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Submitted Information

For: James Holt
Rob Poitevent
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Subject: Southern Antique Stone
Powder Springs, GA

Date: May 30, 2007

Project: 0704-06 PTP

Samples Submitted: 2 types of “Antique Stone” cast stone pavers

Sample	Color	Integral Water Repellent	Size
“Italian Travertine”	White	BASF Rheopel XD, Glenium 3400 NV and Pozzolith 300 R	10” x 10” x 1 ¾”
“Parisian Limestone”	Yellow	BASF Rheopel XD, Glenium 3400 NV and Pozzolith 300 R	10” x 10” x 1 ¾”

Submitted by: Rob Poitevent

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

Two types of cast stone pavers were submitted to AMT Laboratories by PROSOCO, Inc. with a request to determine the optimal concentration of cleaner for removal of laboratory applied mortar while leaving the external surface looking most like the uncleaned surface of the cast stone paver during new construction operations. Additionally, the effectiveness of water repellents and stain repellents products suitable for cast stone pavers was evaluated.

New Construction Cleaning – Paver Kare® Cleaner/Brightener and Sure Klean® Custom Masonry Cleaner were evaluated at various dilutions to determine the optimal concentration of cleaner for removal of laboratory applied mortar while leaving the external surface looking most like the uncleaned surface of the cast stone paver during new construction operations.

To simulate new construction soiling the sample was 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 each sample and filled with a wet mixture of Type N mortar. The wet, mortar-filled cylinder was allowed to remain in contact with the sample for 10 minutes before removal.

Heavy deposits of mortar were removed with dry scraping after 24 hours. Prepared cleaning solutions were then evaluated for their effectiveness in removing residual Type N mortar staining after 7, 14 and 21 days.

Color uniformity was evaluated by comparing aggregate exposure and surface pigment alternation/removal of each cleaned surface compared to the uncleaned surface of the cast stone paver.

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

Surface Pigment Alteration/Removal is the visual examination comparing the pigmentation of the exterior, uncleaned surface of the cast stone paver to surfaces cleaned with selected product(s) at given dilutions.

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

0 – **Worst** match to uncleaned surface
1 – **Poor** match to uncleaned surface
2 – **Fair** match to uncleaned surface
3 – **Good** match to uncleaned surface
4 – **Best** match to uncleaned surface

Protective Water Repellents – Sure Klean® Weather Seal Siloxane PD, Stand Off® SLX100 Water & Oil Repellent, Stand Off® Limestone & Marble Protector and Sure Klean® Weather Seal Natural Stone Treatment WB were evaluated for their ability to provide water repellency to the submitted samples.

Stain Repellency – Stand Off® SLX100 Water & Oil Repellent and Stand Off® Limestone & Marble Protector were evaluated for their ability to repel stains from the submitted samples.

Products Evaluated

New Construction Cleaning Products Evaluated

Sample	Product	Dilution
All Submitted Cast Stone Pavers	Paver Kare® Cleaner/Brightener	(1:2), (1:3)
	Sure Klean® Custom Masonry Cleaner	(1:2), (1:4), (1:6)

Protective Water Repellent Products Evaluated

Sample	Product	Dilution
All Submitted Cast Stone Pavers	Sure Klean® Weather Seal Siloxane PD	Concentrate
	Stand Off® SLX100 Water & Oil Repellent	Concentrate
	Stand Off® Limestone & Marble Protector	Concentrate
	Sure Klean® Weather Seal Natural Stone Treatment WB	Concentrate

Stain Repellency Products Evaluated

Sample	Product	Dilution
All Submitted Cast Stone Pavers	Stand Off® SLX100 Water & Oil Repellent	Concentrate
	Stand Off® Limestone & Marble Protector	Concentrate

Dilution ratios refer to mixtures of concentrated product : fresh water

New Construction Cleaning

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove Type N mortar from the submitted samples while leaving the external surface looking most like the natural through-body color of the cast stone paver during new construction operations.

Type N cementitious mortar was prepared in compliance with the manufacturer's instructions, applied to the cast stone paver 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 N cementitious mortar was visually evaluated after 7, 14 and 21 days of curing.

Description of Products Evaluated – New Construction Cleaning

Paver Kare® Cleaner/Brightener – Removes common construction and atmospheric staining from custom masonry 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. Cleaner/Brightener adds depth to colors and brightens white matrices and exposed aggregate.

Sure Klean® Custom Masonry Cleaner – A general purpose, concentrated acidic cleaner for most custom masonry and colored concrete. Removes concrete splashes, excess mortar, mud, heavy efflorescence and surface soiling, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 2-6 parts water. Apply by brush or low-pressure spray.

Test Method – New Construction Cleaning

Chemical cleaners were evaluated using the following procedure:

1. Pre-wet the surface with water.
2. Apply at the appropriate dilutions.
3. Allow appropriate dwell time, as specified.
   - Paver Kare® Cleaner/Brightener..... 3-5 minutes
   - Sure Klean® Custom Masonry Cleaner ..... 3-5 minutes
4. Reapply the product and moderately agitate with a brush.
5. Pressure rinse thoroughly.*
6. Break the sample in half and compare the through-body surfaces to the cleaned surfaces for the best match.

***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 N Mortar Removal)

"Italian Travertine" Cast Stone Paver				
Product	**Dilution**	**7 day**	**14 day**	**21 day**
Paver Kare® Cleaner/Brightener	1:2	90%	98%	95%
Paver Kare® Cleaner/Brightener	1:3	90%	95%	95%
Sure Klean® Custom Masonry Cleaner	1:2	98%	98%	100%
Sure Klean® Custom Masonry Cleaner	1:4	98%	98%	100%
Sure Klean® Custom Masonry Cleaner	1:6	95%	98%	100%
"Parisian Limestone" Cast Stone Paver				
Product	**Dilution**	**7 day**	**14 day**	**21 day**
Paver Kare® Cleaner/Brightener	1:2	90%	90%	90%
Paver Kare® Cleaner/Brightener	1:3	90%	90%	90%
Sure Klean® Custom Masonry Cleaner	1:2	99%	100%	100%
Sure Klean® Custom Masonry Cleaner	1:4	98%	98%	100%
Sure Klean® Custom Masonry Cleaner	1:6	98%	99%	98%

Scale used for reporting results of both categories:

0 – Worst match to through-body
1 – Poor match to through-body
2 – Fair match to through-body
3 – Good match to through-body
4 – Best match to through-body

Test Results – Color Uniformity

Substrate: Cast Stone Paver	**Pigment Color:** "Italian Travertine"		
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Paver Kare® Cleaner/Brightener	1:2	4	4
Paver Kare® Cleaner/Brightener	1:3	4	4
Sure Klean® Custom Masonry Cleaner	1:2	3	3
Sure Klean® Custom Masonry Cleaner	1:4	4	4
Sure Klean® Custom Masonry Cleaner	1:6	4	4
Substrate: Cast Stone Paver	**Pigment Color:** "Parisian Limestone"		
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Paver Kare® Cleaner/Brightener	1:2	4	4
Paver Kare® Cleaner/Brightener	1:3	4	4
Sure Klean® Custom Masonry Cleaner	1:2	3	4
Sure Klean® Custom Masonry Cleaner	1:4	4	4
Sure Klean® Custom Masonry Cleaner	1:6	4	4

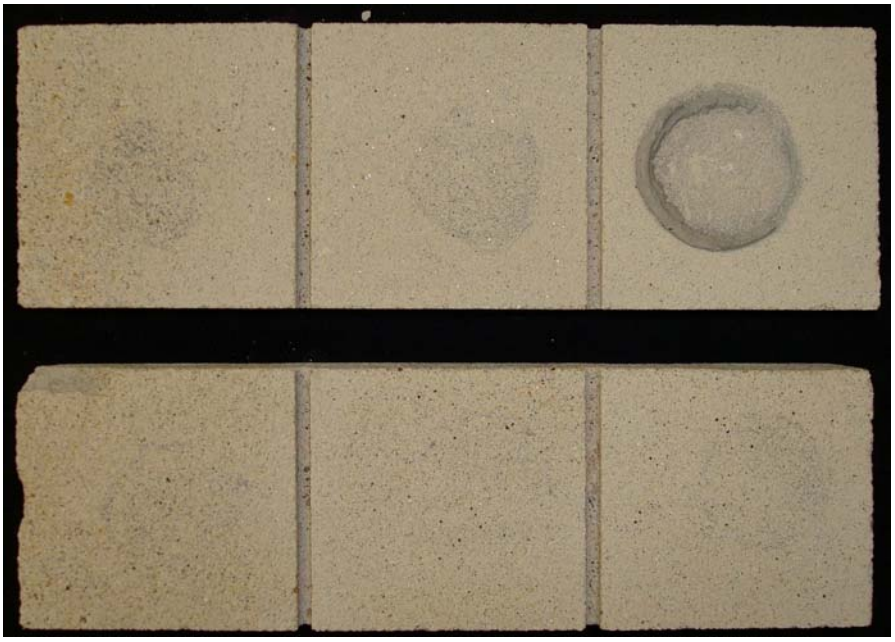
Scale used for reporting results of both categories:

0 – **Worst** match to uncleaned surface
1 – **Poor** match to uncleaned surface
2 – **Fair** match to uncleaned surface
3 – **Good** match to uncleaned surface
4 – **Best** match to uncleaned surface

Photographs – New Construction Cleaning

"Italian Travertine" Cast Stone Paver; 7 Day Cleaning

Paver Kare® Cleaner/Brightener (1:2)	Paver Kare® Cleaner/Brightener (1:3)	Untreated Control



Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Sure Klean® Custom Masonry Cleaner (1:6)

"Italian Travertine" Cast Stone Paver; 14 Day Cleaning

Paver Kare® Cleaner/Brightener (1:2)	Paver Kare® Cleaner/Brightener (1:3)	Untreated Control

Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Sure Klean® Custom Masonry Cleaner (1:6)

Photographs – New Construction Cleaning

"Italian Travertine" Cast Stone Paver; 21 Day Cleaning

Paver Kare® Cleaner/Brightener (1:2)	Paver Kare® Cleaner/Brightener (1:3)	Untreated Control

Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Sure Klean® Custom Masonry Cleaner (1:6)

Photographs – Color Uniformity

"Italian Travertine" Cast Stone Paver

Paver Kare® Cleaner/Brightener (1:2)	Paver Kare® Cleaner/Brightener (1:3)	Untreated Control

Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Sure Klean® Custom Masonry Cleaner (1:6)

Conclusions – New Construction Cleaning

Based on the test results, all of the PROSOCO, Inc. products tested performed well in removing excess Type N mortar from the submitted samples even after allowing the mortar to remain on the surface of the samples for 21 days.

Use higher concentrations and surface agitation to maximize aggregate exposure. Use low concentration and surface agitation to minimize aggregate exposure.

Recommendations – New Construction Cleaning

Recommendations for cleaning for the cast stone pavers submitted by Southern Antique Stone, Powder Springs, GA is provided in the chart below. Recommendation is based on the optimum dilution for complete removal of mortar while providing the best match for color uniformity when compared to the uncleaned surface of the cast stone paver.

Sample	New Construction Cleaning (Type N mortar, 21 day cleaning)
"Italian Travertine" and "Parisian Limestone"	Sure Klean® Custom Masonry Cleaner (1:4) OR (1:6) OR Paver Kare® Cleaner/Brightener (1:2) OR (1:3)

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

Protective Water Repellents

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

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

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

Description of Products Evaluated – Protective Water Repellents

Sure Klean® Weather Seal Siloxane PD – A ready-to-use, water-based silane/siloxane water repellent for concrete, GFRC, and most masonry and stucco surfaces. Siloxane PD penetrates more deeply than conventional water repellents. 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.

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.

Stand Off® Limestone & Marble Protector – A clear, penetrating water and oil repellent suitable for use on interior or exterior calcareous surfaces such as limestone, marble and travertine. It's also suitable for many other types of masonry surfaces. Limestone & Marble Protector penetrates deeply to provide surface and subsurface protection without forming a glossy surface film. Treated surfaces retain their natural color, texture and appearance.

Limestone & Marble Protector combines high quality siloxane resins with "oleophobic" resins to produce a penetrating water and oil repellent ideal for long-term protection against food, oil and waterborne staining. Unlike conventional penetrating oil repellent products, Limestone & Marble Protector has been modified to ensure effectiveness on limestone, marble and other calcareous or neutral pH surfaces.

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

Sample Preparation – Protective Water Repellents

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

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.

Test Results – Protective Water Repellents

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

	RESULTS
"Italian Travertine"	
Untreated Control	54 mph
Sure Klean® Weather Seal Siloxane PD	60 mph
Stand Off® SLX100 Water & Oil Repellent	60 mph
Stand Off® Limestone & Marble Protector	60 mph
Sure Klean® Weather Seal Natural Stone Treatment WB	54 mph
"Parisian Limestone"	
Untreated Control	56 mph
Sure Klean® Weather Seal Siloxane PD	60 mph
Stand Off® SLX100 Water & Oil Repellent	59 mph
Stand Off® Limestone & Marble Protector	58 mph
Sure Klean® Weather Seal Natural Stone Treatment WB	56 mph

Photographs – Protective Water Repellents

"Italian Travertine" Cast Stone Paver; 60 mph RILEM II.4, 20 Minutes

Sure Klean® Weather Seal Siloxane PD

Sure Klean® Weather Seal Natural Stone Treatment WB

Stand Off® SLX100 Water & Oil Repellent

Stand Off® Limestone & Marble Protector

Untreated Control

Conclusions – Protective Water Repellents

Based upon laboratory evaluations, Sure Klean® Weather Seal Siloxane PD, Stand Off® SLX 100 Water & Oil Repellent and Stand Off® Limestone & Marble Protector exhibited excellent water repellency on the submitted samples.

Recommendations – Protective Water Repellents

Recommendations for water repellency treatments for the cast stone pavers submitted by Southern Antique Stone, Powder Springs, GA are provided in the chart below. Recommendations are based on the treatment that proved most effective at providing water repellency on all samples submitted.

Sample	Protective Water Repellents
"Italian Travertine" and "Parisian Limestone"	Sure Klean® Weather Seal Siloxane PD OR Stand Off® SLX100 Water & Oil Repellent OR Stand Off® Limestone & Marble Protector

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.

Stain Repellency

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

Description of Products Evaluated – Stain Repellency

Stain Repellent Treatments

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

Stand Off® Limestone & Marble Protector – A clear, penetrating water and oil repellent suitable for use on interior or exterior calcareous surfaces such as limestone, marble and travertine. It's also suitable for many other types of masonry surfaces. Limestone & Marble Protector penetrates deeply to provide surface and subsurface protection without forming a glossy surface film. Treated surfaces retain their natural color, texture and appearance.

Limestone & Marble Protector combines high quality siloxane resins with "oleophobic" resins to produce a penetrating water and oil repellent ideal for long-term protection against food, oil and waterborne staining. Unlike conventional penetrating oil repellent products, Limestone & Marble Protector has been modified to ensure effectiveness on limestone, marble and other calcareous or neutral pH surfaces.

Maintenance Cleaner

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

Staining Agents Evaluated

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

Sample Preparation – Stain Repellency

The sample was 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. Both products were applied by brush in accordance with the instructions in the current PROSOCO, Inc. Product Data Sheets and were allowed to cure for at least 72 hours.

Test Method – Stain Repellency

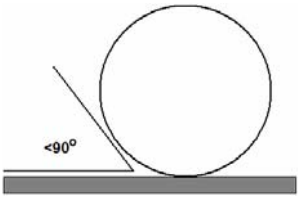
Surface Beading Evaluation

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.

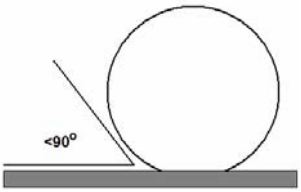
Note: Non-free flowing staining agents such as ketchup and mustard are applied in a globular fashion and therefore are not evaluated for their beading properties.

Rating System (1-5)

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

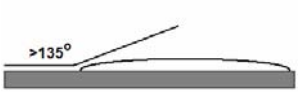


2. Wetting contained to the contact area (slight darkening); angle is less than 90º.



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

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



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 substrate 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. The sample 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

"Italian Travertine"									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	4	3	3	5	5	4
SLX100	1	-	-	1	1	1	1	1	2
Limestone & Marble Protector	1	-	-	1	1	1	1	1	2
"Parisian Limestone"									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	3	3	3	5	5	4
SLX100	1	-	-	1	1	2	1	1	3
Limestone & Marble Protector	1	-	-	1	1	2	1	1	2

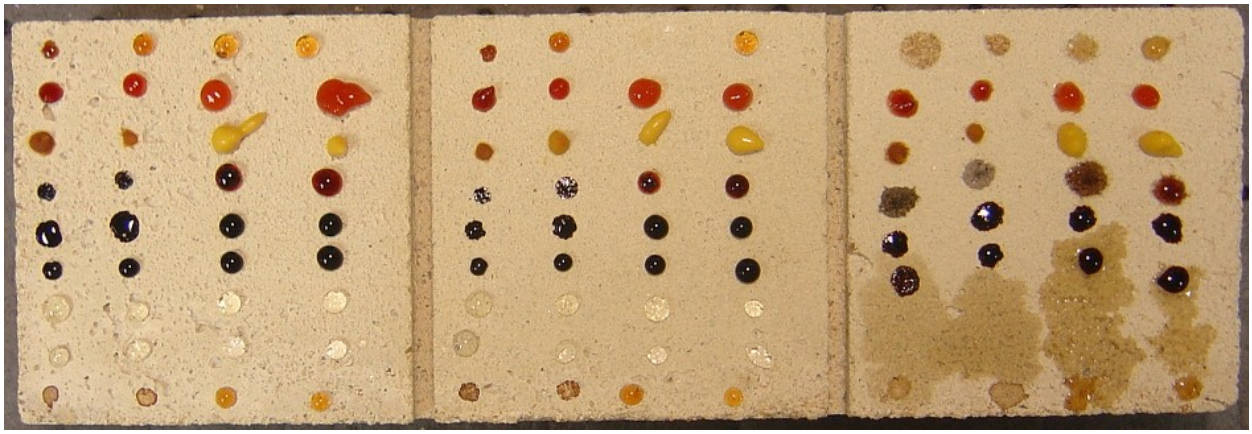
Test Results – Stain Repellency

	"Italian Travertine"								
	Untreated Control								
	Coca-Cola	**Ketchup**	**Mustard**	**Red Wine**	**Balsamic Vinegar**	**Soy Sauce**	**Olive Oil**	**Wesson Oil**	**Hot Coffee**
24 hr	90%	70%	70%	60%	60%	60%	50%	50%	70%
4 hour	90%	90%	70%	60%	60%	60%	50%	50%	70%
1 hour	90%	100%	90%	60%	90%	90%	50%	50%	80%
10 min.	90%	100%	90%	60%	90%	90%	50%	50%	90%
	Stand Off® SLX100 Water & Oil Repellent								
	Coca-Cola	**Ketchup**	**Mustard**	**Red Wine**	**Balsamic Vinegar**	**Soy Sauce**	**Olive Oil**	**Wesson Oil**	**Hot Coffee**
24 hr	100%	100%	60%	60%	70%	100%	80%	80%	70%
4 hour	100%	100%	90%	60%	95%	100%	80%	80%	70%
1 hour	100%	100%	100%	90%	100%	100%	80%	80%	90%
10 min.	100%	100%	100%	100%	100%	100%	80%	80%	100%
	Stand Off® Limestone & Marble Protector								
	Coca-Cola	**Ketchup**	**Mustard**	**Red Wine**	**Balsamic Vinegar**	**Soy Sauce**	**Olive Oil**	**Wesson Oil**	**Hot Coffee**
24 hr	100%	100%	60%	70%	80%	100%	90%	90%	90%
4 hour	100%	100%	95%	70%	95%	100%	90%	90%	90%
1 hour	100%	100%	100%	95%	100%	100%	95%	95%	100%
10 min.	100%	100%	100%	100%	100%	100%	95%	95%	100%
	"Parisian Limestone"								
	Untreated Control								
	Coca-Cola	**Ketchup**	**Mustard**	**Red Wine**	**Balsamic Vinegar**	**Soy Sauce**	**Olive Oil**	**Wesson Oil**	**Hot Coffee**
24 hr	90%	60%	60%	60%	80%	90%	50%	50%	70%
4 hour	90%	95%	95%	60%	80%	95%	50%	50%	70%
1 hour	95%	100%	100%	70%	90%	100%	50%	50%	90%
10 min.	100%	100%	100%	90%	95%	100%	50%	50%	90%
	Stand Off® SLX100 Water & Oil Repellent								
	Coca-Cola	**Ketchup**	**Mustard**	**Red Wine**	**Balsamic Vinegar**	**Soy Sauce**	**Olive Oil**	**Wesson Oil**	**Hot Coffee**
24 hr	100%	100%	60%	95%	100%	100%	80%	80%	90%
4 hour	100%	100%	100%	100%	100%	100%	90%	90%	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® Limestone & Marble Protector								
	Coca-Cola	**Ketchup**	**Mustard**	**Red Wine**	**Balsamic Vinegar**	**Soy Sauce**	**Olive Oil**	**Wesson Oil**	**Hot Coffee**
24 hr	100%	100%	60%	95%	100%	100%	80%	80%	90%
4 hour	100%	100%	100%	95%	100%	100%	90%	90%	100%
1 hour	100%	100%	100%	100%	100%	100%	95%	95%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%

***Indicates etching occurred due to the acidic nature of the staining agents.**

Photographs – Stain Repellency

"Parisian Limestone" Cast Stone Paver; Stains Applied



Stand Off® SLX100 Water & Oil Repellent	Stand Off® Limestone & Marble Protector	Untreated Control

"Parisian Limestone" Cast Stone Paver; Stains Removed

Stand Off® SLX100 Water & Oil Repellent	Stand Off® Limestone & Marble Protector	Untreated Control

Conclusions – Stain Repellency

Based upon laboratory evaluations, both of the treatments evaluated improved the surface beading of the samples. In addition, both of the treatments evaluated were effective in repelling the staining agents, especially the oils, from the submitted samples.

Recommendations – Stain Repellency

Recommendations for stain resistance treatment for the cast stone pavers submitted by Southern Antique Stone, Powder Springs, GA are provided in the chart below. Recommendations are based on the treatments that proved most effective for providing stain repellency on the submitted samples.

Sample	Stain Repellent	Maintenance Cleaner
"Italian Travertine" and "Parisian Limestone"	Stand Off® SLX100 Water & Oil Repellent OR Stand Off® Limestone & Marble Protector	Enviro Klean® 2010 All Surface Cleaner (1:10)

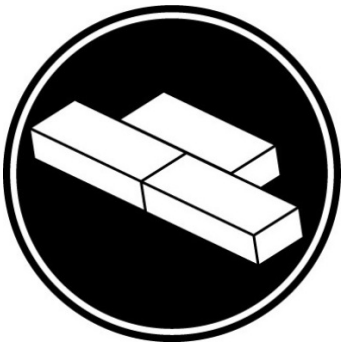
The ability of a stain repellent treatment to prevent staining is affected by a variety of factors. Therefore, on-site testing should be carried out for all installations with the recommended systems to ensure job site workmanship yields equivalent results.

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.

John Lancaster
Project Testing Laboratory Technician

PALLET TAG PROGRAM
Laboratory Report

Southern Antique Stone
4031 Fambrough Ct. Bldg. 200
Powder Springs, GA 30127
Cast Stone Paver



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