  
Manufactured Stone  
Cleaner (1:3)**

**Enviro Klean®  
Safety Klean (1:6)**

**Untreated  
Control**

### "Texas Stack" - 14 day Cleaning



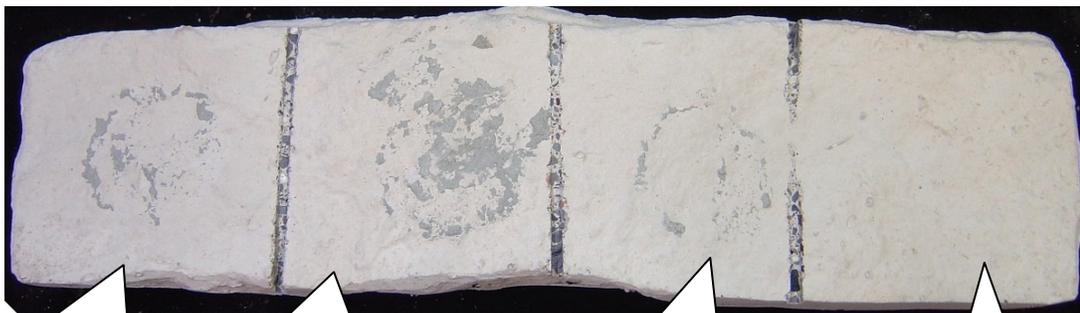
**Sure Klean®  
Manufactured  
Stone Cleaner (1:2)**

**Sure Klean®  
Manufactured  
Stone Cleaner (1:3)**

**Enviro Klean®  
Safety Klean (1:6)**

**Untreated  
Control**

### "Texas Stack" – 21 day Cleaning



**Sure Klean®  
Manufactured Stone  
Cleaner (1:2)**

**Sure Klean®  
Manufactured Stone  
Cleaner (1:3)**

**Enviro Klean®  
Safety Klean (1:6)**

**Untreated  
Control**



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## CONCLUSIONS – New Construction Cleaning

Based on the test results, all cleaners and all dilutions performed well in removing excess mortar smears on the submitted simulated stone. The cleaners performed well in removing the mortar soils even after allowing the mortar to remain on the surface of the simulated stone for 21 days under ideal curing conditions.

It is also recommended that the selected cleaners always be used in the lowest possible concentration. To facilitate easier removal of excess mortar and construction dirt while minimizing any potential adverse affect on the simulated stone, clean within 7 days of construction.

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## RECOMMENDATIONS – New Construction Cleaning

Recommendations for cleaning for the simulated stone submitted by Centurion Stone Inc., Nashville, TN, are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar.

Sample	New Construction Cleaning (Type N mortar, 21 day cleaning)
"Brown Rubble" "Texas Stack"	Enviro Klean® Safety Klean (1:6)
"Gray Rubble" "Gray Stack"	Enviro Klean® Safety Klean (1:6) OR Sure Klean® Manufactured Stone Cleaner (1:2), (1:3)
"Appalachian Rubble" "Pennsylvania Rubble" "California Stack" "Kentucky Stack"	No Recommendation (Based on Surface Alterations – see section B)

The most appropriate cleaner and dilution should be determined on the specific job-site, and will be dependent primarily on the nature and severity of soiling present at that location. Rinsing with garden-hose pressure spray is recommended.

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



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## SECTION B – LIMITING SURFACE ALTERATIONS

### DESCRIPTION OF PRODUCTS EVALUATED – Limiting Surface Alterations

**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 rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Manufactured Stone 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.

**Sure Klean® Vana Trol®** - A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, manganese and other metallic stains. Vana Trol® is designed to simplify rinsing and reduces potential for efflorescence.

### TEST METHOD – Limiting Surface Alterations

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

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

Manufactured Stone Cleaner .....	3-5 minutes
Safety Klean .....	3 minutes
Vana Trol® .....	3 minutes
4. Rinse thoroughly\*.

\*Pressure rinsing was conducted at approximately 1300 psi with a warm water flow rate of 1.9 gallons per minute.



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**TEST RESULTS – Limiting Surface Alterations**

<b>Substrate: "Appalachian Rubble"</b>					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Safety Klean	1:6	3	0	3	0
Manufactured Stone Cleaner	1:2	3	0	3	0
Manufactured Stone Cleaner	1:3	3	0	3	0
<b>Substrate: "Brown Rubble"</b>					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Safety Klean	1:6	0	0	0	0
Manufactured Stone Cleaner	1:2	0	0	0	0
Manufactured Stone Cleaner	1:3	0	0	0	0
<b>Substrate: "Gray Rubble"</b>					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Safety Klean	1:6	1	0	1	0
Manufactured Stone Cleaner	1:2	1	0	1	0
Manufactured Stone Cleaner	1:3	1	0	1	0
<b>Substrate: "Pennsylvania Rubble"</b>					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Safety Klean	1:6	4	0	4	0
Manufactured Stone Cleaner	1:2	4	0	4	0
Manufactured Stone Cleaner	1:3	4	0	4	0
Vana Trol®	1:20	4	0	4	0
Vana Trol®	1:30	4	0	4	0

The following is the scale used for reporting results of all categories:

0 – no change	3 – heavy
1 – slight	4 – excessive
2 – moderate	



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**TEST RESULTS – Limiting Surface Alterations**

<b>Substrate: "California Stack"</b>					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Safety Klean	1:6	3	0	3	0
Manufactured Stone Cleaner	1:2	3	0	3	0
Manufactured Stone Cleaner	1:3	3	0	3	0
Vana Trol®	1:20	3	0	3	0
Vana Trol®	1:30	3	0	3	0
<b>Substrate: "Gray Stack"</b>					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Safety Klean	1:6	0	0	0	0
Manufactured Stone Cleaner	1:2	0	0	0	0
Manufactured Stone Cleaner	1:3	0	0	0	0
<b>Substrate: "Kentucky Stack"</b>					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Safety Klean	1:6	2	0	2	0
Manufactured Stone Cleaner	1:2	3	0	3	0
Manufactured Stone Cleaner	1:3	3	0	3	0
<b>Substrate: "Texas Stack"</b>					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Safety Klean	1:6	0	0	0	0
Manufactured Stone Cleaner	1:2	0	0	0	0
Manufactured Stone Cleaner	1:3	0	0	0	0

The following is the scale used for reporting results of all categories:

- |               |               |
|---------------|---------------|
| 0 – no change | 3 – heavy     |
| 1 – slight    | 4 – excessive |
| 2 – moderate  |               |



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## RECOMMENDATIONS – Limiting Surface Alterations

Recommendations for limiting surface alterations for the simulated stone submitted by Centurion Stone Inc., Nashville, TN, are provided in the chart below. Recommendations are based on the optimum dilution for removal of mortar while limiting surface alterations. Acidic cleaners are not recommended for four of the simulated-stone due to surface finish removal and color change.

<b>Sample</b>	<b>Product</b>
"Brown Rubble" "Texas Stack"	Enviro Klean® Safety Klean (1:6)
"Gray Rubble" "Gray Stack"	Enviro Klean® Safety Klean (1:6) OR Sure Klean® Manufactured Stone Cleaner (1:2), (1:3)
"Appalachian Rubble" "Pennsylvania Rubble" "California Stack" "Kentucky Stack"	No Recommendation

The most appropriate cleaner and dilution should be determined on the specific job-site, and will be dependent primarily on the nature and severity of soiling present at that location. Using garden hose strength water pressure may help to minimize any surface alterations.

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



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## SECTION C - PROTECTIVE WATER REPELLENTS:

The testing described below evaluates the suitability of water repellent treatments. The surface treatments evaluated were selected for their suitability for application based on the following selection criteria:

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

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## DESCRIPTIONS OF PRODUCTS EVALUATED - Protective Water Repellents:

**Sure Klean® Custom Masonry Sealer** – A clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, simulated stone, architectural concrete block, presimulated concrete, wood and porous masonry. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering.

**Sure Klean® Weather Seal Siloxane WB Concentrate** – A concentrated water repellent designed for dilution with fresh water at the jobsite. This solvent-free blend of silanes and oligomeric alkoxysiloxanes mixes easily with water to produce a penetrating water repellent ideal for application to dense or porous masonry surfaces.

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## SAMPLE PREPARATION - Protective Water Repellents:

The submitted simulated-stone were scored, allowed to dry, and to reabsorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of a wet-on-wet brush application. All treatments were allowed to cure at least 72 hours prior to testing.

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## TEST METHODS - Protective Water Repellents:

### **Water Absorption Tube Test: RILEM II.4, 60 mph, 20 Minutes**

The water absorption tube test simulating wind driven rain conditions was performed. This test simulates 60 mile per hour wind driven rain conditions for a period of 20 minutes. See Technical Services TECH Note RILEM Tube Test Procedures.



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**TEST RESULTS - Protective Water Repellents:**

**Water Absorption Tube Test: RILEM II.4, 60 mph, 20 Minutes**

	<b>RESULTS</b>
<b>"Appalachian Rubble"</b>	
Untreated Control	53 mph
Custom Masonry Sealer	59 mph
Siloxane WB 1:9	60 mph
Siloxane WB 1:14	60 mph
<b>"Brown Rubble"</b>	
Untreated Control	52 mph
Custom Masonry Sealer	57 mph
Siloxane WB 1:9	59 mph
Siloxane WB 1:14	59 mph
<b>"Gray Rubble"</b>	
Untreated Control	50 mph
Custom Masonry Sealer	60 mph
Siloxane WB 1:9	60 mph
Siloxane WB 1:14	60 mph
<b>"Pennsylvania Rubble"</b>	
Untreated Control	50 mph
Custom Masonry Sealer	59 mph
Siloxane WB 1:9	60 mph
Siloxane WB 1:14	58 mph

**TEST RESULTS - Protective Water Repellents:**



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## Water Absorption Tube Test: RILEM II.4, 60 mph, 20 Minutes

	RESULTS
<b>"California Stack"</b>	
Untreated Control	52 mph
Custom Masonry Sealer	60 mph
Siloxane WB 1:9	60 mph
Siloxane WB 1:14	59 mph
<b>"Gray Stack"</b>	
Untreated Control	44 mph
Custom Masonry Sealer	55 mph
Siloxane WB 1:9	58 mph
Siloxane WB 1:14	60 mph
<b>"Kentucky Stack"</b>	
Untreated Control	50 mph
Custom Masonry Sealer	60 mph
Siloxane WB 1:9	59 mph
Siloxane WB 1:14	60 mph
<b>"Texas Stack"</b>	
Untreated Control	57 mph
Custom Masonry Sealer	60 mph
Siloxane WB 1:9	59 mph
Siloxane WB 1:14	58 mph

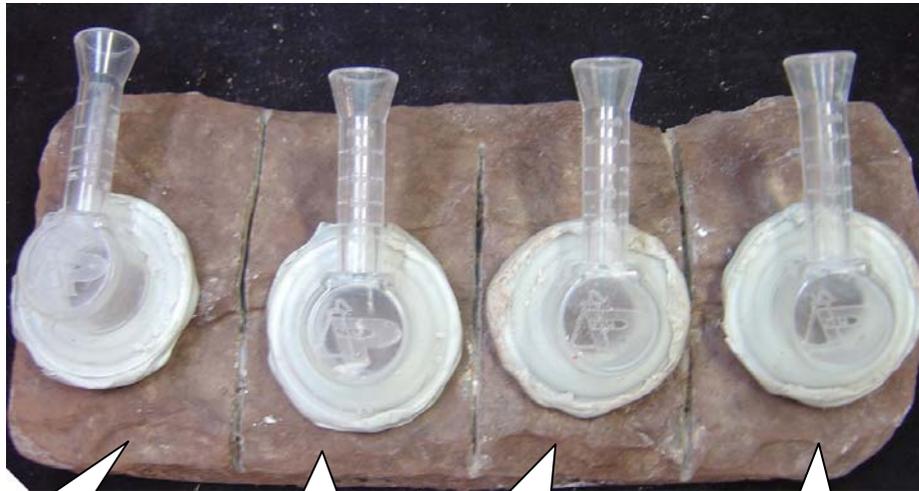


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## PHOTOGRAPHS – Protective Water Repellents

### “Brown Rubble”- RILEM testing



**Sure Klean®  
Weather Seal  
Siloxane WB  
Concentrate  
(1:9)**

**Sure Klean®  
Weather Seal  
Siloxane WB  
Concentrate  
(1:14)**

**Sure Klean® Custom  
Masonry Sealer**

**Untreated  
Control**

### “Brown Rubble” - Surface Beading



**Sure Klean® Weather  
Seal Siloxane WB  
Concentrate (1:9)**

**Sure Klean®  
Weather Seal  
Siloxane WB  
Concentrate  
(1:14)**

**Sure Klean®  
Custom Masonry  
Sealer**

**Untreated  
Control**



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## **CONCLUSIONS - Protective Water Repellents**

Based upon laboratory evaluations, all of the tested PROSOCO products provided above average water repellency to each of the submitted samples. In addition, Sure Klean® Custom Masonry Sealer enhanced the natural color of the simulated-stone.

## **RECOMMENDATIONS – Protective Water Repellents**

Recommendations for water repellency treatment for each type of simulated-stone submitted by Centurion Stone Inc., Nashville, TN, are provided in the chart below. Recommendations are based on the treatment that proved most effective and can provide water repellency on all types submitted.

<b>Block Type</b>	<b>Water Repellents</b>
All Submitted Simulated-stone	Sure Klean® Custom Masonry Sealer OR Sure Klean® Weather Seal Siloxane WB Concentrate (1:9), (1:14)

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.



# PALLET TAG PROGRAM LABORATORY REPORT



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## SECTION D – STAIN REPELLENCY

### **DESCRIPTION OF PRODUCTS EVALUATED**

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

### **Products Evaluated for Stain Protection: \***

**Stand Off® Stone, Tile & Masonry Protector** – A penetrating oil and stain repellent. Easy-to-use. Low-VOC, low-odor protective treatment improves the stain resistance and simplifies maintenance cleaning of interior and exterior stone, quarry tile, concrete and masonry surfaces.

**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.

### **Kitchen Products Evaluated:**

Coca Cola  
Ketchup  
Mustard  
Red wine  
Balsamic Vinegar  
Soy Sauce  
Olive Oil  
Wesson Oil  
Coffee

### **Temperature:**

ambient (~70°F)  
(~250°F)  
(~120°F)

## **SAMPLE PREPARATION – Stain Repellency**

Samples were cleaned with Enviro Klean® 2010 All Surface Cleaner diluted with 10 parts water, allowed to dry and absorb atmospheric moisture for 24 hours prior to treatment. The method of application for protective treatments followed the PROSOCO, Inc. 2004 Product Guide.



# PALLET TAG PROGRAM LABORATORY REPORT



## 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°) 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.

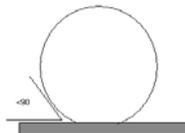
**Note: Non-free flowing staining agents such as ketchup and mustard are applied in a blob and not evaluated for their beading properties.**

#### Rating System (1-5)

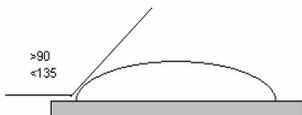
1. No wetting of contact area (no darkening); angle less than 90°



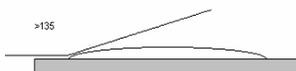
2. Wetting contained to the contact area (slight darkening); angle is less than 90°



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.



# PALLET TAG PROGRAM LABORATORY REPORT



**TEST RESULTS – Surface Beading**

<b>“Appalachian Rubble”</b>									
	<b>Coco-Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>Untreated Control</b>	3	-	-	3	3	3	3	3	3
<b>SLX 100</b>	2	-	-	2	2	2	2	2	2
<b>STMP</b>	2	-	-	2	2	2	2	2	2
<b>“Brown Rubble”</b>									
	<b>Coco-Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>Untreated Control</b>	3	-	-	3	3	3	3	3	3
<b>SLX 100</b>	2	-	-	2	2	2	2	2	2
<b>STMP</b>	2	-	-	2	2	2	2	2	2
<b>“Gray Rubble”</b>									
	<b>Coco-Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>Untreated Control</b>	3	-	-	3	3	3	3	3	3
<b>SLX 100</b>	2	-	-	2	2	2	2	2	2
<b>STMP</b>	2	-	-	2	2	2	2	2	2
<b>“Pennsylvania Rubble”</b>									
	<b>Coco-Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>Untreated Control</b>	3	-	-	3	3	3	3	3	3
<b>SLX 100</b>	2	-	-	2	2	2	2	2	2
<b>STMP</b>	2	-	-	2	2	2	2	2	2

**TEST RESULTS – Surface Beading**



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<b>"California Stack"</b>									
	<b>Coco-Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>Untreated Control</b>	3	-	-	3	3	3	3	3	3
<b>SLX 100</b>	2	-	-	2	2	2	2	2	2
<b>STMP</b>	2	-	-	2	2	2	2	2	2
<b>"Gray Stack"</b>									
	<b>Coco-Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>Untreated Control</b>	3	-	-	3	3	3	3	3	3
<b>SLX 100</b>	2	-	-	2	2	2	2	2	2
<b>STMP</b>	2	-	-	2	2	2	2	2	2
<b>"Kentucky Stack"</b>									
	<b>Coco-Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>Untreated Control</b>	3	-	-	3	3	3	3	3	3
<b>SLX 100</b>	2	-	-	2	2	2	2	2	2
<b>STMP</b>	2	-	-	2	2	2	2	2	2
<b>"Texas Stack"</b>									
	<b>Coco-Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>Untreated Control</b>	3	-	-	3	3	3	3	3	3
<b>SLX 100</b>	2	-	-	2	2	2	2	2	2
<b>STMP</b>	2	-	-	2	2	2	2	2	2



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**TEST RESULTS – STAINING REMOVAL**

% Removal

**“Appalachian Rubble”**

<b>Untreated Control</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	90%	100%	90%	90%	90%	90%	90%	100%
<b>4 hour</b>	100%	100%	100%	90%	90%	90%	90%	90%	100%
<b>1 hour</b>	100%	100%	100%	90%	90%	90%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® Stone, Tile, &amp; Masonry Protector</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® SLX 100 Water &amp; Oil Repellent</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	80%	80%	80%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	80%	80%	80%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	80%	80%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	80%	80%	100%	100%	100%

**“Brown Rubble”**

<b>Untreated Control</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	70%	70%	70%	70%	70%	70%	70%	80%
<b>4 hour</b>	100%	80%	80%	80%	80%	80%	80%	80%	90%
<b>1 hour</b>	100%	90%	90%	90%	90%	90%	90%	90%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® Stone, Tile, &amp; Masonry Protector</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	100%	80%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® SLX 100 Water &amp; Oil Repellent</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	90%	90%	80%	80%	80%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	90%	90%	90%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%



# PALLET TAG PROGRAM LABORATORY REPORT



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**TEST RESULTS – STAINING REMOVAL**

% Removal

**“Gray Rubble”**

<b>Untreated Control</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	80%	90%	80%	80%	80%	60%	60%	100%
<b>4 hour</b>	100%	90%	100%	80%	80%	80%	70%	70%	100%
<b>1 hour</b>	100%	100%	100%	80%	80%	80%	80%	80%	100%
<b>10 min.</b>	100%	100%	100%	80%	80%	80%	90%	90%	100%
<b>Stand Off® Stone, Tile, &amp; Masonry Protector</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® SLX 100 Water &amp; Oil Repellent</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	95%	100%	95%	95%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%

**“Pennsylvania Rubble”**

<b>Untreated Control</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	90%	90%	90%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® Stone, Tile, &amp; Masonry Protector</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® SLX 100 Water &amp; Oil Repellent</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%



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**TEST RESULTS – STAINING REMOVAL**

% Removal

**“California Stack”**

<b>Untreated Control</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	90%	90%	70%	70%	70%	50%	50%	100%
<b>4 hour</b>	100%	95%	95%	70%	70%	70%	60%	60%	100%
<b>1 hour</b>	100%	100%	100%	70%	70%	70%	70%	70%	100%
<b>10 min.</b>	100%	100%	100%	70%	70%	70%	80%	80%	100%
<b>Stand Off® Stone, Tile, &amp; Masonry Protector</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® SLX 100 Water &amp; Oil Repellent</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	100%	70%	70%	70%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	70%	70%	70%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	70%	70%	70%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	70%	70%	70%	100%	100%	100%

**“Gray Stack”**

<b>Untreated Control</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	95%	90%	90%	80%	80%	80%	50%	50%	95%
<b>4 hour</b>	95%	90%	90%	80%	80%	80%	60%	60%	95%
<b>1 hour</b>	100%	90%	90%	80%	80%	80%	70%	70%	100%
<b>10 min.</b>	100%	100%	100%	80%	80%	80%	80%	80%	100%
<b>Stand Off® Stone, Tile, &amp; Masonry Protector</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	100%	90%	100%	100%	100%	90%	90%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® SLX 100 Water &amp; Oil Repellent</b>									
	<b>Coca Cola</b>	<b>Ketchup</b>	<b>Mustard</b>	<b>Red Wine</b>	<b>Balsamic Vinegar</b>	<b>Soy Sauce</b>	<b>Olive Oil</b>	<b>Wesson Oil</b>	<b>Hot Coffee</b>
<b>24 hr</b>	100%	90%	90%	100%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%



# PALLET TAG PROGRAM LABORATORY REPORT



### “Kentucky Stack”

Untreated Control									
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	90%	80%	80%	60%	100%	100%	100%
4 hour	100%	100%	100%	90%	90%	70%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	80%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	90%	100%	100%	100%
Stand Off <sup>®</sup> Stone, Tile, & Masonry Protector									
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	90%	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%
Stand Off <sup>®</sup> SLX 100 Water & Oil Repellent									
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	60%	60%	60%	100%	100%	100%
4 hour	100%	100%	100%	70%	70%	70%	100%	100%	100%
1 hour	100%	100%	100%	80%	80%	100%	100%	100%	100%
10 min.	100%	100%	100%	90%	90%	100%	100%	100%	100%

### “Texas Stack”

Untreated Control									
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	95%	70%	70%	80%	80%	80%	<1%	<1%	90%
4 hour	95%	80%	90%	80%	80%	80%	<1%	<1%	90%
1 hour	95%	90%	100%	80%	80%	80%	<1%	<1%	90%
10 min.	100%	100%	100%	80%	80%	80%	<1%	<1%	90%
Stand Off <sup>®</sup> Stone, Tile, & Masonry Protector									
	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%
Stand Off <sup>®</sup> SLX 100 Water & Oil Repellent									
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	90%	90%	90%	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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PROSOCO, Inc.

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## PHOTOGRAPHS- Stain Results

“Texas Stack”; Stains applied

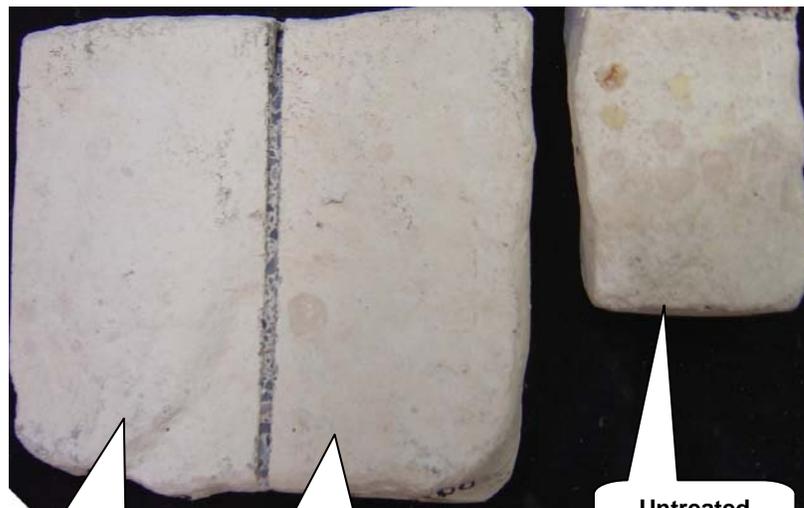


Stand Off® Stone,  
Tile, & Masonry  
Protector

Stand Off® SLX 100  
Water & Oil Repellent

Untreated  
Control

“Texas Stack”; Stains removed



Stand Off® Stone,  
Tile, & Masonry  
Protector

Stand Off® SLX 100  
Water & Oil  
Repellent

Untreated  
Control



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## CONCLUSIONS – Stain Repellency

Based upon laboratory evaluations, Stand Off® Stone, Tile, and Masonry Protector was extremely effective in repelling the staining agents from the samples tested. Also, Stand Off® SLX100 Water & Oil Repellent was efficient on many of the simulated stone. Both treatments also improved the ability of the samples to repel water.

## RECOMMENDATIONS – STAIN REPELLENCY

Recommendations for stain resistance treatment for each type of simulated stone submitted by Centurion Stone Inc., Nashville, TN, are provided in the charts below. Recommendations are based on the treatments that proved most effective for providing stain repellency on all types submitted.

Sample	Stain Repellent	Maintenance Cleaner
“Brown Rubble” “Gray Rubble” “Pennsylvania Rubble” “Gray Stack” “Texas Stack” simulated stone	Stand Off® Stone, Tile & Masonry Protector OR Stand Off® SLX100 Water & Oil Repellent	Enviro Klean® 2010 All Surface Cleaner (1:10)
“Appalachian Rubble” “California Stack” “Kentucky Stack” simulated stone	Stand Off® Stone, Tile, & Masonry Protector	



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## SECTION E – GRAFFITI REPELLENCY

### DESCRIPTION OF PRODUCTS EVALUATED

These trials were conducted to determine the optimal graffiti control treatment.

#### Graffiti Control Treatments

**Sure Klean® Custom Masonry Sealer** – A clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, simulated stone, architectural concrete block, presimulated concrete, wood and porous masonry. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering.

**Defacer Eraser® Sacrificial Coating SC-1** - A clear, water-based sacrificial coating for control of graffiti on most building surfaces, SC-1 acts as a graffiti barrier, preventing spray paints, crayons and ink from penetrating and staining the underlying surface. Graffiti is removed from protected surfaces by high-pressure hot water, or our graffiti removal products. The coating must then be reapplied to restore the graffiti barrier.

#### 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)



# PALLET TAG PROGRAM LABORATORY REPORT



## SAMPLE PREPARATION – Graffiti Repellency

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

### **Sure Klean® Custom Masonry Sealer Application:**

Sections of the simulated stone samples were treated with one coat of Sure Klean® Custom Masonry Sealer, in accordance with PROSOCO, Inc.'s Product Guide application recommendations and then allowed to cure for at least one day. At the end of the one-day cure period, a visual adverse effects evaluation was made and then the graffiti agents were applied to the substrates.

### **Sure Klean® Weather Seal Siloxane WB Concentrate (1:9) followed by Defacer Eraser® Sacrificial Coating SC-1 Application:**

Sections of the simulated stone samples were treated with an application of Sure Klean® Weather Seal Siloxane WB Concentrate in accordance with PROSOCO, Inc.'s Product Guide instructions. **After 24 hours, one coat of Defacer Eraser® Sacrificial Coating SC-1 was applied.** Following another 24-hour 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 the graffiti treatments listed above. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents, using Defacer Eraser® Graffiti Wipe or Sure Klean® Fast Acting Stripper.

## TEST METHOD – Graffiti Repellency

Chemical cleaners were evaluated using the following procedure:

1. Apply the product to a dry surface, soiled with graffiti.
2. Allow appropriate dwell time:
  - Graffiti Wipe ..... 5 minutes
  - Fast Acting Stripper ..... .20 minutes
3. Pressure rinse thoroughly until water runs clear. \*
4. Allow the surface to dry thoroughly and visually examine to determine effectiveness.

\* Pressure rinsing was conducted at approximately 1300 psi with a warm water flow rate of 1.9 gallons per minute.



# PALLET TAG PROGRAM LABORATORY REPORT



**TEST RESULTS – Graffiti Repellency**

<b>“Appalachian Rubble”</b>					
<b>Untreated Control</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	70%	100%	90%	100%	<b>90%</b>
Graffiti Wipe	80%	90%	90%	90%	<b>88%</b>
<b>Custom Masonry Sealer</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	90%	98%	98%	98%	<b>96%</b>
Graffiti Wipe	98%	98%	98%	98%	<b>98%</b>
<b>Siloxane WB/SC-1</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	90%	98%	98%	98%	<b>96%</b>
Graffiti Wipe	90%	95%	95%	95%	<b>94%</b>
<b>“Brown Rubble”</b>					
<b>Untreated Control</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	70%	100%	95%	95%	<b>90%</b>
Graffiti Wipe	70%	100%	95%	95%	<b>90%</b>
<b>Custom Masonry Sealer</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	95%	100%	100%	100%	<b>99%</b>
Graffiti Wipe	100%	100%	100%	100%	<b>100%</b>
<b>Siloxane WB/SC-1</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	95%	100%	100%	100%	<b>99%</b>
Graffiti Wipe	100%	100%	100%	100%	<b>100%</b>
<b>“Gray Rubble”</b>					
<b>Untreated Control</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	60%	100%	85%	85%	<b>83%</b>
Graffiti Wipe	80%	85%	80%	85%	<b>83%</b>
<b>Custom Masonry Sealer</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	90%	100%	95%	95%	<b>95%</b>
Graffiti Wipe	80%	90%	90%	90%	<b>88%</b>
<b>Siloxane WB/SC-1</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	80%	100%	85%	95%	<b>90%</b>
Graffiti Wipe	70%	90%	80%	90%	<b>83%</b>



# PALLET TAG PROGRAM LABORATORY REPORT



**TEST RESULTS – Graffiti Repellency**

<b>“Pennsylvania Gray”</b>					
<b>Untreated Control</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	95%	100%	100%	100%	<b>99%</b>
Graffiti Wipe	95%	100%	100%	100%	<b>99%</b>
<b>Custom Masonry Sealer</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	100%	100%	100%	100%	<b>100%</b>
Graffiti Wipe	100%	100%	100%	100%	<b>100%</b>
<b>Siloxane WB/SC-1</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	95%	100%	100%	100%	<b>99%</b>
Graffiti Wipe	98%	100%	100%	100%	<b>100%</b>
<b>“California Stack”</b>					
<b>Untreated Control</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	98%	100%	98%	98%	<b>99%</b>
Graffiti Wipe	98%	100%	98%	98%	<b>99%</b>
<b>Custom Masonry Sealer</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	100%	100%	100%	100%	<b>100%</b>
Graffiti Wipe	100%	100%	100%	100%	<b>100%</b>
<b>Siloxane WB/SC-1</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	100%	100%	100%	100%	<b>100%</b>
Graffiti Wipe	100%	100%	100%	100%	<b>100%</b>
<b>“Gray Stack”</b>					
<b>Untreated Control</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	85%	100%	85%	98%	<b>92%</b>
Graffiti Wipe	95%	95%	85%	95%	<b>93%</b>
<b>Custom Masonry Sealer</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	98%	98%	98%	98%	<b>98%</b>
Graffiti Wipe	98%	98%	98%	98%	<b>98%</b>
<b>Siloxane WB/SC-1</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	85%	98%	98%	98%	<b>95%</b>
Graffiti Wipe	98%	98%	95%	95%	<b>97%</b>



# PALLET TAG PROGRAM LABORATORY REPORT



**TEST RESULTS – Graffiti Repellency**

<b>“Kentucky Stack”</b>					
<b>Untreated Control</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	95%	100%	90%	98%	<b>96%</b>
Graffiti Wipe	95%	100%	90%	98%	<b>96%</b>
<b>Custom Masonry Sealer</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	100%	100%	100%	100%	<b>100%</b>
Graffiti Wipe	100%	100%	100%	100%	<b>100%</b>
<b>Siloxane WB/SC-1</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	95%	100%	95%	98%	<b>97%</b>
Graffiti Wipe	100%	100%	95%	98%	<b>97%</b>
<b>“Texas Stack”</b>					
<b>Untreated Control</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	70%	95%	60%	85%	<b>78%</b>
Graffiti Wipe	70%	85%	60%	80%	<b>74%</b>
<b>Custom Masonry Sealer</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	98%	98%	98%	98%	<b>98%</b>
Graffiti Wipe	98%	95%	95%	95%	<b>96%</b>
<b>Siloxane WB/SC-1</b>	<b>Red Paint</b>	<b>Black Marker</b>	<b>Green Marker</b>	<b>Red Marker</b>	<b>% Avg. Removal</b>
Fast Acting Stripper	90%	95%	90%	95%	<b>93%</b>
Graffiti Wipe	90%	95%	95%	95%	<b>94%</b>



# PALLET TAG PROGRAM LABORATORY REPORT



## Photographs – Graffiti Repellency

“Kentucky Stack”; Graffiti Applied

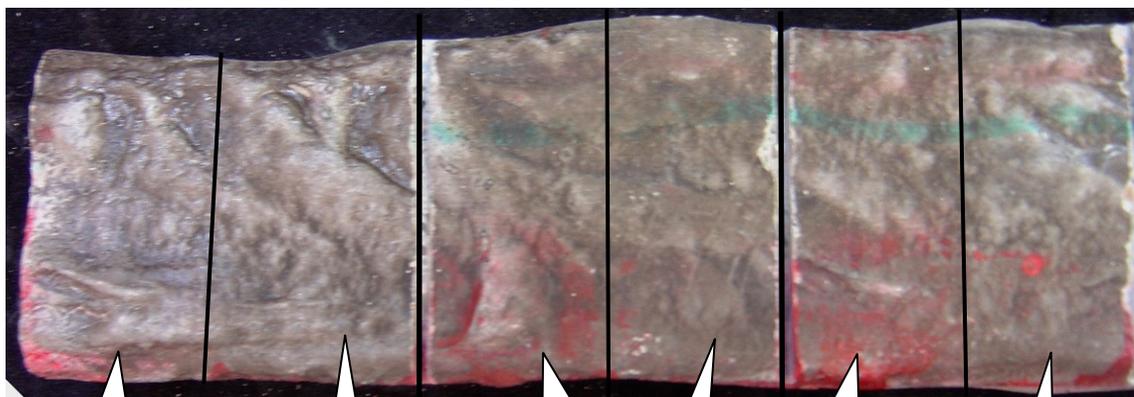


Sure Klean® Custom  
Masonry Sealer

Siloxane WB followed  
by SC-1

Untreated  
Control

“Kentucky Stack”; Graffiti Removed



Defacer Eraser®  
Graffiti Wipe

Sure Klean® Fast  
Acting Stripper

Defacer Eraser®  
Graffiti Wipe

Sure Klean® Fast  
Acting Stripper

Defacer Eraser®  
Graffiti Wipe

Sure Klean® Fast  
Acting Stripper



# PALLET TAG PROGRAM LABORATORY REPORT



## CONCLUSIONS – Graffiti Repellency

Based upon laboratory evaluations, graffiti removal was improved when the submitted samples were treated with Sure Klean® Custom Masonry Sealer and Sure Klean® Weather Seal Siloxane WB Concentrate (1:9) followed by Defacer Eraser® Sacrificial Coating SC-1 prior to graffiti application.

## RECOMMENDATIONS – GRAFFITI REPELLENCY

Recommendations for graffiti control treatment for each type of simulated stone submitted by Centurion Stone Inc., Nashville, TN, 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.

Block Type	Graffiti Repellents	Graffiti Removers
All Submitted Simulated stone	Sure Klean® Custom Masonry Sealer OR Sure Klean® Weather Seal Siloxane WB Concentrate followed by Defacer Eraser® Sacrificial Coating SC-1	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.

For the most severe graffiti cases Sure Klean® Fast Acting Stripper is recommended for job-site testing. For mild graffiti cases, Defacer Eraser® Graffiti Wipe is recommended for job-site testing. See product literature for additional application and product information.

Nathan R. Colaner  
Technical Analyst

NRC/



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***Laboratory Report***

**Pallet Tag Program Evaluation**

**Centurion Stone Inc.  
Nashville, TN**

***Project No. 0404-14 PTP***

***Prepared For:***

**A. A. Hill, Jr.**

**Centurion Stone Inc.  
50 Van Buren  
Nashville, TN 37208**

***Prepared By:***



***PROSOCO, Inc.  
June 2004***