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Attachments

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

Submitted Information

For: Mark O'Keefe

Brian Koenings

Subject: Syndecrete / Eldorado Stone

Santa Monica, California

Date: April 20, 2007

Project: 0702-10 PTP

Samples Submitted: 14 types of concrete pavers

Sample Color	Color	Size
"091806-OT Control"	Buff	12" x 12" x ½"
"091806-1 T1"	Buff	12" x 12" x ½"
"091806-2 T2"	Buff	12" x 12" x ½"
"091806-4 T4"	Black with white aggregate	12" x 12" x ½"
"091806-6 T6"	Black with white aggregate	12" x 12" x ½"
"091806-7 T7"	Buff	12" x 12" x ½"
"091806-12 T12"	Buff with green, blue and green glass	12" x 12" x ½"
"091806-19 T19"	Buff with green, blue and green glass	12" x 12" x ½"
"091806-23 T23"	Buff with gray aggregate	12" x 12" x ½"
"091806-25 T25"	Black with white aggregate	12" x 12" x ½"
"091806-26 T26"	Buff with wood	12" x 12" x ½"
"091806-27 T27"	Buff with wood	12" x 12" x ½"
"091806-38 T38"	Buff with gray and black aggregate	12" x 12" x ½"
"091806-41 T41"	Buff with brass	12" x 12" x ½"

Submitted by: Mark O'Keefe

<u>Introduction</u>

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

Fourteen types of concrete 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 natural through-body color of the concrete paver during new construction cleaning operations. Additionally, the effectiveness of water repellents, stain repellents and color/sheen enhancement products suitable for concrete pavers was evaluated.

New Construction Cleaning -Sure Klean[®] Light Duty Concrete Cleaner and Enviro Klean[®] Safety Klean 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 natural through-body color of the concrete paver during new construction cleaning operations.

To simulate new construction soiling all 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 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 samples for 10 minutes before removal.

Heavy deposits of mortar were removed with dry scraping after 24 hours. Prepared cleaning solutions were then evaluated for their effectiveness in removing residual Type N mortar 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 natural through-body color of the concrete paver.

Aggregate Exposure is the visual examination comparing aggregate exposure of the interior, through-body section of concrete paver to surfaces cleaned with selected product(s) at given dilutions.

Surface Pigment Alteration/Removal is the visual examination comparing the pigmentation of the interior, through-body section of the concrete 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 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

Protective Water Repellents - Consolideck® Saltguard® WB, Stand Off® SLX100 Water & Oil Repellent, and Sure Klean® Weather Seal Siloxane PD were evaluated for their ability to provide water repellency to the submitted samples.

Stain Repellency - Stand Off® SLX100 Water & Oil Repellent and Stand Off® Stone, Tile & Masonry Protector (STMP) were evaluated for their ability to repel stains from the submitted samples.

Color and Sheen Enhancement - Stand Off® Gloss 'N Guard and Stand Off® Gloss 'N Guard WB were evaluated for their ability to provide color and sheen enhancement to the submitted samples.

Products Evaluated

New Construction Cleaning Products Evaluated

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

Protective Water Repellent Products Evaluated

Sample	Product	Dilution
	Consolideck [®] Saltguard [®] WB	Concentrate
All Submitted Concrete Pavers	Stand Off [®] SLX100 Water & Oil Repellent	Concentrate
	Sure Klean [®] Weather Seal Siloxane PD	Concentrate

Stain Repellency Products Evaluated

Sample	Product	Dilution
All Submitted Concrete	Stand Off [®] SLX100 Water & Oil Repellent	Concentrate
Pavers	Stand Off [®] Stone, Tile & Masonry Protector (STMP)	Concentrate

Color and Sheen Enhancement Products Evaluated

Sample	Product	Dilution
All Submitted Concrete	Stand Off [®] Gloss 'N Guard	Concentrate
Pavers	Stand Off [®] Gloss 'N Guard WB	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 concrete paver during new construction cleaning operations.

Type N cementitious mortar was prepared in compliance with the manufacturers' instructions, applied to the concrete pavers 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

Sure Klean[®] **Light Duty Concrete Cleaner** – 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. Light Duty Concrete Cleaner adds depth to colors and brightens white matrices and exposed aggregate.

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

Test Method – New Construction Cleaning

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.

- 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)

"091806-OT Contr	ol" Concrete	Paver		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-1 T1"	Concrete Pa	ver		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-2 T2"	Concrete Pa	ver	•	<u> </u>
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean [®] Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-4 T4"	Concrete Pa	ver	•	•
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	99%	100%	99%
Sure Klean® Light Duty Concrete Cleaner	1:3	99%	100%	99%
Enviro Klean [®] Safety Klean	1:2	98%	100%	100%
Enviro Klean [®] Safety Klean	1:3	98%	100%	100%
"091806-6 T6"	Concrete Pa	ver		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	100%	100%	99%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	99%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-7 T7"	Concrete Pa	ver		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean® Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-12 T12	"Concrete P	aver		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean [®] Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean® Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%

Test Results – New Construction Cleaning

Cleaning Effectiveness (% Type N Mortar Removal)

"091806-19 T19	" Concrete P	aver		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean [®] Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-23 T23	" Concrete P	aver		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-25 T25	" Concrete P	aver		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	98%	100%	100%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-26 T26	" Concrete P	aver		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-27 T27	" Concrete P	aver		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-38 T38	" Concrete P	aver		
Product	Dilution	7 day	14 day	21 day
Sure Klean [®] Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean [®] Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean [®] Safety Klean	1:2	100%	100%	100%
Enviro Klean [®] Safety Klean	1:3	100%	100%	100%
"091806-41 T41	" Concrete P	aver		
Product	Dilution	7 day	14 day	21 day
Sure Klean® Light Duty Concrete Cleaner	1:2	100%	100%	100%
Sure Klean® Light Duty Concrete Cleaner	1:3	100%	100%	100%
Enviro Klean® Safety Klean	1:2	100%	100%	100%
Enviro Klean® Safety Klean	1:3	100%	100%	100%

Test Results – Color Uniformity

Substrate: Concrete Paver	Pigment	Color : "091806-OT	
Product	Dilution	Aggregate	Surface Pigment
		Exposure	Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean [®] Safety Klean	1:2	0	4
Enviro Klean [®] Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment	Color: "091806-1 T	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean [®] Safety Klean	1:2	0	4
Enviro Klean® Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment	Color: "091806-2 T	2"
Draduct		Aggregate	Surface Pigment
Product	Dilution	Exposure	Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	1	4
Sure Klean® Light Duty Concrete Cleaner	1:3	1	4
Enviro Klean [®] Safety Klean	1:2	0	4
Enviro Klean [®] Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment	Color: "091806-4 T	4"
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean® Šafety Klean	1:2	0	4
Enviro Klean [®] Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment	Color: "091806-6 T	6"
B 1 /		Aggregate	Surface Pigment
Product	Dilution	Exposure	Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean® Safety Klean	1:2	0	4
Enviro Klean® Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment	Color: "091806-7 T	7"
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	1	4
Sure Klean® Light Duty Concrete Cleaner	1:3	1	4
Enviro Klean® Safety Klean	1:2	1	4
Enviro Klean® Safety Klean	1:3	1	4
Substrate: Concrete Paver	Pigment		
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean® Safety Klean	1:2	0	4
Enviro Klean Safety Klean	1:3	0	4
Enviro Nieari Salety Nieari	1.3	U	4

Scale used for reporting results of both categories:

0 – **Worst** match to through-body

3 – Good match to through-body

1 – Poor match to through-body

4 – Best match to through-body

2 – Fair match to through-body

Test Results – Color Uniformity

Substrate: Concrete Paver	Pigment	Color: "091806-19	Γ19"
Product	Dilution	Aggregate	Surface Pigment
Product	Dilution	Exposure	Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean [®] Safety Klean	1:2	0	4
Enviro Klean® Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment		
Product	Dilution	Aggregate	Surface Pigment Alteration/Removal
Sure Klean [®] Light Duty Concrete Cleaner	1:2	Exposure 0	Alteration/Removal 4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean® Safety Klean	1:2	0	4
Enviro Klean [®] Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment		· ·
		Aggregate	Surface Pigment
Product	Dilution	Exposure	Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean® Safety Klean	1:2	0	4
Enviro Klean® Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment		-
Substrate. Concrete r aver	i igilicili		
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean® Safety Klean	1:2	0	4
Enviro Klean® Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment	Color: "091806-27	Γ27"
Droduct	Dilution	Aggregate	Surface Pigment
Product		Exposure	Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean® Safety Klean	1:2	0	4
Enviro Klean [®] Safety Klean	1:3	0	4
Substrate: Concrete Paver	Pigment	Color: "091806-38	
Product	Dilution	Aggregate	Surface Pigment Alteration/Removal
Sure Klean [®] Light Duty Concrete Cleaner	1:2	Exposure 0	Alteration/Removal 4
	1:3	0	4
Sure Klean [®] Light Duty Concrete Cleaner Enviro Klean [®] Safety Klean	1:2	0	4
Enviro Klean Safety Klean Enviro Klean® Safety Klean	1:3	0	4
Substrate: Concrete Paver			
Substrate: Concrete Paver	Pigment		
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Light Duty Concrete Cleaner	1:2	0	4
Sure Klean® Light Duty Concrete Cleaner	1:3	0	4
Enviro Klean® Safety Klean	1:2	0	4
Enviro Klean® Safety Klean	1:3	0	4
,	1		

Scale used for reporting results of both categories:

0 – Worst match to through-body

3 – Good match to through-body

1 – **Poor** match to through-body

4 – Best match to through-body

2 – Fair match to through-body

Photographs - New Construction Cleaning

Type N Mortar

"091806-38 T38" Concrete Paver; 7 Day Cleaning



"091806-38 T38" Concrete Paver; 14 Day Cleaning



"091806-38 T38" Concrete Paver; 21 Day Cleaning



Photographs - Color Uniformity

"091806-38 T38" Concrete Paver



<u>Conclusions</u> – New Construction Cleaning

Based on the test results, both 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 concrete pavers submitted by Syndecrete / Eldorado Stone, Santa Monica, CA are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while providing the best match for color uniformity when compared to the throughbody color of the concrete pavers.

Sample	New Construction Cleaning (Type N mortar, 21 day cleaning)
All Submitted Concrete Pavers	Sure Klean [®] Light Duty Concrete Cleaner (1:2) OR (1:3) OR Enviro Klean [®] Safety Klean (1:2) OR (1:3)

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

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

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

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.

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.

Sample Preparation – Protective Water Repellents

The submitted pavers were scored and allowed to dry for 24 hours prior to treatment. All products were applied by brush in accordance with the current PROSOCO, Inc. Product Data Sheet instructions and allowed to cure for at least 14 days.

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.

<u>Test Results</u> – Protective Water Repellents

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

RESULTS

	ΝL	SULIS
"091806-OT Control"		
Untreated Control	55	mph
Consolideck [®] Saltguard [®] WB	58	mph
Stand Off® SLX100 Water & Oil Repellent	59	mph
Sure Klean [®] Weather Seal Siloxane PD	58	mph
"091806-1 T1"		
Untreated Control	56	mph
Consolideck [®] Saltguard [®] WB	58	mph
Stand Off® SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-2 T2"		
Untreated Control	55	mph
Consolideck [®] Saltguard [®] WB	58	mph
Stand Off® SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-4 T4"		
Untreated Control	57	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-6 T6"		
Untreated Control	55	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off [®] SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-7 T7"		
Untreated Control	54	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-12 T12"		
Untreated Control	55	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	58	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph

<u>Test Results</u> – Protective Water Repellents

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

RESULTS

	1/1	SULIS
"091806-19 T19"		
Untreated Control	56	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	59	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-23 T23"		
Untreated Control	55	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	59	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-25 T25"		
Untreated Control	56	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-26 T26"		
Untreated Control	45	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	57	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-27 T27"		
Untreated Control	55	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-38 T38"		
Untreated Control	55	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph
"091806-41 T41"		
Untreated Control	56	mph
Consolideck [®] Saltguard [®] WB	60	mph
Stand Off® SLX100 Water & Oil Repellent	60	mph
Sure Klean [®] Weather Seal Siloxane PD	60	mph

Photographs - Protective Water Repellents





Consolideck[®]
Saltguard[®] WB

Stand Off® SLX100 Water & Oil Repellent Sure Klean[®] Weather Seal Siloxane PD

Untreated Control

Conclusions – Protective Water Repellents

Based upon laboratory evaluations, all of the evaluated treatments exhibited good water repellency on each of the submitted samples. None of the products altered the appearance of the samples in any way.

Recommendations – Protective Water Repellents

Recommendations for water repellency treatment for the concrete pavers submitted by Syndecrete / Eldorado Stone, Santa Monica, CA are provided in the chart below. Recommendations are based on the treatment that proved most effective at providing water repellency on all types submitted.

Sample	Protective Water Repellents
All Submitted Concrete Pavers	Consolideck [®] Saltguard [®] WB OR Stand Off [®] SLX100 Water & Oil Repellent OR Sure Klean [®] Weather Seal Siloxane PD

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[®] **Stone, Tile & Masonry Protector (STMP)** – A penetrating oil and stain repellent that is an 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.

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

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

Sample Preparation - Stain Repellency

Samples were cleaned with Enviro Klean[®] 2010 All Surface Cleaner diluted with 10 parts water, allowed to dry and absorb atmospheric moisture for 24 hours prior to treatment. Both products were applied by brush in accordance with the current PROSOCO, Inc. Product Data Sheet instructions and allowed to cure for at least 72 hours.

Test Method - Stain Repellency

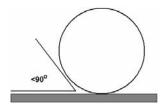
Surface Beading Evaluation

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 ($<90^{\circ}$) which correlates to "above average" repellency. A rating of "3 or 4" indicates "average" repellency. A rating of "5 or greater" indicated that the oil quickly absorbed into the substrate and correlates to "below average" repellency.

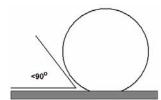
Note: Non-free flowing staining agents such as ketchup and mustard are applied in a globular fashion and therefore are not evaluated for their beading properties.

Rating System (1-5)

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



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.

<u>Test Results</u> – Surface Beading

	"091806-OT Control"											
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee			
Untreated Control	3			4	4	4	5	5	5			
SLX100	1			1	1	1	1	1	1			
STMP	1			1	1	1	1	1	1			
			•	'091806-1	T1"							
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee			
Untreated Control	3			4	4	4	5	5	5			
SLX100	1			1	1	1	1	1	1			
STMP	1			1	1	1	1	1	1			
				'091806-2	T2"							
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee			
Untreated Control	5			5	5	5	5	5	5			
SLX100	1			1	1	1	1	1	1			
STMP	1			1	1	2	1	1	1			
			4	'091806-4	T4"							
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee			
Untreated Control	5			5	4	5	5	5	5			
SLX100	1			1	1	1	1	1	1			
STMP	1			2	1	1	1	1	1			
				'091806-6	T6"							
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee			
Untreated Control	4			5	4	5	5	5	5			
SLX100	1			1	1	1	1	1	1			
STMP	1			2	1	1	1	1	1			
			•	'091806-7	T7"							
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee			
Untreated Control	5			5	5	5	5	5	5			
SLX100	1			1	1	1	1	1	1			
STMP	1			1	1	1	1	1	1			
			"(91806-12	T12"							
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee			
Untreated Control	5			5	5	5	5	5	5			
SLX100	1			1	1	1	1	1	1			
STMP	1			1	2	1	1	1	1			

Test Results – Surface Beading

	"091806-19 T19"												
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee				
Untreated Control	3			5	5	5	5	5	5				
SLX100	1			1	1	1	1	1	1				
STMP	1			1	1	1	1	1	1				
			"(91806-23	T23"								
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee				
Untreated Control	3			5	5	5	5	5	5				
SLX100	1			1	1	1	1	1	1				
STMP	1			2	1	1	1	1	1				
	"091806-25 T25"												
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee				
Untreated Control	3			4	5	5	5	5	5				
SLX100	1			1	1	1	1	1	1				
STMP	1			2	1	2	1	1	1				
			"(91806-26	T26"								
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee				
Untreated Control	3			5	5	5	5	5	5				
SLX100	1			1	1	1	1	1	1				
STMP	1			2	1	1	1	1	1				
			"(91806-27	T27"								
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee				
Untreated Control	3			4	5	5	5	5	5				
SLX100	1			1	1	1	1	1	1				
STMP	1			2	1	1	1	1	1				
			"(91806-38	T38"								
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee				
Untreated Control	3			5	5	4	5	5	5				
SLX100	1			1	1	1	1	1	1				
TMP	1			2	1	2	1	1	1				
			"(91806-41	T41"								
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee				
Untreated Control	4			5	5	5	5	5	5				
SLX100	1			1	1	1	1	1	1				
STMP	1			1	1	1	1	1	1				

				"0918	306-OT Co	ntrol"					
	Untreated	Control				-					
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	70%	30%	30%*	70%*	70%*	50%	30%	30%	90%		
4 hour	90%	90%	100%*	70%*	90%*	95%	30%	30%	90%		
1 hour	100%	95%	100%*	90%*	90%*	95%	30%	30%	90%		
10 min.	100%	95%	100%*	95%*	100%*	100%	30%	30%	90%		
	Stand Off [®]	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	30%	80%*	70%	70%*	60%	95%	95%	95%		
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 [®]	Stone, Tile	& Masonry	Protector (STMP)						
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	30%	30%*	70%	90%*	90%	95%	95%	90%		
4 hour	100%	100%	100%*	100%	100%*	100%	100%	100%	90%		
1 hour	100%	100%	100%*	100%	100%*	100%	100%	100%	90%		
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	90%		
				"0	91806-1 T	1"					
	Untreated	Control									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	70%	30%	30%*	70%*	70%*	50%	30%	30%	90%		
4 hour	90%	90%	100%*	70%*	90%*	95%	30%	30%	90%		
1 hour	100%	95%	100%*	90%*	90%*	95%	30%	30%	90%		
10 min.	100%	95%	100%*	95%*	100%*	100%	30%	30%	100%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	30%	80%	80%	80%	70%	95%	95%	90%		
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	90%		
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%		
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%		
	Stand Off [®] Stone, Tile & Masonry Protector (STMP)										
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	30%	80%	80%	80%	70%	90%	90%	90%		
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%		
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%		

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

				"0	91806-2 T	2"					
	Untreated	Control									
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	95%	50%	30%*	80%*	90%*	90%	30%	30%	80%		
4 hour	98%	98%	80%*	90%*	90%*	90%	30%	30%	80%		
1 hour	98%	100%	95%*	95%*	90%*	90%	30%	30%	90%		
10 min.	98%	100%	100%*	100%*	90%*	90%	30%	30%	90%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	80%	30%*	50%*	80%*	70%	70%	90%	90%	95%		
4 hour	100%	100%*	100%*	100%*	100%	100%	100%	100%	98%		
1 hour	100%	100%	100%*	100%	100%	100%	100%	100%	100%		
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%		
	Stand Off®	Stand Off [®] Stone, Tile & Masonry Protector (STMP)									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	95%	30%*	80%*	80%*	95%	95%	50%	50%	80%		
4 hour	100%	100%*	100%*	90%*	100%	100%	90%	90%	80%		
1 hour	100%	100%	100%	98%*	100%	100%	95%	95%	90%		
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	90%		
				"0	91806-4 T	4"					
	Untreated	Control									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	30%*	90%*	90%*	90%*	90%	50%	50%	80%		
4 hour	100%	90%*	100%*	90%*	90%*	95%	50%	50%	80%		
1 hour	100%	100%*	100%*	90%*	95%*	100%	50%	50%	90%		
10 min.	100%	100%*	100%*	90%*	100%*	100%	50%	50%	90%		
	Stand Off®	SLX100 W	ater & Oil R	epellent		,					
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	30%*	90%*	90%	90%	80%	95%	90%	90%		
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 [®] Stone, Tile & Masonry Protector (STMP)										
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	30%*	80%*	90%	90%	90%	90%	90%	90%		
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%		

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

				"0	91806-6 T	<u> </u>					
	Untreated	Control									
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	95%	90%*	100%*	90%*	90%*	90%	50%	50%	95%		
4 hour	100%	100%*	100%*	100%*	100%	100%	50%	50%	95%		
1 hour	100%	100%*	100%*	100%	100%	100%	80%	80%	100%		
10 min.	100%	100%	100%	100%	100%	100%	80%	80%	100%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	95%	50%*	50%*	90%*	80%*	90%	98%	98%	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®	Stone, Tile	& Masonry	Protector (STMP)						
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%*	80%*	90%*	90%*	80%	90%	90%	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%		
				"0	91806-9 T	9"					
	Untreated	Control									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	50%*	50%*	90%*	80%	80%	50%	50%	80%		
4 hour	100%	95%*	98%*	90%*	80%	80%	50%	50%	80%		
1 hour	100%	100%*	98%*	90%*	80%	80%	50%	50%	80%		
10 min.	100%	100%*	98%*	90%*	80%	80%	50%	50%	80%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%*	50%*	90%*	90%*	80%	95%	95%	95%		
4 hour	100%	100%	98%*	95%*	100%	100%	100%	100%	95%		
1 hour	100%	100%	98%	100%	100%	100%	100%	100%	100%		
10 min.	100%	100%	98%	100%	100%	100%	100%	100%	100%		
	Stand Off [®] Stone, Tile & Masonry Protector (STMP)										
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%*	50%*	90%*	90%*	80%	80%	80%	95%		
4 hour	100%	100%	100%	100%	98%	100%	100%	100%	95%		
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%		
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%		

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

				"09	1806-12 T	12"					
	Untreated	Control									
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	50%*	50%*	90%*	90%*	90%	50%	50%	90%		
4 hour	100%	70%*	95%*	90%*	90%*	90%	50%	50%	90%		
1 hour	100%	100%	95%*	90%*	90%*	90%	50%	50%	100%		
10 min.	100%	100%	95%*	90%*	90%*	90%	50%	50%	100%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	50%	50%*	90%	90%	80%	98%	98%	90%		
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®	Stand Off [®] Stone, Tile & Masonry Protector (STMP)									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%	50%	90%	90%	90%	90%	80%	90%		
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%		
				"09	1806-19 T	19"					
	Untreated	Control									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	50%	80%*	90%*	90%*	90%	50%	50%	90%		
4 hour	100%	70%	95%*	90%*	90%*	90%	50%	50%	90%		
1 hour	100%	100%	95%*	90%*	90%*	90%	50%	50%	95%		
10 min.	100%	100%	95%*	90%*	90%*	90%	50%	50%	95%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	50%	80%*	90%	90%	80%	98%	98%	90%		
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® Stone, Tile & Masonry Protector (STMP)										
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%	80%	90%	90%	90%	90%	80%	90%		
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%		

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

				"09	1806-23 T	23"			
	Untreated	Control							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	95%	50%	80%*	90%*	90%*	90%	50%	50%	90%
4 hour	95%	100%	80%*	90%*	90%*	90%	50%	50%	90%
1 hour	95%	100%	90%*	90%*	90%*	90%	50%	50%	90%
10 min.	95%	100%	90%*	90%*	90%*	90%	80%	80%	90%
	Stand Off®	SLX100 W	ater & Oil R	epellent					
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	95%	50%	50%	80%	95%	80%	95%	95%	95%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	95%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	95%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off®	Stone, Tile	& Masonry	Protector (STMP)	'			
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	50%	80%	80%	80%	80%	95%	95%	95%
4 hour	100%	100%	95%	100%	100%	100%	100%	100%	95%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
				"09	1806-25 T	25"			
	Untreated	Control							
			Mustand	Dod Wine	Balsamic	Cau Causa	Olive Oil	Wesson	Het Ceffee
	Coca-Cola	•	Mustard	Red Wine	Vinegar	Soy Sauce	Olive Oil	Oil	Hot Coffee
24 hr	95%	50%	70%	90%	90%	80%	80%	80%	95%
4 hour	95%	100%	80%	90%	90%	100%	80%	80%	95%
1 hour	100%	100%	80%	90%	90%	100%	80%	80%	100%
10 min.	100%	100%	100%	100%	100%	100%	80%	80%	100%
	Stand Off®	SLX100 W	ater & Oil R	epellent					
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	95%	50%	90%	95%	95%	80%	98%	98%	98%
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®	Stone, Tile	& Masonry	Protector (STMP)				
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	50%	90%	95%	95%	80%	98%	95%	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%

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

				"09	1806-26 T						
	Untreated	Control									
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	60%	70%	95%	98%	90%	50%	50%	90%		
4 hour	100%	100%	95%	95%	98%	95%	50%	50%	90%		
1 hour	100%	100%	95%	95%	98%	98%	50%	50%	100%		
10 min.	100%	100%	100%	95%	100%	100%	80%	80%	100%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	95%	50%	80%	90%	98%	98%	98%	98%	90%		
4 hour	100%	100%	100%	98%	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®	Stand Off [®] Stone, Tile & Masonry Protector (STMP)									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%	50%	90%	100%	98%	95%	95%	90%		
4 hour	100%	100%	100%	98%	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%		
				"09	1806-27 T	27"					
	Untreated	Control									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	90%	60%	70%	80%	90%	90%	50%	50%	90%		
4 hour	100%	100%	95%	90%	90%	95%	50%	50%	90%		
1 hour	100%	100%	95%	90%	90%	95%	80%	80%	90%		
10 min.	100%	100%	100%	90%	90%	100%	80%	80%	90%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	60%	60%	95%	100%	98%	100%	98%	98%		
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 [®] Stone, Tile & Masonry Protector (STMP)										
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	98%	80%	100%	100%	95%	100%	98%	98%		
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%		

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

				"09	1806-38 T						
	Untreated	Control									
	Coca-Cola		Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%	50%*	90%*	90%*	90%	50%	50%	90%		
4 hour	100%	100%	95%*	90%*	90%*	90%	50%	50%	90%		
1 hour	100%	100%	95%*	90%*	90%*	90%	50%	50%	90%		
10 min.	100%	100%	95%*	95%*	95%*	95%	50%	50%	90%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	98%	95%	90%	90%	90%	100%	100%	95%		
4 hour	100%	100%	98%	100%	100%	100%	100%	100%	95%		
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%		
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%		
	Stand Off®	Stone, Tile	& Masonry	Protector (STMP)						
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%	95%	90%	90%	90%	90%	90%	95%		
4 hour	100%	100%	98%	100%	100%	100%	90%	98%	95%		
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	95%		
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%		
				"09	1806-41 T	41"					
	Untreated	Control									
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%	100%*	90%*	90%*	95%	50%	50%	90%		
4 hour	100%	100%	95%*	90%*	90%*	95%	50%	50%	90%		
1 hour	100%	100%	95%*	90%*	90%*	95%	50%	50%	90%		
10 min.	100%	100%	95%*	95%*	95%*	95%	50%	50%	90%		
	Stand Off®	SLX100 W	ater & Oil R	epellent							
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%	50%	90%	90%	90%	95%	95%	95%		
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	95%		
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%		
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%		
	Stand Off [®] Stone, Tile & Masonry Protector (STMP)										
	Coca-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee		
24 hr	100%	50%	95%	90%	90%	90%	90%	90%	95%		
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%		

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

Photographs – Stain Repellency

"091806-27 T27" Concrete Paver; Stains Applied



Stand Off[®] SLX100 Water & Oil Repellent

Stand Off[®] Stone, Tile & Masonry Protector (STMP)

Untreated Control

"091806-27 T27" Concrete Paver; Stains Removed



Stand Off® SLX100 Water & Oil Repellent

Stand Off® Stone, Tile & Masonry Protector (STMP)

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 concrete pavers submitted by Syndecrete / Eldorado Stone, Santa Monica, CA 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
All Submitted Concrete Pavers	Stand Off [®] SLX100 Water & Oil Repellent OR Stand Off [®] Stone, Tile & Masonry Protector (STMP)	Enviro Klean [®] 2010 All Surface Cleaner (1:10)

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

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

Color and Sheen Enhancement

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

<u>Description of Products Evaluated</u> – Color and Sheen Enhancement

Paver Kare® Paver Enhancer WB – Paver Enhancer WB is designed to enhance the natural appearance of clay and concrete pavers while providing excellent beading characteristics and protection from water penetration. This water-borne treatment complies with all known AIM VOC regulations nationwide.

Stand Off[®] **Gloss 'N Guard WB** – A highly durable polyurethane protective coating for tile, pavers, terrazzo and other polished and unpolished masonry. Gloss 'N Guard WB dries to a high-gloss finish, which enhances the natural beauty of treated surfaces – both horizontal and vertical. Gloss 'N Guard WB's water-based formula offers several improvements on similar solvent-based products. No solvent odor, easy soap and water cleanup, and reduced fire-hazards make the treatment safe and easy to use, as well as effective. In addition, Gloss 'N Guard WB complies with all known regulations limiting Volatile Organic Compound (VOC) content.

Sample Preparation - Color and Sheen Enhancement

Samples were cleaned with Enviro Klean[®] 2010 All Surface Cleaner diluted with 10 parts water and allowed to dry for 24 hours prior to treatment.

Test Method - Color and Sheen Enhancement

All products were applied by brush in accordance with the application instructions in the current PROSOCO, Inc. Product Data Sheets. After 24 hours, a visual evaluation was conducted to determine the level of color and sheen enhancement the treatments provided as compared to the untreated control.

Test Results – Color and Sheen Enhancement

"091806-OT Control"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	2	0			
Stand Off® Gloss 'N Guard WB	2	3			
"091806-1 T1"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	2	0			
Stand Off [®] Gloss 'N Guard WB	2	3			
"091806-2 T2"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	0	0			
Stand Off® Gloss 'N Guard WB	2	3			
"0	"091806-4 T4"				
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	0	0			
Stand Off® Gloss 'N Guard WB	2	3			
"091806-6 T6"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	1	0			
Stand Off® Gloss 'N Guard WB	1	3			
"091806-7 T7"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	2	0			
Stand Off [®] Gloss 'N Guard WB	2	3			
"091806-12 T12"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	2	0			
Stand Off® Gloss 'N Guard WB	3	3			

Scale: 0 - No Enhancement; Dull

1 - Slight Enhancement

2 - Moderate Enhancement

3 - Significant Enhancement

Test Results – Color and Sheen Enhancement

"091806-19 T19"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	3	0			
Stand Off® Gloss 'N Guard WB	3	3			
"091806-23 T23"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	1	0			
Stand Off® Gloss 'N Guard WB	2	3			
"091806-25 T25"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	0	0			
Stand Off [®] Gloss 'N Guard WB	2	3			
"091806-26 T26"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	2	0			
Stand Off® Gloss 'N Guard WB	2	3			
"09	1806-27 T27"				
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	2	0			
Stand Off® Gloss 'N Guard WB	2	3			
"091806-38 T38"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	2	0			
Stand Off [®] Gloss 'N Guard WB	2	3			
"091806-41 T41"					
Treatment	Color Enhancement	Sheen Enhancement			
Paver Kare® Paver Enhancer WB	2	0			
Stand Off [®] Gloss 'N Guard WB	2	3			

Scale: 0 - No Enhancement; Dull

1 - Slight Enhancement

2 - Moderate Enhancement

3 - Significant Enhancement

Photographs – Color and Sheen Enhancement

"091806-19 T19" Concrete Paver; Treatment Applied



Paver Kare[®] Paver Enhancer WB Stand Off[®] Gloss 'N Guard WB

Untreated Control

Recommendations - Color and Sheen Enhancement

Recommendations for color and sheen enhancement for the concrete pavers submitted by Syndecrete / Eldorado Stone, Santa Monica, CA are provided in the chart below. Recommendations are based on the treatment that proved most effective in providing color and sheen enhancement to the submitted samples.

Sample	Color Enhancement	Sheen Enhancement
"091806-OT Control", "091806-1 T1", "091806-6 T6", "091806-7 T7", "091806-12 T12", "091806- 19 T19", "091806-26 T26", "091806-27 T27", "091806-38 T38" and "091806-41 T41"	Paver Kare [®] Paver Enhancer WB OR Stand Off [®] Gloss 'N Guard WB	Stand Off [®] Gloss 'N Guard WB
"091806-2 T2", "091806-4 T4", "091806-23 T23" and "091806-25 T25"	Stand Off [®] Gloss 'N Guard WB	Stand Off [®] Gloss 'N Guard WB

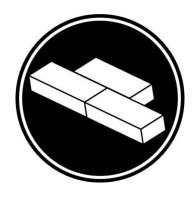
Apply all products in accordance with the manufacturer's recommendation provided on container labels and product data sheets. On-site testing should be conducted to determine the most appropriate product and procedures for a particular project. See product literature for additional application and product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

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