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    Technical Services TECH Note RILEM Tube Test Procedures

    Product Data literature for all products evaluated

**Submitted Information**

**For:** Mark O'Keefe  
Paul Tessier

**Subject:** Arto Brick – California Pavers  
Gardena, CA

**Date:** July 21, 2006

**Project:** 0605-21 PTP

**Samples Submitted:** 7 types of precast concrete pavers

<b>Sample</b>	<b>Color</b>	<b>Size</b>
"Artillo/Charcoal"	Dark Gray/Black	6" x 6" x 1"
"Artillo/Artillo Café/Luna"	Tan/Orange	6" x 6" x 1"
"Artillo/Tuscan Mustard"	Tan/Brown	6" x 6" x 1"
"Roman Tile/Early Gray/Limestone"	Light Gray	8" x 8" x 1"
"Roman Tile/Early Gray/Travertine"	Light Gray	8" x 8" x 1"
"Roman Tile/Hacienda/Limestone"	Tan/White	8" x 8" x 1"
"Roman Tile/Natural Gray"	Gray	8" x 8" x 1"

Submitted by: Mark O'Keefe

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## **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.

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## **Purpose of Testing**

Seven types of precast 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 and grout while limiting surface alterations to the decorative finish. The surface alteration evaluation was visually determined based upon perceived discoloration or erosion/etching of the precast concrete pavers.

**New Construction Cleaning** – Paver Kare<sup>®</sup> Cleaner/Brightener was evaluated at various dilutions to determine the optimal concentration of cleaner for removal of laboratory applied mortar and grout while limiting surface alterations to the decorative finish.

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 or sanded grout. The wet, mortar- or grout-filled cylinder was allowed to remain in contact with the samples for 10 minutes before removal.

Heavy deposits of mortar and grout 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 days, 14 days, and 21 days of curing and sanded grout staining after 3 and 7 days.

A visual examination was also made to determine if the tested cleaners caused any surface alterations to the submitted concrete pavers based on the following:

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

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

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

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

**Protective Water Repellents** – Paver Kare<sup>®</sup> Penetrating Water Repellent and Stand Off<sup>®</sup> SLX100 Water & Oil Repellent were evaluated for their ability to provide water repellency to the submitted samples.

**Stain Repellency** – Stand Off<sup>®</sup> SLX100 Water & Oil Repellent and Stand Off<sup>®</sup> Stone and Tile & Masonry Protector (STMP) were evaluated for their ability to repel stains on the submitted samples.

**Color and Sheen Enhancement** – Paver Kare<sup>®</sup> Deep Sheen WB was evaluated for its ability to provide color and sheen enhancement to the submitted samples.

**Products Evaluated****New Construction Cleaning Products Evaluated**

Sample	Product	Dilution
All Submitted Precast Concrete Pavers	Paver Kare® Cleaner/Brightener	1:2, 1:3

**Protective Water Repellent Products Evaluated**

Sample	Product	Dilution
All Submitted Precast Concrete Pavers	Paver Kare® Penetrating Water Repellent	Concentrate
	Stand Off® SLX100 Water & Oil Repellent	Concentrate

**Stain Repellency Products Evaluated**

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

**Color Enhancement Products Evaluated**

Sample	Product	Dilution
All Submitted Precast Concrete Pavers	Paver Kare® Deep Sheen 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 and sanded grout from the submitted samples while limiting surface alterations to the decorative finish.

Type N cementitious mortar and sanded grout were prepared in compliance with the manufacturer’s instructions, applied to the concrete pavers and allowed to cure. Mortar and grout 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. The removal of sanded grout was visually evaluated after 3 and 7 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.

**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
4. Reapply the product and moderately agitate with a brush.
5. Pressure rinse thoroughly.\*
6. Allow the sample to dry for at least 18 hours and visually examine.

**\*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; Type N Mortar****Cleaning Effectiveness (% Type N Mortar Removal)**

<b>“Artillo/Charcoal”</b>				
<b>Product</b>	<b>Dilution</b>	<b>7 day</b>	<b>14 day</b>	<b>21 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%	100%
<b>“Artillo/Artillo Café/Luna”</b>				
<b>Product</b>	<b>Dilution</b>	<b>7 day</b>	<b>14 day</b>	<b>21 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%	100%
<b>“Artillo/Tuscan Mustard”</b>				
<b>Product</b>	<b>Dilution</b>	<b>7 day</b>	<b>14 day</b>	<b>21 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%	100%
<b>“Roman Tile/Early Gray/Limestone”</b>				
<b>Product</b>	<b>Dilution</b>	<b>7 day</b>	<b>14 day</b>	<b>21 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%	100%
<b>“Roman Tile/Early Gray/Travertine”</b>				
<b>Product</b>	<b>Dilution</b>	<b>7 day</b>	<b>14 day</b>	<b>21 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%	100%
<b>“Roman Tile/Hacienda/Limestone”</b>				
<b>Product</b>	<b>Dilution</b>	<b>7 day</b>	<b>14 day</b>	<b>21 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%	100%
<b>“Roman Tile/Natural Gray”</b>				
<b>Product</b>	<b>Dilution</b>	<b>7 day</b>	<b>14 day</b>	<b>21 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%	100%

**Test Results – New Construction Cleaning; Sanded Grout****Cleaning Effectiveness (% Sanded Grout Removal)**

<b>“Artillo/Charcoal”</b>			
<b>Product</b>	<b>Dilution</b>	<b>3 day</b>	<b>7 day</b>
Paver Kare® Cleaner/Brightener	1:2	99%	95%
Paver Kare® Cleaner/Brightener	1:3	98%	95%
<b>“Artillo/Artillo Café/Luna”</b>			
<b>Product</b>	<b>Dilution</b>	<b>3 day</b>	<b>7 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%
Paver Kare® Cleaner/Brightener	1:3	99%	98%
<b>“Artillo/Tuscan Mustard”</b>			
<b>Product</b>	<b>Dilution</b>	<b>3 day</b>	<b>7 day</b>
Paver Kare® Cleaner/Brightener	1:2	99%	99%
Paver Kare® Cleaner/Brightener	1:3	99%	98%
<b>“Roman Tile/Early Gray/Limestone”</b>			
<b>Product</b>	<b>Dilution</b>	<b>3 day</b>	<b>7 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%

**Test Results – New Construction Cleaning; Sanded Grout**

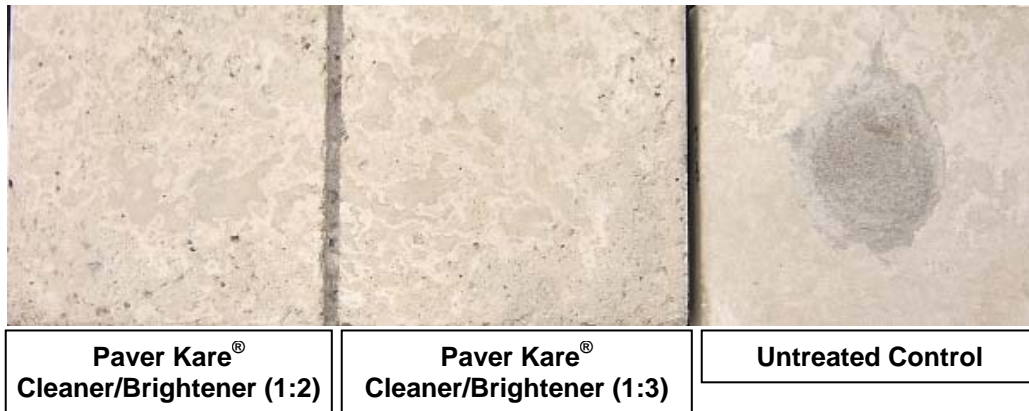
<b>“Roman Tile/Early Gray/Travertine”</b>			
<b>Product</b>	<b>Dilution</b>	<b>3 day</b>	<b>7 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%
<b>“Roman Tile/Hacienda/Limestone”</b>			
<b>Product</b>	<b>Dilution</b>	<b>3 day</b>	<b>7 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%
<b>“Roman Tile/Natural Gray”</b>			
<b>Product</b>	<b>Dilution</b>	<b>3 day</b>	<b>7 day</b>
Paver Kare® Cleaner/Brightener	1:2	100%	100%
Paver Kare® Cleaner/Brightener	1:3	100%	100%

**Test Results – Limiting Surface Alterations**

<b>Substrate:</b> Precast Concrete Paver		<b>Pigment Color:</b> “Artillo/Charcoal”			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Paver Kare® Cleaner/Brightener	1:2	1	0	1	0
Paver Kare® Cleaner/Brightener	1:3	1	0	1	0
<b>Substrate:</b> Precast Concrete Paver		<b>Pigment Color:</b> “Artillo/Artillo Café/Luna”			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Paver Kare® Cleaner/Brightener	1:2	2	0	1	0
Paver Kare® Cleaner/Brightener	1:3	2	0	1	0
<b>Substrate:</b> Precast Concrete Paver		<b>Pigment Color:</b> “Artillo/Tuscan Mustard”			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Paver Kare® Cleaner/Brightener	1:2	3	0	2	0
Paver Kare® Cleaner/Brightener	1:3	3	0	2	0
<b>Substrate:</b> Precast Concrete Paver		<b>Pigment Color:</b> “Roman Tile/Early Gray/Limestone”			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Paver Kare® Cleaner/Brightener	1:2	0	0	0	0
Paver Kare® Cleaner/Brightener	1:3	0	0	0	0
<b>Substrate:</b> Precast Concrete Paver		<b>Pigment Color:</b> “Roman Tile/Early Gray/Travertine”			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Paver Kare® Cleaner/Brightener	1:2	0	0	0	0
Paver Kare® Cleaner/Brightener	1:3	0	0	0	0
<b>Substrate:</b> Precast Concrete Paver		<b>Pigment Color:</b> “Roman Tile/Hacienda/Limestone”			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Paver Kare® Cleaner/Brightener	1:2	0	0	0	0
Paver Kare® Cleaner/Brightener	1:3	0	0	0	0
<b>Substrate:</b> Precast Concrete Paver		<b>Pigment Color:</b> “Roman Tile/Natural Gray”			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Paver Kare® Cleaner/Brightener	1:2	0	0	0	0
Paver Kare® Cleaner/Brightener	1:3	0	0	0	0

**Photographs – New Construction Cleaning; Type N Mortar**

**“Roman Tile/Early Gray/Limestone” Precast Concrete Paver; 7 Day Cleaning**



**“Roman Tile/Early Gray/Limestone” Precast Concrete Paver; 14 Day Cleaning**



**“Roman Tile/Early Gray/Limestone” Precast Concrete Paver; 21 Day Cleaning**





**Photographs – New Construction Cleaning; Sanded Grout**

**“Roman Tile/Early Gray/Limestone” Precast Concrete Paver; 3 Day Cleaning**



<b>Paver Kare® Cleaner/Brightener (1:2)</b>	<b>Paver Kare® Cleaner/Brightener (1:3)</b>	<b>Untreated Control</b>
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**“Roman Tile/Early Gray/Limestone” Precast Concrete Paver; 7 Day Cleaning**



<b>Paver Kare® Cleaner/Brightener (1:2)</b>	<b>Paver Kare® Cleaner/Brightener (1:3)</b>	<b>Untreated Control</b>
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**Photographs – Limiting Surface Alterations**

**“Roman Tile/Early Gray/Limestone” Precast Concrete Paver**



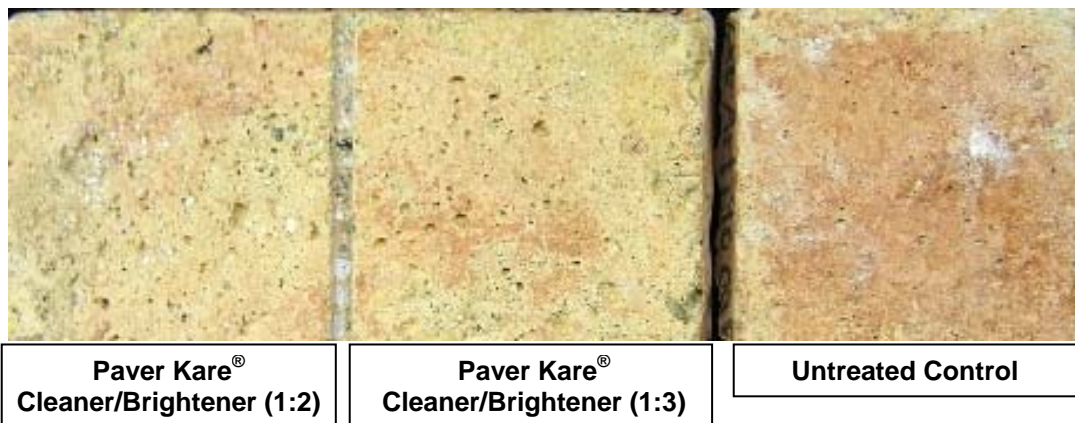
<b>Paver Kare® Cleaner/Brightener (1:2)</b>	<b>Paver Kare® Cleaner/Brightener (1:3)</b>	<b>Untreated Control</b>
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**Photographs – Limiting Surface Alterations**

**“Artillo/Tuscan Mustard” Precast Concrete Paver**



**“Artillo/Artillo Café/Luna” Precast Concrete Paver**



**“Artillo/Charcoal” Precast Concrete Paver**



### **Conclusions – New Construction Cleaning**

Based on the test results, at least one dilution of the PROSOCO, Inc. products tested performed well in removing excess Type N mortar and sanded grout from the submitted samples even after allowing the mortar to remain on the surface of the samples for 21 days and the grout to remain on the surface for 7 days.

Both dilutions of Paver Kare® Cleaner/Brightener removed slight amounts of the pigmented finish from the surface of the “Artillo/Charcoal” samples. It is therefore recommended that job-site testing be performed in an inconspicuous area before attempting overall cleaning to determine if the change in surface finish of these samples is acceptable.

**NOTE:** Both dilutions of Paver Kare® Cleaner/Brightener tested removed moderate to heavy amounts of the pigmented finish from the surface of the “Artillo/Artillo Café/Luna” and “Artillo/Tuscan Mustard” samples. Based on this evaluation, Paver Kare® Cleaner/Brightener is not recommended for new construction cleaning on these samples.

It is recommended that the selected cleaners always be used in the lowest possible concentration. It should be rinsed with the lowest pressure of water as practical to minimize removal of the decorative finish. Excessive pressure, water volume, and/or repeated application of the recommended products may combine to damage or remove decorative finishes. To facilitate easier removal of excess mortar, grout and construction dirt while minimizing any potential surface alterations to the decorative finish, clean within 7 days of construction for Type N mortar and 3 days for sanded grout.

### **Recommendations – New Construction Cleaning**

Recommendations for cleaning for the precast concrete pavers submitted by Arto Brick – California Pavers, Gardena, CA are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar and grout while limiting surface alterations to the decorative finish of the submitted samples.

<b>Sample</b>	<b>New Construction Cleaning (Type N mortar, 21 day cleaning)</b>	<b>New Construction Cleaning (Sanded Grout, 7 day cleaning)</b>
“Artillo/Charcoal” “Roman Tile/Early Gray/Limestone” “Roman Tile/Early Gray/Travertine” “Roman Tile/Hacienda/Limestone” “Roman Tile/Natural Gray”	Paver Kare® Cleaner/Brightener (1:3)	Paver Kare® Cleaner/Brightener (1:3)
“Artillo/Artillo Café/Luna” “Artillo/Tuscan Mustard”	<b>No Recommendations (See NOTE in Conclusions)</b>	<b>No Recommendations (See NOTE in Conclusions)</b>

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

## Protective Water Repellents

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

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

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

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## Description of Products Evaluated – Protective Water Repellents

**Paver Kare® Penetrating Water Repellent** – A ready-to-use water-based, VOC compliant silane/siloxane water repellent and “chloride screen” for the protection of concrete and masonry surfaces. Penetrating Water Repellent penetrates more deeply than conventional water- or solvent-based water repellents. Low odor and alkaline stable, it is ideal for field or in-plant application to concrete and most masonry surfaces. Penetrating Water Repellent 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.

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## Sample Preparation – Protective Water Repellents

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

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## Test Methods – Protective Water Repellents

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

The water absorption tube test simulating wind driven and wind blown rain conditions was performed. Tests were run with vertical 5.0-milliliter head pressures. Filled to 5.0 milliliters, a water absorption tube produces a 103 mph dynamic wind pressure. See RILEM II.4 Tech Note for additional information.

The ranking system used to evaluate the effectiveness of the products applied to each submitted sample is as follows:

**AA** = “Above Average” correlates to less than or equal to 20% of the maximum untreated absorption.

**A** = “Average” correlates to less than or equal to 50% of the maximum untreated absorption.

**BA** = “Below Average” correlates to greater than 50% of the maximum untreated absorption.

**EXAMPLE:** If RILEM tubes applied to an untreated sample result in loss of 5 ml of water or more, then:

A rating of **AA** *Above Average* water repellent performance would require loss of less than or equal to:

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

A rating of **A** *Average* water repellent performance would require loss of less than or equal to:

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

A rating of **BA** *Below Average* water repellent performance would require loss of more than:

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

**Test Results – Protective Water Repellents****Water Absorption Tube Test: Horizontal RILEM II.4, 5.0 milliliters, 20 minutes**

AA = Above Average

A = Average

BA = Below Average

<b>“Artillo/Charcoal”</b>	<b>Results in mL loss</b>	<b>Ranking</b>
Untreated Control	-0.4	--
Paver Kare® Penetrating Water Repellent	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
<b>“Artillo/Artillo Café/Luna”</b>	<b>Results in mL loss</b>	<b>Ranking</b>
Untreated Control	-0.4	--
Paver Kare® Penetrating Water Repellent	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
<b>“Artillo/Tuscan Mustard”</b>	<b>Results in mL loss</b>	<b>Ranking</b>
Untreated Control	-0.4	--
Paver Kare® Penetrating Water Repellent	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
<b>“Roman Tile/Early Gray/Limestone”</b>	<b>Results in mL loss</b>	<b>Ranking</b>
Untreated Control	-0.2	--
Paver Kare® Penetrating Water Repellent	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
<b>“Roman Tile/Early Gray/Travertine”</b>	<b>Results in mL loss</b>	<b>Ranking</b>
Untreated Control	-0.2	--
Paver Kare® Penetrating Water Repellent	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
<b>“Roman Tile/Hacienda/Limestone”</b>	<b>Results in mL loss</b>	<b>Ranking</b>
Untreated Control	-0.2	--
Paver Kare® Penetrating Water Repellent	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>
<b>“Roman Tile/Natural Gray”</b>	<b>Results in mL loss</b>	<b>Ranking</b>
Untreated Control	-0.4	--
Paver Kare® Penetrating Water Repellent	-0.0	<u>AA</u>
Stand Off® SLX100 Water & Oil Repellent	-0.0	<u>AA</u>



**Photographs – Protective Water Repellents**

“Artillo/Artillo Café/Luna” Precast Concrete Paver; Horizontal RILEM II.4, 5.0 milliliters, 20 minutes



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**Conclusions – Protective Water Repellents**

Based upon laboratory evaluations, both Paver Kare® Penetrating Water Repellent and Stand Off® SLX100 Water & Oil Repellent exhibited above average water repellency on each of the submitted samples. Neither treatment altered the appearance of the samples in any way.

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**Recommendations – Protective Water Repellents**

Recommendations for water repellency treatment for the precast concrete pavers submitted by Arto Brick – California Pavers, Gardena, 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 Precast Concrete Pavers	Paver Kare® Penetrating Water Repellent OR Stand Off® SLX100 Water & Oil Repellent

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**

<b><u>Products</u></b>	<b><u>Temperature</u></b>
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 instructions in the current PROSOCO, Inc. Product Data Sheets and allowed to cure for at least 72 hours.



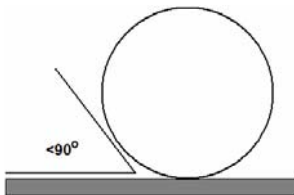
**Test Method – Stain Repellency****Surface Beading Evaluation**

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.

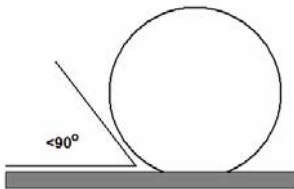
**Note: Non-free flowing staining agents such as ketchup and mustard are applied in a globular fashion and therefore are not evaluated for their beading properties.**

**Rating System (1-5)**

1. No wetting of contact area (no darkening); angle less than  $90^\circ$ .



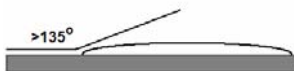
2. Wetting contained to the contact area (slight darkening); angle is less than  $90^\circ$ .



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



4. Wetting beyond the contact area (darkening); angle is greater than  $135^\circ$ .



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<sup>®</sup> 2010 All Surface Cleaner diluted 1 part concentrate to 10 parts fresh water and scrubbed under a stream of running water from a faucet. Samples were allowed to dry for 24 hours. Evaluation consisted of a visual examination of the tested areas to determine the percentage of staining removal.

**Test Results – Surface Beading**

<b>“Artillo/Charcoal”</b>									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	4	-	-	4	4	4	5	5	4
SLX100	1	-	-	2	2	2	3	3	3
STMP	2	-	-	2	2	2	3	3	3
<b>“Artillo/Artillo Café/Luna”</b>									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	2	-	-	4	4	4	5	5	4
SLX100	1	-	-	1	1	1	2	2	2
STMP	2	-	-	2	2	2	3	3	3
<b>“Artillo/Tuscan Mustard”</b>									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	4	4	4	5	5	4
SLX100	2	-	-	2	2	2	3	3	3
STMP	2	-	-	2	2	2	3	3	3
<b>“Roman Tile/Early Gray/Limestone”</b>									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	3	3	3	5	5	3
SLX100	1	-	-	1	1	1	2	2	2
STMP	2	-	-	2	2	2	2	2	2
<b>“Roman Tile/Early Gray/Travertine”</b>									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	3	4	4	5	5	4
SLX100	1	-	-	2	2	2	2	2	2
STMP	2	-	-	2	2	2	3	3	3
<b>“Roman Tile/Hacienda/Limestone”</b>									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	3	-	-	3	3	3	5	5	3
SLX100	1	-	-	2	2	2	2	2	2
STMP	3	-	-	3	2	2	2	2	2
<b>“Roman Tile/Natural Gray”</b>									
	Coco-Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	2	-	-	4	4	4	5	5	4
SLX100	1	-	-	2	2	2	2	2	2
STMP	2	-	-	3	3	3	2	2	3

**Test Results – Stain Repellency**

<b>“Artillo/Charcoal”</b>									
<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%*	95%*	60%	100%*	100%	<1%	<1%	100%
<b>4 hour</b>	100%	100%*	95%*	60%	100%*	100%	<1%	<1%	100%
<b>1 hour</b>	100%	100%*	100%*	100%	100%*	100%	<1%	<1%	100%
<b>10 min.</b>	100%	100%*	100%*	100%	100%*	100%	<1%	<1%	100%
<b>Stand Off® SLX100 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%*	90%	100%*	100%	70%	70%	100%
<b>4 hour</b>	100%	100%*	100%*	90%	100%*	100%	70%	70%	100%
<b>1 hour</b>	100%	100%*	100%*	100%	100%*	100%	70%	70%	100%
<b>10 min.</b>	100%	100%*	100%*	100%	100%*	100%	100%	100%	100%
<b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</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%*	95%	100%*	100%	90%	90%	100%
<b>4 hour</b>	100%	100%*	100%*	99%	100%*	100%	90%	90%	100%
<b>1 hour</b>	100%	100%*	100%*	100%	100%*	100%	90%	90%	100%
<b>10 min.</b>	100%	100%*	100%*	100%	100%*	100%	100%	100%	100%
<b>“Artillo/Artillo Café/Luna”</b>									
<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%	80%	100%	100%	<1%	<1%	100%
<b>4 hour</b>	100%	100%	100%	95%	100%	100%	<1%	<1%	100%
<b>1 hour</b>	100%	100%	100%	99%	100%	100%	<1%	<1%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	<1%	<1%	100%
<b>Stand Off® SLX100 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%
<b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</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%

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

**Test Results – Stain Repellency**

<b>“Artillo/Tuscan Mustard”</b>									
<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%*	50%	100%*	90%	<1%	<1%	100%
<b>4 hour</b>	100%	100%*	100%*	50%	100%*	100%	<1%	<1%	100%
<b>1 hour</b>	100%	100%*	100%*	95%	100%*	100%	<1%	<1%	100%
<b>10 min.</b>	100%	100%*	100%*	95%	100%*	100%	<1%	<1%	100%
<b>Stand Off® SLX100 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%
<b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</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>“Roman Tile/Early Gray/Limestone”</b>									
<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%	98%	95%	90%	98%	98%	<1%	<1%	100%
<b>4 hour</b>	100%	100%	98%	90%	98%	98%	<1%	<1%	100%
<b>1 hour</b>	100%	100%	100%	90%	98%	98%	<1%	<1%	100%
<b>10 min.</b>	100%	100%	100%	90%	98%	98%	<1%	<1%	100%
<b>Stand Off® SLX100 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%	98%	90%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	90%	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 (STMP)</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%	98%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	98%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	98%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%

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

**Test Results – Stain Repellency**

<b>“Roman Tile/Early Gray/Travertine”</b>									
<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>	80%	100%	80%	<1%	95%	70%	<1%	<1%	80%
<b>4 hour</b>	80%	100%	95%	10%	95%	80%	<1%	<1%	80%
<b>1 hour</b>	95%	100%	99%	70%	95%	100%	<1%	<1%	100%
<b>10 min.</b>	100%	100%	100%	95%	99%	100%	<1%	<1%	100%
<b>Stand Off® SLX100 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%	80%	40%	100%	100%	70%	70%	100%
<b>4 hour</b>	100%	100%	95%	40%	100%	100%	90%	90%	100%
<b>1 hour</b>	100%	100%	100%	100%	100%	100%	95%	95%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</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%	100%	100%	90%	90%	100%
<b>4 hour</b>	100%	100%	100%	95%	100%	100%	100%	100%	100%
<b>1 hour</b>	100%	100%	100%	95%	100%	100%	100%	100%	100%
<b>10 min.</b>	100%	100%	100%	100%	100%	100%	100%	100%	100%
<b>“Roman Tile/Hacienda/Limestone”</b>									
<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%	90%	80%	90%	90%	<1%	<1%	80%
<b>4 hour</b>	100%	100%	100%	100%	90%	90%	<1%	<1%	90%
<b>1 hour</b>	100%	100%	100%	100%	90%	90%	<1%	<1%	90%
<b>10 min.</b>	100%	100%	100%	100%	90%	90%	<1%	<1%	100%
<b>Stand Off® SLX100 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%	90%	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® Stone, Tile &amp; Masonry Protector (STMP)</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%

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

**Test Results – Stain Repellency**

<b>“Roman Tile/Natural Gray”</b>									
<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>	60%	100%*	90%*	20%	90%*	95%	<1%	<1%	70%
<b>4 hour</b>	60%	100%*	95%*	30%	95%*	95%	<1%	<1%	90%
<b>1 hour</b>	100%	100%*	100%*	30%	100%*	95%	<1%	<1%	90%
<b>10 min.</b>	100%	100%*	100%*	80%	100%*	95%	<1%	<1%	100%
<b>Stand Off® SLX100 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%*	70%*	90%	100%*	90%	70%	70%	100%
<b>4 hour</b>	100%	100%*	100%*	90%	100%*	100%	80%	80%	100%
<b>1 hour</b>	100%	100%*	100%*	90%	100%*	100%	95%	95%	100%
<b>10 min.</b>	100%	100%*	100%*	90%	100%*	100%	95%	95%	100%
<b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</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%	95%*	100%	100%	100%	100%
<b>4 hour</b>	100%	100%*	100%*	90%	95%*	100%	100%	100%	100%
<b>1 hour</b>	100%	100%*	100%*	90%	95%*	100%	100%	100%	100%
<b>10 min.</b>	100%	100%*	100%*	100%	100%*	100%	100%	100%	100%

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

**Photographs – Stain Repellency**

**“Roman Tile/Natural Gray” Precast Concrete Paver; Stains Applied**



**Stand Off<sup>®</sup> SLX100 Water & Oil Repellent**

**Stand Off<sup>®</sup> Stone, Tile & Masonry Protector (STMP)**

**Untreated Control**

**“Roman Tile/Natural Gray” Precast Concrete Paver; Stains Removed**



**Stand Off<sup>®</sup> SLX100 Water & Oil Repellent**

**Stand Off<sup>®</sup> 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, at least one of the treatments evaluated was effective in repelling the staining agents, especially the oils, from the submitted samples.

**Recommendations – Stain Repellency**

Recommendations for stain resistance treatment for the precast concrete pavers submitted by Arto Brick – California Pavers, Gardena, 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
“Artillo/Artillo Café/Luna” “Artillo/Tuscan Mustard” “Roman Tile/Early Gray/Limestone” “Roman Tile/Hacienda/Limestone”	Stand Off® Stone, Tile & Masonry Protector (STMP) OR Stand Off® SLX100 Water & Oil Repellent	Enviro Klean® 2010 All Surface Cleaner (1:10)
“Artillo/Charcoal” “Roman Tile/Early Gray/Travertine” “Roman Tile/Natural Gray”	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, 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.



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### **Color and Sheen Enhancement**

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

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### **Description of Products Evaluated** – Color and Sheen Enhancement

**Paver Kare<sup>®</sup> Deep Sheen WB** – The perfect treatment for concrete, clay or stone pavers, inside or out. This durable, water-borne protective treatment weather- and stain-proofs new or newly cleaned pavers, giving them a premium, vibrant gloss and shine. This water-borne treatment complies with all known AIM VOC regulations nationwide. Deep Sheen WB's glossy finish guards pavers against etching and staining from acidic and alkaline contaminants, including food, drinks, cleaning chemicals and more. Fast-drying, non-blushing and non-yellowing, Deep Sheen WB is ideal for paver installations of any size – new or old.

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### **Sample Preparation** – Color and Sheen Enhancement

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

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### **Test Method** – Color and Sheen Enhancement

Paver Kare<sup>®</sup> Deep Sheen WB was applied by brush in accordance with the application instructions in the current PROSOCO, Inc. Product Data Sheet.

**Test Results – Color and Sheen Enhancement**

"Artillo/Charcoal"		
Treatment	Color Enhancement	Sheen Enhancement
Paver Kare® Deep Sheen WB	3	3
"Artillo/Artillo Café/Luna"		
Treatment	Color Enhancement	Sheen Enhancement
Paver Kare® Deep Sheen WB	3	3
"Artillo/Tuscan Mustard"		
Treatment	Color Enhancement	Sheen Enhancement
Paver Kare® Deep Sheen WB	3	3
"Roman Tile/Early Gray/Limestone"		
Treatment	Color Enhancement	Sheen Enhancement
Paver Kare® Deep Sheen WB	3	3
"Roman Tile/Early Gray/Travertine"		
Treatment	Color Enhancement	Sheen Enhancement
Paver Kare® Deep Sheen WB	3	3
"Roman Tile/Hacienda/Limestone"		
Treatment	Color Enhancement	Sheen Enhancement
Paver Kare® Deep Sheen WB	3	3
"Roman Tile/Natural Gray"		
Treatment	Color Enhancement	Sheen Enhancement
Paver Kare® Deep Sheen WB	3	3

Scale: 0 - No Enhancement; Dull  
 1 - Slight Enhancement  
 2 - Moderate Enhancement  
 3 - Significant Enhancement

**Photographs – Color and Sheen Enhancement**

"Roman Tile/Hacienda/Limestone" Precast Concrete Paver; Treatment Applied



Paver Kare® Deep Sheen WB	Untreated Control
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**Recommendations – Color and Sheen Enhancement**

Recommendations for color enhancement for the precast concrete pavers submitted by Arto Brick – California Pavers, Gardena, 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
All Submitted Precast Concrete Pavers	Paver Kare® Deep Sheen WB	Paver Kare® Deep Sheen 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.

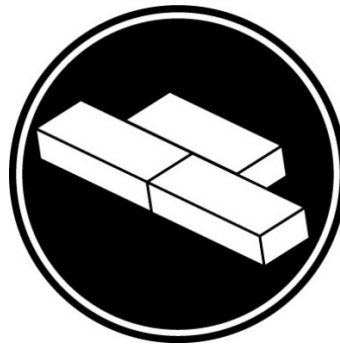


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***PALLET TAG PROGRAM***  
*Laboratory Report*

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*Project No. 0605-21 PTP*

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SINCE 1939

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