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ATTACHMENTS

Technical Services TECH Note RILEM Test Method No. II.4

Product Data literature for all products evaluated





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FOR: Allen Cunningham, Pacific Clay Products, Inc.

cc: Paul Tessier Steve Dean

SUBJECT: Pacific Clay Products, Inc. - Pavers

Lake Elsinore, CA

DATE: February 28, 2003

PROJECT: 0210-03 PTP

SAMPLES SUBMITTED: (21) types of clay pavers

Sample	Color	Size
(6) "Sunset Red" Velour	Dark red, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Sunset Red" Dieskin	Dark red with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Red Flashed" Velour	Red, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Red Flashed" Dieskin	Red with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Medium Iron Spot" Velour	Dark brown, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Medium Iron Spot" Dieskin	Dark brown with aggregate	7 ½" x 3 ½" x 1 ½"
(8) "Burgundy" Dieskin	Burgundy with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Light Iron Spot" Velour	Red, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Light Iron Spot" Dieskin	Red with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Dark Iron Spot" Velour	Dark gray, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Dark Iron Spot" Dieskin	Dark gray with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Royal Saltillo" Velour	Light orange, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Royal Saltillo" Dieskin	Light orange with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Rose Tan" Velour	Light red, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Rose Tan" Dieskin	Light red with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Pacific Rose" Velour	Light red, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Pacific Rose" Dieskin	Light red with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Stirling Grey" Velour	Gray, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Stirling Grey" Dieskin	Gray with aggregate	7 ½" x 3 ½" x 1 ½"
(6) "Brown Flashed" Velour	Dark brown, smooth	8 ¾" x 3 ½" x 2 ½"
(8) "Brown Flashed" Dieskin	Dark brown with aggregate	7 ½" x 3 ½" x 1 ½"

Submitted by: Paul Tessier





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PURPOSE OF TESTING:

Twenty-one different types of clay pavers were submitted to PROSOCO, Inc.'s Testing Laboratory with a request to determine if application of the products evaluated will produce any surface alteration during new construction cleaning operations. Additionally, the effectiveness of water repellents suitable for clay masonry will be evaluated, as well as the effectiveness of products for color enhancement and stain resistance.

A. New Construction Cleaning – Sure Klean[®] Vana Trol[®] and Enviro Klean[®] Safety Klean were evaluated for removal of laboratory applied sanded and unsanded grout.

To simulate new construction soiling, all pavers 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 paver and filled with either a wet mixture of sanded or unsanded grout. The wet grout-filled cylinder was allowed to remain in contact with the paver for 10 minutes before removal.

Soiled pavers were allowed to dry before test cleaning.

Heavy deposits of grout were removed with dry scraping after 24 hours. Prepared cleaning solutions were then evaluated for their effectiveness in removing residual sanded and unsanded grouts after 1, 3 and 7 days of curing.

B. Limiting Surface Alterations – Sure Klean® Vana Trol® and Enviro Klean® Safety Klean were tested to determine if a cleaning program implemented to remove excess grout and related new construction soiling would otherwise alter the appearance of cleaned surfaces. Surface Alteration was evaluated visually based upon perceived discoloration or erosion/etching of the masonry unit.

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

<u>Substrate Deterioration</u> is the visual examination of the paver 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 paver.

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

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

- **C.** Water Repellent Evaluation Sure Klean® Weather Seal Siloxane WB Concentrate and Consolideck® Saltguard® WB were evaluated on the submitted samples for their ability to provide water repellency.
- **D. Color Enhancement -** Stand Off[®] Gloss 'N Guard WB was evaluated on its ability to provide color enhancement to the submitted samples.
- **E. Stain Repellency** Stand Off[®] SLX100 Water & Oil Repellent and Stand Off[®] Stain Barrier were evaluated for their ability to resist staining agents applied to the submitted samples. Enviro Klean[®] 2010 All Surface Cleaner diluted with 10 parts fresh water was evaluated for its ability to remove the staining agents from the treated samples.





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PRODUCTS EVALUATED FOR CLEANING AND LIMITING SURFACE ALTERATIONS

SAMPLE	TREATMENT	DILUTION
All authoritted alove payers	Sure Klean [®] Vana Trol [®]	1:8
All submitted clay pavers	Enviro Klean [®] Safety Klean	1:3

WATER REPELLENT PRODUCTS EVALUATED

SAMPLE	TREATMENT	DILUTION
All aubmitted alov povers	Sure Klean [®] Weather Seal Siloxane WB Concentrate	1:9
All submitted clay pavers	Consolideck [®] Saltguard [®] WB	Concentrate

COLOR ENHANCEMENT PRODUCTS EVALUATED

SAMPLE	TREATMENT	DILUTION
All submitted clay pavers	Stand Off [®] Gloss 'N Guard WB	Concentrate

STAIN REPELLENT PRODUCTS EVALUATED

Sample	TREATMENT	Dilution	
All submitted clay pavers	Stand Off [®] Stain Barrier	Concentrate	
7 iii dadiiiiiidd didy pavoid	Stand Off® SLX100 Water & Oil Repellent	Corrocalitate	

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





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SECTION A - NEW CONSTRUCTION CLEANING

DESCRIPTION OF PRODUCTS EVALUATED - New Construction Cleaning

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove sanded and unsanded grout from the submitted clay pavers.

Sanded and unsanded grout were prepared in compliance with the manufacturers instructions, applied to the paver surface and allowed to cure for 1, 3 and 7 days. Grout removal was accomplished using chemical assistance and a high-pressure water rinse with pressure rinsing equipment. The removal of sanded and unsanded grout was visually evaluated after 1, 3 and 7 days of curing.

Sure Klean® Vana Trol® - A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, manganese and other metallic stains. Use on: gray, brown, white, and most light-colored brick; natural stone; cast stone. Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 4-10 parts water. Apply by brush or low-pressure spray.

Enviro Klean® Safety Klean – An effective, safe alternative to acidic compounds for cleaning brick, tile, and concrete surfaces. Rids new masonry construction of excess mortar, dirt, and other common job site soiling. Ideal for projects where traditional acidic cleaners are not allowed. Contains no hydrochloric acid and is safe for use on and around metal surfaces. Liquid concentrate for dilution with 1-3 parts water. Apply by brush or low-pressure spray.

TEST METHOD – New Construction Cleaning

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

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

Vana Trol®		. 5 minutes
Safety Klea	an	3 minutes

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





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Test Results - New Construction Cleaning

% Removal

"Sunset Red" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:8	Sanded	100%	100%	100%
		Unsanded	100%	100%	100%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	90%	100%

"Sunset Red" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:8	Sanded	100%	90%	100%
		Unsanded	100%	100%	90%
Enviro Klean® Safety	1:3	Sanded	100%	90%	100%
Klean		Unsanded	100%	90%	100%

"Red Flashed" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:8	Sanded	100%	100%	100%
		Unsanded	100%	100%	100%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean		Unsanded	100%	90%	100%

"Red Flashed" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sure Riearr Varia 1101	1.0	Unsanded	100%	100% 100% 100%	100%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	90%	100%

"Medium Iron Spot" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sule Meall Valla 1101	1.0	Unsanded	100%		100%
Enviro Klean® Safety	1.0	Sanded	100%	100%	100%
Klean	1:3	Unsanded	100%	100%	100%

"Medium Iron Spot" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:8	Sanded	100%	100%	100%
Suite Meall Valla 1101	1.0	Unsanded	100%	100% 100% 100%	100%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	100%	100%





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Test Results - New Construction Cleaning (cont.)

% Removal

"Burgundy" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:8	Sanded	100%	100%	100%
Sure Riearr Varia 1101	1.0	Unsanded	100%	90%	100%
Enviro Klean [®] Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	90%	100%

"Light Iron Spot" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sure Riedii Valla 1101	1.0	Unsanded	100%	100%	100%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	100%	100%

"Light Iron Spot" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	90%	100%
Sure Rieari Varia 1101	1.0	Unsanded	100%	90% 100% 100%	100%
Enviro Klean® Safety	1.0	Sanded	100%	100%	100%
Klean	1:3	Unsanded	100%	90%	100%

"Dark Iron Spot" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sure Rieari Varia 1101	1.0	Unsanded	100%	100% 100% 100%	100%
Enviro Klean® Safety	1.0	Sanded	100%	100%	100%
Klean	1:3	Unsanded	100%	100%	100%

"Dark Iron Spot" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sule Riedii Valia 1101	1.0	Unsanded	100%		100%
Enviro Klean® Safety	1.0	Sanded	100%	100%	100%
Klean	1:3	Unsanded	100%	100%	100%

"Royal Saltillo" Velour

		•			
Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:8	Sanded	100%	100%	100%
Suite Meall Valla 1101	1.0	Unsanded	100%	100% 100% 100%	90%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	90%	100%





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Test Results - New Construction Cleaning (cont.)

% Removal

"Royal Saltillo" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:8	Sanded	100%	100%	100%
Sure Riearr Varia 1101	1.0	Unsanded	100%	100% 100% 100%	100%
Enviro Klean® Safety	1.0	Sanded	100%	100%	100%
Klean	1:3	Unsanded	100%	100%	100%

"Rose Tan" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sure Riearr Varia 1101	1.0	Unsanded	100%	100% 100% 100%	100%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	100%	100%

"Rose Tan" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:8	Sanded	100%	100%	100%
Sure Riearr Varia 1101	1.0	Unsanded	100%	<u> </u>	100%
Enviro Klean [®] Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	100%	100%

"Pacific Rose" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sure Riearr Varia 1101		Unsanded	90%	90%	100%
Enviro Klean [®] Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	90%	100%

"Pacific Rose" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sule Meall Valla 1101		Unsanded	90%	100%	100%
Enviro Klean® Safety	1.0	Sanded	100%	100%	100%
Klean	1:3	Unsanded	90%	90%	100%

"Stirling Grey" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean [®] Vana Troi [®]	1:8	Sanded	100%	100%	100%
Sule Meall Valla 1101	1.0	Unsanded	100%	100%	100%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	90%	100%	100%





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Test Results - New Construction Cleaning (cont.)

% Removal

"Stirling Grey" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sure Riearr Varia 1101		Unsanded	100%	100%	100%
Enviro Klean® Safety	4.0	Sanded	100%	100%	100%
Klean	1:3	Unsanded	100%	100%	100%

"Brown Flashed" Velour

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	100%	100%
Sure Riearr Varia 1101		Unsanded	100%	90%	100%
Enviro Klean [®] Safety	4.0	Sanded	100%	100%	100%
Klean	1:3	Unsanded	100%	100%	100%

"Brown Flashed" Dieskin

Product	Dilution	Type of Grout	1 day	3 day	7 day
Sure Klean® Vana Trol®	1:8	Sanded	100%	90%	100%
Jule Rieali Valla 1101		Unsanded	100%	100%	100%
Enviro Klean® Safety	1:3	Sanded	100%	100%	100%
Klean	1.3	Unsanded	100%	90%	100%





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CONCLUSIONS – New Construction Cleaning

Based on the test results, Sure Klean® Vana Trol and Enviro Klean® Safety Klean in the dilutions tested performed extremely well in removing excess sanded and unsanded grout on the submitted clay pavers. Both products performed well in removing the grout soiling even after allowing the grout to remain on the surface of the paver for 7 days under ideal curing conditions.

It is recommended that the selected cleaners always be used in the lowest possible concentration. To facilitate easier removal of excess grout and construction dirt while minimizing any potential surface alterations to the decorative finish, clean within 7 days of construction.

RECOMMENDED PRODUCTS AND DILUTIONS - NEW CONSTRUCTION CLEANING

Recommendations for cleaning each type of clay paver submitted by Pacific Clay Products, Inc., Lake Elsinore, CA are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while limiting surface alterations.

Paver Type	New Construction Cleaning (Sanded or Unsanded Grout, 7 Days)
All submitted pavers	Sure Klean [®] Vana Trol [®] (1:8) OR Enviro Klean [®] Safety Klean (1:3)

Excessive pressure and water volume may combine to damage or remove decorative finishes. To facilitate easier removal of excess grout and construction dirt while minimizing any potential surface alterations to the decorative finish, clean within 7 days of construction. Rinsing with high-pressure spray (400-800 psi) is recommended.

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.

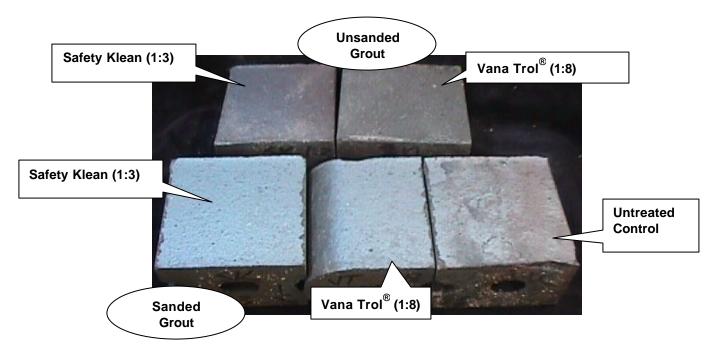




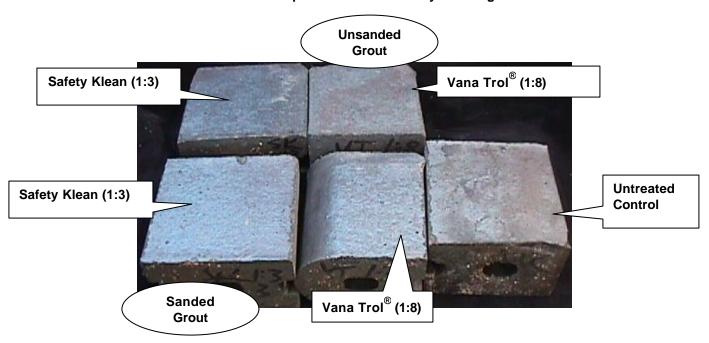
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PHOTOGRAPHS - Cleaning

"Dark Iron Spot" Velour after 1 day cleaning



"Dark Iron Spot" Velour after 3 day cleaning



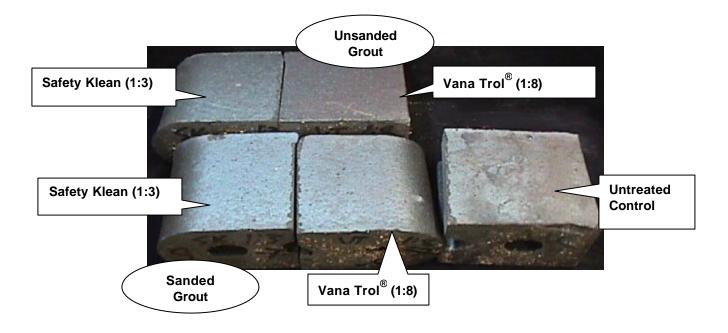




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PHOTOGRAPHS – Cleaning

"Dark Iron Spot" Velour after 7 day cleaning







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SECTION B - LIMITING SURFACE ALTERATIONS

DESCRIPTION OF PRODUCTS EVALUATED – Limiting Surface Alterations

Sure Klean® Vana Trol® - A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, manganese and other metallic stains. Designed for use on gray, brown, white and most light-colored brick, natural stone and cast stone. Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 4-10 parts water. Apply by brush or low-pressure spray.

Enviro Klean® Safety Klean – An effective, safe alternative to acidic compounds for cleaning brick, tile, and concrete surfaces. Rids new masonry construction of excess mortar, dirt, and other common job site soiling. Ideal for projects where traditional acidic cleaners are not allowed. Contains no hydrochloric acid and is safe for use on and around metal surfaces. Liquid concentrate for dilution with 1-3 parts water. Apply by brush or low-pressure spray.

TEST METHOD – Limiting Surface Alterations:

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

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

Vana Trol [®] 5 m	inutes
Safety Klean	inutes

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





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TEST RESULTS – Limiting Surface Alterations

Substrate: Clay paver	Pigment Co	olor: "Sunset Red" \	/elour			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean® Vana Trol®	1:8	0	0	0	0	
Enviro Klean® Safety Klean	1:3	0	0	0	0	
Substrate: Clay paver	Pigment Co	l plor: "Sunset Red" [Dieskin	<u> </u>	<u> </u>	
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean® Vana Trol®	1:8	0	0	0	0	
Enviro Klean® Safety Klean	1:3	0	0	0	0	
Substrate: Clay paver	Pigment Co	lor: "Red Flashed"	Velour	<u> </u>		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0	
Enviro Klean® Safety Klean	1:3	0	0	0	0	
Substrate: Clay paver	Pigment Co	lor: "Red Flashed"	Dieskin			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0	
Enviro Klean® Safety Klean	1:3	0	0	0	0	
Substrate: Clay paver	Pigment Co	l plor: "Medium Iron S	Spot" Velour	<u> </u>		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0	
Enviro Klean® Safety Klean	1:3	0	0	0	0	
Substrate: Clay paver	Pigment Color: "Medium Iron Spot" Dieskin					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean® Vana Trol®	1:8	0	0	0	0	
Enviro Klean® Safety Klean	1:3	0	0	0	0	

Scale used for reporting results of all categories

0 - No change

3 - change - heavy

1 - change - slight

4 - change - excessive

2 - change - moderate





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TEST RESULTS – Limiting Surface Alterations

Substrate: Clay paver	Pigment Co	olor: "Burgundy" Die	eskin		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	olor: "Light Iron Spo	t" Velour		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	l olor: "Light Iron Spo	t" Dieskin		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	l olor: "Dark Iron Spot	t" Velour		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	l blor: "Dark Iron Spo	t" Dieskin		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Vana Trol®	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	lor: "Royal Saltillo"	Velour		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Vana Trol®	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0

Scale used for reporting results of all categories

0 - No change

3 - change - heavy

1 - change - slight

4 - change - excessive

2 - change - moderate





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TEST RESULTS – Limiting Surface Alterations

Substrate: Clay paver	Pigment Co	olor: "Royal Saltillo"	Dieskin		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Vana Trol®	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	lor: "Rose Tan" Vel	our		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	lor: "Rose Tan" Die	eskin		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Vana Trol®	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	lor: "Pacific Rose"	Velour		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Co	lor: "Pacific Rose"	Dieskin		
Product Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Vana Trol®	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Color: "Stirling Grey" Velour				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® Vana Trol®	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0

Scale used for reporting results of all categories

0 - No change

3 - change - heavy

1 - change - slight

4 - change - excessive

2 - change - moderate





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TEST RESULTS – Limiting Surface Alterations

Substrate: Clay paver	Pigment Color: "Stirling Grey" Dieskin					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0	
Enviro Klean [®] Safety Klean	1:3	0	0	0	0	
Substrate: Clay paver	Pigment Color: "Brown Flashed" Velour					
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0	
Enviro Klean [®] Safety Klean	1:3	0	0	0	0	
Substrate: Clay paver	Pigment Co	olor: "Brown Flashe	d" Dieskin			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0	
Enviro Klean [®] Safety Klean	1:3	0	0	0	0	

Scale used for reporting results of all categories

0 - No change

3 - change - heavy

1 - change - slight

4 - change - excessive

2 - change - moderate





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CONCLUSIONS – Limiting Surface Alterations

Test results show that none of the products tested caused any surface alterations on any of the types of submitted clay pavers. It is recommended that the selected cleaners always be used in the lowest possible concentration. To facilitate easier removal of excess grout and construction dirt while minimizing any potential surface alterations to the decorative finish, clean within 7 days of construction.

RECOMMENDED PRODUCTS AND DILUTIONS - LIMITING SURFACE ALTERATIONS

Product recommendations for limiting surface alterations for each type of clay paver submitted by Pacific Clay Products, Inc., Lake Elsinore, CA are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of grout while limiting surface alterations.

Paver Type	Limiting Surface Alterations
All submitted pavers	Sure Klean [®] Vana Trol [®] (1:8) OR Enviro Klean [®] Safety Klean (1:3)

Excessive pressure and water volume may combine to damage or remove decorative finishes. To facilitate easier removal of excess grout and construction dirt while minimizing any potential surface alterations to the decorative finish, clean within 7 days of construction. Rinsing with high-pressure spray (400-800 psi) is recommended.

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.





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SECTION C - PROTECTIVE WATER REPELLENTS:

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

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

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

DESCRIPTIONS OF PRODUCTS EVALUATED - Protective Water Repellents:

Sure Klean® Weather Seal Siloxane WB Concentrate - A self-emulsifying water repellent concentrate designed for dilution with fresh water at the job site. This solvent-free blend of silanes and oligomeric alkoxysiloxanes mixes easily with water to produce a penetrating water repellent which is ideal for application to either dense or porous masonry surfaces.

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. Protects horizontal and vertical surfaces from moisture intrusion and chemical attack of chloride salts.

SAMPLE PREPARATION - Protective Water Repellents:

The submitted pavers were cut, oven dried and allowed to reabsorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of two 10-second immersions with a 20-second absorption period between immersions to simulate a wet-on-wet application. All treatments were allowed to cure for at least 14 days prior to testing.





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TEST METHODS - Protective Water Repellents:

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

The water absorption tube test simulating wind driven and wind blown rain conditions was also performed. Tests were run with 5.0-milliliter head pressures. Filled to 5 milliliters, a water absorption tube produces a 98 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 <u>AA</u> Above Average water repellent performance would require loss of no more than 5 ml X 20% = 1 ml.

A rating of **A** Average water repellent performance would require loss of no more than 5 ml X 50% = 2.5ml.

A rating of BA *Below Average* water repellent performance would be reported for treatments which result in a loss of more than 50% X 5ml = 2.5ml+





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

AA = Above Average

A = Average

BA = Below Average

"Sunset Red" Velour	Results in mL loss	Ranking
Untreated Control	2.5	-
Weather Seal Siloxane WB (1:9)	0.5	AA
Saltguard [®] WB	0.1	AA
"Sunset Red" Dieskin	Results in mL loss	Ranking
Untreated Control	2.9	-
Weather Seal Siloxane WB (1:9)	0.8	A
Saltguard [®] WB	0.1	<u>AA</u>
"Red Flashed" Velour	Results in mL loss	Ranking
Untreated Control	0.8	
Weather Seal Siloxane WB (1:9)	0.2	A
Saltguard [®] WB	0.1	<u>AA</u>
"Red Flashed" Dieskin	Results in mL loss	Ranking
Untreated Control	3.0	
Weather Seal Siloxane WB (1:9)	0.5	<u>AA</u>
Saltguard [®] WB	0.0	<u>AA</u>
"Medium Iron Spot" Velour	Results in mL loss	Ranking
Untreated Control	1.0	
Weather Seal Siloxane WB (1:9)	0.3	Α
Saltguard [®] WB	0.1	<u>AA</u>
"Medium Iron Spot" Dieskin	Results in mL loss	Ranking
Untreated Control	0.8	
Weather Seal Siloxane WB (1:9)	0.1	AA
Saltguard [®] WB	0.1	AA
"Burgundy" Dieskin	Results in mL loss	Ranking
Untreated Control	0.5	
Weather Seal Siloxane WB (1:9)	0.1	AA
Saltguard [®] WB	0.1	AA





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

AA = Above Average

A = Average

BA = Below Average

Results in mL loss	Ranking
1.6	
0.1	AA
0.1	AA
Results in mL loss	Ranking
4.5	-
0.0	AA
0.3	AA
Results in mL loss	Ranking
0.6	
0.2	A
0.0	AA
Results in mL loss	Ranking
0.9	
0.4	Α
0.1	<u>AA</u>
Results in mL loss	Ranking
1.5	
0.2	AA
0.1	<u>AA</u>
Results in mL loss	Ranking
2.0	-
0.4	AA
0.7	Α
Results in mL loss	Ranking
3.5	
0.6	<u>AA</u>
	1.6 0.1 0.1 Results in mL loss 4.5 0.0 0.3 Results in mL loss 0.6 0.2 0.0 0.0 Results in mL loss 0.9 0.4 0.1 Results in mL loss 1.5 0.2 0.1 Results in mL loss 2.0 0.4 0.7 Results in mL loss





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

AA = Above Average

A = Average

BA = Below Average

"Rose Tan" Dieskin	Results in mL loss	Ranking
Untreated Control	4.5	
Weather Seal Siloxane WB (1:9)	0.1	<u>AA</u>
Saltguard® WB	0.2	<u>AA</u>
"Pacific Rose" Velour	Results in mL loss	Ranking
Untreated Control	0.3	
Weather Seal Siloxane WB (1:9)	0.1	Α
Saltguard [®] WB	0.0	<u>AA</u>
"Pacific Rose" Dieskin	Results in mL loss	Ranking
Untreated Control	3.1	
Weather Seal Siloxane WB (1:9)	0.2	<u>AA</u>
Saltguard [®] WB	0.3	<u>AA</u>
"Stirling Grey" Velour	Results in mL loss	Ranking
Untreated Control	1.0	
Weather Seal Siloxane WB (1:9)	0.4	Α
Saltguard [®] WB	0.1	<u>AA</u>
"Stirling Grey" Dieskin	Results in mL loss	Ranking
Untreated Control	2.0	
Weather Seal Siloxane WB (1:9)	0.1	<u>AA</u>
Saltguard [®] WB	0.4	<u>AA</u>
"Brown Flashed" Velour	Results in mL loss	Ranking
Untreated Control	0.3	-
Weather Seal Siloxane WB (1:9)	0.1	Α
Saltguard [®] WB	0.0	<u>AA</u>
"Brown Flashed" Dieskin	Results in mL loss	Ranking
Untreated Control Weather Seal Siloxane WB (1:9)	4.0 0.0	
Saltguard® WB	0.0	<u>AA</u> <u>AA</u>
Janguaru WD	0.0	<u>~~</u>





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CONCLUSIONS - Protective Water Repellents:

Test results indicate that both Sure Klean[®] Weather Seal Siloxane WB Concentrate diluted with nine parts fresh water and Consolideck[®] Saltguard[®] WB exhibited adequate water repellency on all submitted clay pavers.

RECOMMENDATIONS - PROTECTIVE WATER REPELLENTS

Recommendations for water repellent treatments for each type of clay paver submitted by Pacific Clay Products, Inc., Lake Elsinore, CA are provided in the chart below. Recommendations are based on the treatments that proved most effective by results and can provide water repellency on all types submitted if possible.

Paver Type	Water Repellent	
	Sure Klean [®] Weather Seal Siloxane WB Concentrate (1:9)	
All submitted clay pavers	OR	
	Consolideck [®] Saltguard [®] 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 water repellent product and procedures for a particular project. See product literature for additional application and product information.





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SECTION D – COLOR ENHANCEMENT:

DESCRIPTION OF PRODUCTS EVALUATED - Color Enhancement

Stand Off® Gloss 'N Guard WB - A highly durable polyurethane protective coating for tile, pavers, terrazzo and other polished and unpolished masonry. Dries to a high-gloss finish, which enhances the natural beauty of horizontal and vertical treated surfaces. Creates a lasting protective shield of unparalleled beauty and durability.

SAMPLE PREPARATION – Color Enhancement:

The submitted pavers were allowed to absorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of a wet-on-wet application to the surface of the pavers. Treatment was allowed to dry for at least 24 hours prior to evaluating.

TEST METHODS - Color Enhancement:

The submitted pavers were visually evaluated for color enhancement of the treated surface.

TEST RESULTS - Color Enhancement:

Stand Off® Gloss 'N Guard WB enhanced all of the submitted pavers, bringing out the natural beauty of the pavers while adding sheen.





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PHOTOGRAPHS - Color Enhancement:

Example of pavers treated with Stand Off® Gloss 'N Guard WB



CONCLUSIONS - Color Enhancement:

Test results indicate that Stand Off® Gloss 'N Guard WB provided excellent color enhancement to all types of submitted clay pavers.

RECOMMENDATIONS - COLOR ENHANCEMENT

Recommendations for color enhancement for each type of clay paver submitted by Pacific Clay Products, Inc., Lake Elsinore, CA are provided in the chart below. Recommendations are based on the treatment that proved most effective by providing good color enhancement on all types submitted.

Paver Type	Color Enhancement	
All submitted clay pavers	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 water repellent product and procedures for a particular project. See product literature for additional application and product information.





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SECTION E – STAIN RESISTANCE

DESCRIPTION OF PRODUCTS EVALUATED

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

Products Evaluated for Stain Protection:

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

Stand Off® SLX 100 Water & Oil Repellent - A modified, "neat" silane system that offers invisible protection and low volatility. SLX 100 protects concrete and masonry surfaces against water and waterborne contaminants. In addition to water repellency SLX 100 offers stain resistance and chloride screen.

Staining Products Evaluated:

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





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SAMPLE PREPARATION - Stain Resistance

Samples were cleaned with Enviro Klean[®] 2010 All Surface Cleaner diluted with 10 parts water, allowed to dry and absorb atmospheric moisture for 24 hours prior to treatment. The method of application for protective treatments consisted of a wet-on-wet saturating brush application. Samples were allowed to cure for at least 1 week prior to testing.

TEST METHOD - Stain Resistance

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 blob and not evaluated for their beading properties.

Rating System (1-5)

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



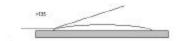
2. Wetting contained to the contact area (slight darkening); angle is less than 90°



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



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



5. Wetting beyond the contact area (darkening); angle is flat.







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TEST METHODS: Continued

Stain Resistance

The soiling agents were allowed to dwell on the treated and untreated substrates for times of 24 hours, 4 hours, 1 hour, and 10 minutes. The test areas were then cleaned with Enviro Klean® 2010 All Surface Cleaner diluted 1 part concentrate to 10 parts fresh water and scrubbed under a stream of running water from a faucet. Samples were allowed to dry for 24 hours. Evaluation consisted of a visual examination of the tested areas to determine the percentage of staining removal.

TEST RESULTS – Surface Beading

"Sunset Red" Velour			
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
		"Sunset Red" Dieskin	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2





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"Red Flashed" Velour			
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
	"	Red Flashed" Dieskin	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
	"Ме	edium Iron Spot" Velour	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2





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"Medium Iron Spot" Dieskin			
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
		"Burgundy" Dieskin	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
	c.	Light Iron Spot" Velour	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2





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"Light Iron Spot" Dieskin			
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
	66	Dark Iron Spot" Velour	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
	"[Dark Iron Spot" Dieskin	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2





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"Royal Saltillo" Velour			
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
		"Royal Saltillo" Dieskin	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2
		"Rose Tan" Velour	
	Untreated Control	Stain Barrier	SLX 100
Coca Cola	4	2	2
Red Wine	4	3	2
Balsamic Vinegar	4	3	2
Soy Sauce	4	2	2
Olive Oil	5	2	2
Wesson Oil	5	2	2
Hot Coffee	4	3	2





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"Rose Tan" Dieskin					
	Untreated Control	Stain Barrier	SLX 100		
Coca Cola	4	2	2		
Red Wine	4	3	2		
Balsamic Vinegar	4	3	2		
Soy Sauce	4	2	2		
Olive Oil	5	2	2		
Wesson Oil	5	2	2		
Hot Coffee	4	3	2		
"Pacific Rose" Velour					
	Untreated Control	Stain Barrier	SLX 100		
Coca Cola	4	2	2		
Red Wine	4	3	2		
Balsamic Vinegar	4	3	2		
Soy Sauce	4	2	2		
Olive Oil	5	2	2		
Wesson Oil	5	2	2		
Hot Coffee	4	3	2		
"Pacific Rose" Dieskin					
	Untreated Control	Stain Barrier	SLX 100		
Coca Cola	4	2	2		
Red Wine	4	3	2		
Balsamic Vinegar	4	3	2		
Soy Sauce	4	2	2		
Olive Oil	5	2	2		
Wesson Oil	5	2	2		
Hot Coffee	4	3	2		





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"Stirling Grey" Velour					
	Untreated Control	Stain Barrier	SLX 100		
Coca Cola	4	2	2		
Red Wine	4	3	2		
Balsamic Vinegar	4	3	2		
Soy Sauce	4	2	2		
Olive Oil	5	2	2		
Wesson Oil	5	2	2		
Hot Coffee	4	3	2		
"Stirling Grey" Dieskin					
	Untreated Control	Stain Barrier	SLX 100		
Coca Cola	4	2	2		
Red Wine	4	3	2		
Balsamic Vinegar	4	3	2		
Soy Sauce	4	2	2		
Olive Oil	5	2	2		
Wesson Oil	5	2	2		
Hot Coffee	4	3	2		
"Brown Flashed" Velour					
	Untreated Control	Stain Barrier	SLX 100		
Coca Cola	4	2	2		
Red Wine	4	3	2		
Balsamic Vinegar	4	3	2		
Soy Sauce	4	2	2		
Olive Oil	5	2	2		
Wesson Oil	5	2	2		
Hot Coffee	4	3	2		





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TEST RESULTS – Surface Beading (cont.)

	"Brown Flashed" Dieskin											
	Untreated Control	Stain Barrier	SLX 100									
Coca Cola	4	2	2									
Red Wine	4	3	2									
Balsamic Vinegar	4	3	2									
Soy Sauce	4	2	2									
Olive Oil	5	2	2									
Wesson Oil	5	2	2									
Hot Coffee	4	3	2									

TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

				"Sunset Red" Velo	ur			
Untreated C	ontrol							
Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
100%	100%	75%	100%	90%	100%	<1%	<1%	50%
100%	100%	100%	100%	100%	100%	<1%	<1%	60%
100%	100%	100%	100%	100%	100%	<1%	<1%	70%
100%	100%	100%	100%	100%	100%	<1%	<1%	80%
Stand Off® S	tain Barrie	r						
Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
100%	100%	100%	100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%	100%	100%	100%
Stand Off® S	LX100 Wate	er & Oil Rep	ellent					
Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
100%	100%	100%	100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%	100%	100%	100%
100%	100%	100%	100%	100%	100%	100%	100%	100%
	Coca Cola 100% 100% 100% 100% Stand Off® S Coca Cola 100% 100% 100% Stand Off® S Coca Cola 100% 100% 100% 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100% Stand Off® Stain Barrie Coca Cola Ketchup 100% 100% 100% 100% 100% 100% Stand Off® SLX100 Wate Coca Cola Ketchup 100% 100% 100% 100% 100% 100% 100% 100%	Coca Cola Ketchup Mustard 100% 100% 75% 100% 100% 100% 100% 100% 100% 100% 100% 100% Stand Off® Stain Barrier Coca Cola Ketchup Mustard 100% 100% 100% 100% 100% 100% 100% 100% 100% Stand Off® SLX100 Water & Oil Rep Coca Cola Ketchup Mustard 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%	Coca Cola Ketchup Mustard Red Wine 100% 100% 75% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% Stand Off® Stain Barrier Coca Cola Ketchup Mustard Red Wine 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% Stand Off® SLX100 Water & Oil Repellent Coca Cola Ketchup Mustard Red Wine 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%	Untreated Control Coca Cola Ketchup Mustard Red Wine Balsamic Vinegar	Coca Cola Ketchup Mustard Red Wine Balsamic Vinegar Soy Sauce 100% 100% 75% 100% 90% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% Stand Off® Stain Barrier Coca Cola Ketchup Mustard Red Wine Balsamic Vinegar Soy Sauce 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% Stand Off® SLX100 Water & Oil Repellent Coca Cola Ketchup Mustard Red Wine Balsamic Vinegar Soy Sauce 100% 100% 100% 100% 100% 100%<	Coca Cola Ketchup Mustard Red Wine Balsamic Vinegar Soy Sauce Olive Oil 100% 100% 75% 100% 90% 100% <1% 100% 100% 100% 100% 100% 100% <1% 100% 100% 100% 100% 100% <1% 100% 100% 100% 100% 100% <1% Stand Off® Stain Barrier Coca Cola Ketchup Mustard Red Wine Balsamic Vinegar Soy Sauce Olive Oil 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100% <th> Untreated Control </th>	Untreated Control





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

"Sunset Red" Dieskin

					"Sunset Red" Dies	Kiii			
	Untreated C	Control							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	SLX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
					"Red Flashed" Velo	our			
	Untreated C	Control							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	70%
	100%							\1 /0	1070
10 min.	10070	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S			100%	100%	100%	<1%		
				100% Red Wine	100% Balsamic Vinegar	100% Soy Sauce	<1% Olive Oil		
	Stand Off® S	Stain Barrie	*					<1%	80%
10 min.	Stand Off® S	Stain Barrie Ketchup	r Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	<1% Wesson Oil	80% Hot Coffee
10 min. 24 hr	Stand Off® S Coca Cola 100%	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	<1% Wesson Oil 100%	Hot Coffee
10 min. 24 hr 4 hour	Stand Off® S Coca Cola 100% 100%	Ketchup 100%	Mustard 100% 100%	Red Wine 100% 100%	Balsamic Vinegar 100% 100%	Soy Sauce 100% 100%	Olive Oil 100% 100%	<1% Wesson Oil 100% 100%	80% Hot Coffee 100% 100%
10 min. 24 hr 4 hour 1 hour	Stand Off® S Coca Cola 100% 100% 100%	Ketchup 100% 100% 100% 100%	Mustard 100% 100% 100% 100%	Red Wine 100% 100% 100% 100%	Balsamic Vinegar 100% 100% 100%	Soy Sauce 100% 100% 100%	Olive Oil 100% 100% 100%	<1% Wesson Oil 100% 100% 100%	80% Hot Coffee 100% 100%
10 min. 24 hr 4 hour 1 hour	Stand Off® S Coca Cola 100% 100% 100% 100%	Ketchup 100% 100% 100% 100%	Mustard 100% 100% 100% 100%	Red Wine 100% 100% 100% 100%	Balsamic Vinegar 100% 100% 100%	Soy Sauce 100% 100% 100% 100%	Olive Oil 100% 100% 100%	<1% Wesson Oil 100% 100% 100%	80% Hot Coffee 100% 100%
10 min. 24 hr 4 hour 1 hour	Stand Off® S Coca Cola 100% 100% 100% 100% Stand Off® S	Ketchup	Mustard 100% 100% 100% 100% er & Oil Rep	Red Wine 100% 100% 100% 100% ellent	Balsamic Vinegar 100% 100% 100% 100%	Soy Sauce 100% 100% 100%	Olive Oil 100% 100% 100% 100%	<1% Wesson Oil 100% 100% 100% 100%	80% Hot Coffee 100% 100% 100%
24 hr 4 hour 1 hour 10 min.	Stand Off® S Coca Cola 100% 100% 100% 100% Stand Off® S Coca Cola	Ketchup	Mustard 100% 100% 100% 100% er & Oil Rep Mustard	Red Wine 100% 100% 100% 100% Red Wine	Balsamic Vinegar 100% 100% 100% 100% Balsamic Vinegar	Soy Sauce	Olive Oil 100% 100% 100% Olive Oil	<1% Wesson Oil 100% 100% 100% Wesson Oil	80% Hot Coffee 100% 100% 100% Hot Coffee
10 min. 24 hr 4 hour 1 hour 10 min.	Stand Off® S Coca Cola 100% 100% 100% Stand Off® S Coca Cola 100%	Ketchup	Mustard 100% 100% 100% 100% er & Oil Rep Mustard 100%	Red Wine 100% 100% 100% 100% Red Wine 100%	Balsamic Vinegar	Soy Sauce	Olive Oil 100% 100% 100% 100% 100%	<1% Wesson Oil 100% 100% 100% Wesson Oil 100%	80% Hot Coffee 100% 100% 100% Hot Coffee 100%





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

					"Red Flashed" Dies	kin		70 Kemi	Jvai
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	tain Barrie	7						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
					Medium Iron Spot" V	elour elour			
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	90%	90%	90%	90%	90%	90%	50%	50%	90%
4 hour	90%	90%	90%	90%	90%	90%	50%	50%	90%
1 hour	90%	90%	90%	90%	90%	90%	50%	50%	90%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	tain Barrie	7						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	90%	90%	90%	90%	90%	90%	100%	100%	90%
4 hour	90%	90%	90%	90%	90%	100%	100%	100%	100%
1 hour	90%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr					1000/	4000/	100%	4000/	100%
Z-7 III	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour		100% 100%	100% 100%	100% 100%	100%	100%	100%	100%	100%
	100%								





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

				"	Medium Iron Spot" D	ieskin		% Kenii	Jvai
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
					"Burgundy" Diesk	in			
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	70%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S	tain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 6 0	4000/	4000/	4000/	4000/	4000/	4000/	4000/	4000/	1000/
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

					"Light Iron Spot" Ve	lour		, 0 1 101110	
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	SLX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	<u> </u>				"Light Iron Spot" Die	skin			
	Untreated C	Control							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	70%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S	Stain Barrie	ŗ						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	SLX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	1		4000/	100%	100%	100%	100%	100%	100%
	100%	100%	100%	10070	10070				
4 hour	100% 100%	100%	100%	100%	100%	100%	100%	100%	100%





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

					"Dark Iron Spot" Ve	lour		70 1101110	· ai
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	SLX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
		<u>'</u>		<u>'</u>	"Dark Iron Spot" Die	skin		<u>I</u>	•
	Untreated C	ontrol			·				
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	70%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	SLX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	+	1		4000/	1000/	4000/	4000/	4000/	100%
+ Hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100% 100%	100% 100%	100%	100%	100%	100%	100%	100%	100%





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

					"Royal Saltillo" Vel	our		70 Nemo	vai
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	<u> </u>				"Royal Saltillo" Die	skin			
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	70%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S	Stain Barrie	"						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

					"Rose Tan" Velo	ur		/o Kemo	vai
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	SLX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	<u> </u>	<u> </u>	<u> </u>		"Rose Tan" Diesk	kin	<u> </u>		<u> </u>
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	70%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	SLX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

					"Pacific Rose" Vel	our		, 0 1 101111	
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
					"Pacific Rose" Dies	kin			
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	70%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S	Stain Barrie	ŗ						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
							1		l
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour 1 hour		100% 100%	100% 100%	100% 100%	100% 100%	100% 100%	100% 100%	100% 100%	100% 100%





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

					"Stirling Grey" Vel	our		% Rem	Jvai
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
					"Stirling Grey" Dies	skin			
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	90%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	90%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	90%	100%	100%	100%	100%	100%	<1%	<1%	70%
10 min.	90%	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S	Stain Barrie	r						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	90%	100%	100%	100%	100%	90%	90%	90%	90%
4 hour	90%	100%	100%	100%	100%	90%	100%	100%	100%
1 hour	90%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	90%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
	1	4000/	4000/	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	10076	10070	.0070	10070	.0070
4 hour 1 hour	100% 100%	100%	100%	100%	100%	100%	100%	100%	100%





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TEST RESULTS - Stain Resistance

Cleaned with: Enviro Klean® 2010 All Surface Cleaner (1:10)

					"Brown Flashed" Ve	lour		% Remo	oval
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	50%	50%	100%
4 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
1 hour	100%	100%	100%	100%	100%	100%	50%	50%	100%
10 min.	100%	100%	100%	100%	100%	100%	50%	50%	100%
	Stand Off® S	tain Barrie	•						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wat	er & Oil Rep	ellent					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	<u> </u>				"Brown Flashed" Die	skin			
	Untreated C	ontrol							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	75%	100%	90%	100%	<1%	<1%	50%
4 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	60%
1 hour	100%	100%	100%	100%	100%	100%	<1%	<1%	70%
10 min.	100%	100%	100%	100%	100%	100%	<1%	<1%	80%
	Stand Off® S	tain Barrie	•						
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Off® S	LX100 Wate	er & Oil Rep	ellent					
ī-	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	80%	80%	100%
4 hour	100%	100%	100%	100%	100%	100%	80%	80%	100%
4 hour 1 hour	100% 100%	100% 100%	100% 100%	100% 100%	100% 100%	100% 100%	90%	80% 90%	100% 100%





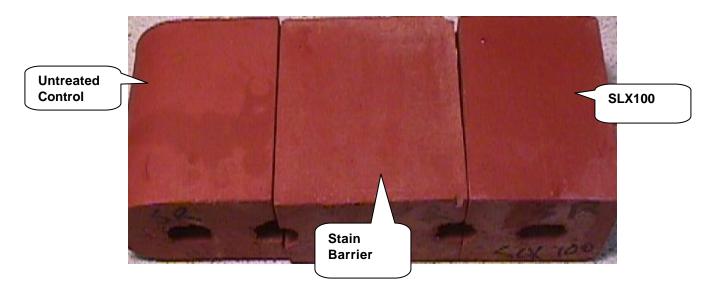
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PHOTOGRAPHS - Stain Resistance

Staining Agents on "Rose Tan"



Stain Removal on "Sunset Red"







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CONCLUSIONS - Stain Resistance

Based upon laboratory evaluations, Stand Off[®] SLX100 Water & Oil Repellent were both effective in repelling the staining agents from the submitted pavers. Stand Off[®] SLX100 Water & Oil Repellent displayed slightly better surface beading and slightly better stain resistance.

RECOMMENDATIONS - STAIN RESISTANCE

Recommendations for stain resistance treatment for each type of clay paver submitted by Pacific Clay Products, Inc., Lake Elsinore, CA are provided in the charts below. Recommendations are based on the treatments that proved most effective for providing stain repellency on all types submitted.

Paver Type	Stain Repellent	Maintenance Cleaner
All submitted clay pavers	Water Repellency and Stain Repellency: Stand Off® SLX100 Water & Oil Repellent Stain Repellency Only: Stand Off® Stain Barrier	Enviro Klean [®] 2010 All Surface Cleaner (1:10)

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 procedure for a particular project. See product literature for application and product information.

Courtney A. Williams
Project Testing Coordinator

autrey Williams

CAW/



Laboratory Report

Pallet Tag Program Evaluation

Pacific Clay Products, Inc. (Pavers) Lake Elsinore, CA

Project No. 0210-03 PTP

Prepared For:

Allen Cunningham
Pacific Clay Products, Inc.
14741 Lake St.
Lake Elsinore, CA

Prepared By:



PROSOCO, Inc. February 2003