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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: Jim Bergman cc: Paul Tessier

SUBJECT: Robinson Brick Company

Denver, CO

DATE: June 30, 2004

PROJECT: 0405-25 PTP

SAMPLES SUBMITTED: 24 types of clay brick, 4 types of clay pavers

Brick Type	Finish	Size
"Autumn Leaf Grain"	Wire-cut	
"Ball Park"	Sand	
"Barnwood"	Wire-cut w/ re-roll	
"Brimstone"	Engobe	7
"Buck Wheat"	Engobe/ Sand	
"Carbondale"	Engobe	
"Charleston"	Engobe Sand	
"Chestnut"	Sand	7
"Chicago Common"	Sand	
"Colonial Bark"	Bark - face	
"Colonial Matt"	Matt	
"Danbury"	Engobe/ Sand	
"Delaware"	Sand/ Engobe	
"Dover Grey"	Engobe	7 ½" x 3½" x
"Georgetown"	Sand/ Engobe	2¼ "
"Heritage Antique"	Slurry	
"Imperial 30 Grain"	Wire- cut	
"Monterey"	Engobe/ Sand	
"Old Chicago"	Sand/ Engobe	7
"Pearl"	Engobe	
"Quick Silver"	Engobe	
"Stony Brook"	Engobe	7
"Thunder Cloud"	Engobe	
"Water Lodge"	Sand	
"Sante Fe Paver"	Wire-cut	_
"Sedona Paver"	Wire-cut	_
"Kiowa Paver"	Wire-cut	_
"Ouray Paver"	Wire-cut	





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PURPOSE OF TESTING:

Twenty-four types of clay brick and four 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, graffiti repellents, stain repellents, and color enhancing treatments suitable for clay brick and clay paver masonry was evaluated.

A. New Construction Cleaning – Sure Klean[®] Vana Trol[®] or Sure Klean[®] 600 Detergent and Enviro Klean[®] Safety Klean were evaluated for removal of laboratory applied mortar or grout.

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 brick and filled with a wet mixture of Ash Grove[®] Type S cementitious mortar, or sanded or unsanded grout. The wet mortar- or grout-filled cylinder was allowed to remain in contact with the brick for 10 minutes before removal.

Soiled brick were allowed to dry before test cleaning.

Heavy deposits of mortar or grout were removed with dry scraping after 24 hours. Prepared cleaning solutions were then evaluated for their effectiveness in removing residual Ash Grove[®] Type S mortar after 3, 7, and 14 days of curing. Prepared cleaning solutions were evaluated for their effectiveness in removing residual grout after 3 and 7 days of curing.

B. Limiting Surface Alterations – Sure Klean[®] Vana Trol[®] or Sure Klean[®] 600 Detergent and Enviro Klean[®] Safety Klean were tested at various dilutions to determine if a cleaning program implemented to remove excess mortar and related new construction soiling would otherwise alter the appearance of cleaned surfaces. Surface Alteration was evaluated visually based upon perceived discoloration or erosion/etching of the masonry unit.

<u>Surface Finish Removal</u> 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.

<u>Substrate Deterioration</u> 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.

<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 PD and Sure Klean® Weather Seal Siloxane WB Concentrate (1:9), (1:14) or Consolideck® Saltguard WB, Stand Off® SLX100 Water & Oil Repellent, Stand Off® Impregnator, and Sure Klean® Paver Enhancer were evaluated on the submitted samples for their ability to provide water repellency.
- **D. Graffiti Repellency Evaluation** On the submitted clay brick, Sure Klean® Weather Seal Blok-Guard® & Graffiti Control was evaluated for its ability to provide graffiti control. Sure Klean® Fast Acting Stripper and Defacer Eraser® Graffiti Wipe were evaluated for their ability to remove graffiti.
- **E. Stain Repellency** On the submitted clay pavers, Stand Off® SLX100 Water & Oil Repellent, Stand Off® Stone, Tile, & Masonry Protector, and Stand Off® Impregnator were evaluated for their ability to repel stains.
- **F. Color Enhancement** Sure Klean® Paver Enhancer was evaluated for its ability to provide color enhancement to the submitted pavers.





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PRODUCTS EVALUATED FOR CLEANING AND LIMITING SURFACE ALTERATIONS

SAMPLE	TREATMENT	DILUTION
"Autumn Leaf Grain" "Barnwood" "Brimstone" "Buck Wheat" "Carbondale" "Charleston" "Chicago Common" "Dover Grey" "Georgetown" "Imperial 30 Grain" "Monterey"	Sure Klean [®] Vana Trol [®]	1:6, 1:8
"Old Chicago" "Pearl" "Quick Silver" "Stony Brook" "Thunder Cloud" "Sante Fe Paver" "Sedona Paver" "Kiowa Paver" "Ouray Paver"	Enviro Klean [®] Safety Klean	1:2, 1:3
"Ball Park" "Chestnut" "Colonial Bark" "Colonial Matt"	Sure Klean® 600 Detergent	1:6, 1:8
"Danbury" "Delaware" "Heritage Antique" Water Lodge"	Enviro Klean® Safety Klean	1:2, 1:3

WATER REPELLENT PRODUCTS EVALUATED

SAMPLE	TREATMENT	DILUTION
A.II	Sure Klean [®] Weather Seal Siloxane PD	Concentrate
All submitted clay brick	Sure Klean [®] Weather Seal Siloxane WB Concentrate	1:9, 1:14
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Concentrate
	Sure Klean® Paver Enhancer	Concentrate
All submitted clay	Consolideck® Saltguard WB	Concentrate
pavers	Stand Off® SLX100 Water & Oil Repellent	Concentrate
	Stand Off® Impregnator	Concentrate

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





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GRAFFITI CONTROL PRODUCTS EVALUATED

SAMPLE	TREATMENT	DILUTION
All submitted clay brick	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Concentrate

GRAFFITI REMOVAL PRODUCTS EVALUATED

SAMPLE	TREATMENT	DILUTION
All submitted clay	Sure Klean [®] Fast Acting Stripper	Concentrate
brick	Defacer Eraser® Graffiti Wipe	Concentrate

STAIN REPELLENT PRODUCTS EVALUATED

SAMPLE	TREATMENT	DILUTION
	Stand Off® SLX100 Water & Oil Repellent	Concentrate
All submitted clay pavers	Stand Off® Stone, Tile & Masonry Protector	Concentrate
	Stand Off® Impregnator	Concentrate

COLOR ENHANCEMENT PRODUCTS EVALUATED

SAMPLE	TREATMENT	DILUTION
All submitted clay pavers	Sure Klean [®] Paver Enhancer	Concentrate





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SECTION A - NEW CONSTRUCTION CLEANING

DESCRIPTION OF PRODUCTS EVALUATED – New Construction Cleaning

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove Ash Grove[®] Type S mortar or grout from the submitted fired clay brick and pavers.

Ash Grove® Type S cementitious mortar was prepared in compliance with the manufacturers instructions, applied to the brick surface and allowed to cure for 3, 7 and 14 days. The sanded or unsanded grout was applied to the paver surface and allowed to cure for 3 and 7 days. Mortar and grout removal was accomplished using chemical assistance and a high-pressure water rinse with pressure rinsing equipment. The removal of Ash Grove® Type S cementitious masonry mortar was visually evaluated after 3, 7 and 14 days of curing. Removal of sanded and unsanded grout was evaluated after 3 and 7 days.

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.

Sure Klean[®] **600 Detergent** – A general purpose, concentrates acidic cleaner for brick, tile and concrete surfaces. 600 Detergent dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking.

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

TEST METHOD - New Construction Cleaning

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.

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

"Autumn Leaf Grain"

Product	Dilution	3 day	7 day	14 day
Sure Klean® Vana Trol®	1:6	90%	90%	90%
Sure Rieam Varia 11018	1:8	90%	90%	90%
Enviro Kloop® Sofoty Kloop	1:2	90%	90%	90%
Enviro Klean® Safety Klean	1:3	90%	90%	90%

"Ball Park"

Product	Dilution	3 day	7 day	14 day
Sure Klean® 600 Detergent	1:6	95%	95%	95%
Sure Rieari 600 Detergent	1:8	95%	95%	95%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
Enviro Klean Salety Klean	1:3	95%	95%	95%

"Barnwood"

Product	Dilution	3 day	7 day	14 day
Sure Klean® Vana Trol®	1:6	90%	90%	90%
Sure Riearr Varia 1101	1:8	90%	90%	90%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
Enviro Klean Safety Klean	1:3	95%	95%	95%

"Brimstone"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	90%	90%	90%
Sule Reall Valla 1101	1:8	90%	90%	90%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
	1:3	95%	95%	95%

"Buck Wheat"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	90%	90%	90%
Sule Riedii Valla 1101	1:8	90%	90%	90%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
Enviro Kleari Salety Kleari	1:3	95%	95%	95%





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PROSOCO, Inc.

Test Results - New Construction Cleaning

% Removal

"Carbondale"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol®	1:6	98%	98%	98%
	1:8	98%	98%	98%
Enviro Klean® Safety Klean	1:2	98%	98%	98%
	1:3	98%	98%	98%

"Charleston"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	95%	95%	95%
	1:8	95%	95%	95%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
	1:3	95%	95%	95%

"Chestnut"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] 600 Detergent	1:6	95%	95%	95%
	1:8	95%	95%	95%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
	1:3	95%	95%	95%

"Chicago Common"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	98%	98%	98%
Sure Riedii Vana 1101	1:8	98%	98%	98%
Enviro Klean [®] Safety Klean	1:2	98%	98%	98%
	1:3	98%	98%	98%

"Colonial Bark"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] 600 Detergent	1:6	95%	95%	95%
Sure Rieari 600 Detergent	1:8	95%	95%	90%
Enviro Klean [®] Safety Klean	1:2	90%	90%	90%
	1:3	90%	90%	90%





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Test Results - New Construction Cleaning

% Removal

"Colonial Matt"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] 600 Detergent	1:6	85%	85%	85%
	1:8	85%	85%	85%
Enviro Klean® Safety Klean	1:2	85%	85%	85%
	1:3	85%	85%	85%

"Danbury"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] 600 Detergent	1:6	98%	98%	98%
	1:8	98%	98%	95%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
	1:3	95%	95%	95%

"Delaware"

Product	Dilution	3 day	7 day	14 day
Sure Klean® 600 Detergent	1:6	98%	98%	98%
	1:8	98%	98%	98%
Enviro Klean [®] Safety Klean	1:2	98%	98%	98%
	1:3	98%	98%	98%

"Dover Grey"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	98%	98%	98%
	1:8	98%	98%	98%
Enviro Klean [®] Safety Klean	1:2	98%	98%	98%
	1:3	98%	98%	98%

"Georgetown"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	98%	98%	98%
	1:8	98%	98%	98%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
	1:3	95%	95%	95%





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Test Results - New Construction Cleaning

% Removal

"Heritage Antique"

Product	Dilution	3 day	7 day	14 day
Sure Klean® 600 Detergent	1:6	98%	98%	98%
	1:8	98%	98%	98%
Enviro Kloon® Sofoty Kloon	1:2	95%	95%	95%
Enviro Klean® Safety Klean	1:3	95%	95%	95%

"Imperial 30 Grain"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	98%	98%	98%
	1:8	98%	98%	98%
Enviro Klean [®] Safety Klean	1:2	98%	98%	98%
Enviro Klean Salety Klean	1:3	98%	98%	98%

"Monterey"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	95%	95%	95%
Sure Reali Valla 1101	1:8	95%	95%	95%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
Enviro Klean Salety Klean	1:3	95%	95%	95%





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Test Results - New Construction Cleaning

% Removal

"Old Chicago"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	95%	95%	95%
Sure Ricair Varia 1101	1:8	95%	95%	95%
Enviro Klean [®] Safety Klean	1:2	95%	95%	95%
Enviro Klean Salety Klean	1:3	95%	95%	95%

"Pearl"

Product	Dilution	3 day	7 day	14 day
Sure Klean® Vana Trol®	1:6	90%	90%	90%
Sure Riearr Varia 1101	1:8	90%	90%	90%
Enviro Klean [®] Safety Klean	1:2	90%	90%	90%
Enviro Rieari Salety Rieari	1:3	90%	90%	90%

"Quick Silver"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	98%	98%	98%
Sure Rieari Varia 1101	1:8	98%	98%	98%
Enviro Klean [®] Safety Klean	1:2	98%	98%	98%
Enviro Riean Salety Riean	1:3	95%	95%	95%





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Test Results - New Construction Cleaning

% Removal

"Stony Brook"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol®	1:6	90%	90%	90%
Sure Rieari Varia 11018	1:8	90%	90%	90%
Enviro Klean® Safety Klean	1:2	90%	90%	90%
Enviro Rieano Salety Riean	1:3	90%	90%	90%

"Thunder Cloud"

Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Vana Trol [®]	1:6	100%	100%	100%
Sure Riearr Varia 1101	1:8	90%	95%	95%
Enviro Klean [®] Safety Klean	1:2	100%	95%	95%
Enviro Rieari Salety Rieari	1:3	100%	95%	95%

"Water Lodge"

Product	Dilution	3 day	7 day	14 day
Sure Klean® 600 Detergent	1:6	95%	95%	95%
Sure Rieari 600 Detergent	1:8	90%	90%	90%
Enviro Klean [®] Safety Klean	1:2	95%	90%	90%
Enviro Riean Salety Riean	1:3	95%	90%	90%





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Test Results - New Construction Cleaning

% Removal

"Sante Fe Paver" - Sanded Grout

Product	Dilution	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:6	100%	100%
	1:8	90%	100%
Enviro Klean [®] Safety Klean	1:2	95%	90%
	1:3	95%	90%

"Sante Fe Paver" - Unsanded Grout

Product	Dilution	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:6	100%	100%
	1:8	90%	100%
Enviro Klean [®] Safety Klean	1:2	95%	90%
Enviro Klean Salety Klean	1:3	95%	90%

"Sedona Paver" - Sanded Grout

Product	Dilution	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:6	95%	95%
	1:8	90%	90%
Enviro Klean [®] Safety Klean	1:2	95%	90%
	1:3	95%	90%

"Sedona Paver" - Unsanded Grout

Product	Dilution	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:6	100%	100%
	1:8	90%	100%
Enviro Klean [®] Safety Klean	1:2	95%	90%
	1:3	95%	90%





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Test Results - New Construction Cleaning

% Removal

"Kiowa Paver" - Sanded Grout

Product	Dilution	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:6	85%	90%
	1:8	85%	90%
Enviro Klean [®] Safety Klean	1:2	85%	95%
	1:3	95%	95%

"Kiowa Paver" - Unsanded Grout

Product	Dilution	3 day	7 day
Sure Klean [®] Vana Trol [®]	1:6	90%	90%
	1:8	90%	90%
Enviro Klean [®] Safety Klean	1:2	90%	90%
	1:3	90%	90%

"Ouray Paver" - Sanded Grout

Product	Dilution	3 day	7 day
Sure Klean [®] Vana Trol®	1:6	85%	85%
	1:8	85%	85%
Enviro Klean® Safety Klean	1:2	90%	90%
	1:3	90%	90%

"Ouray Paver" – Unsanded Grout

Product	Dilution	3 day	7 day
Sure Klean [®] Vana Trol®	1:6	90%	90%
	1:8	90%	90%
Enviro Klean® Safety Klean	1:2	90%	90%
	1:3	90%	90%





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CONCLUSIONS - New Construction Cleaning

Based on the test results, all PROSOCO, Inc. products tested performed well in removing excess mortar or grout smears from the submitted clay brick and pavers. These products performed well in removing the mortar soils even after allowing the mortar to remain on the surface of the brick for 14 days under ideal curing conditions, and performed well in removing the grout soils after 7 days of curing.

It is recommended that the selected cleaners always be used in the lowest possible concentration. They should be rinsed with the lowest pressure of water as practical, at least 400 psi, to minimize removal of the decorative finish. Excessive pressure and water volume may combine to damage or remove decorative finishes. To facilitate easier removal of excess mortar and construction dirt while minimizing any potential surface alterations to the decorative finish, clean within 7 days of construction.

RECOMMENDATIONS- New Construction Cleaning

Recommendations for cleaning for each type of clay brick and paver submitted by Robinson Brick Company, Denver, CO, are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while limiting surface alterations.

Brick Type	New Construction Cleaning (Type S, 14 Days)
"Barnwood", "Brimstone" and "Buckwheat" Clay Brick	Enviro Klean [®] Safety Klean (1:2), (1:3)
"Colonial Bark" Clay Brick	Sure Klean® 600 Detergent (1:6)
"Danbury" and "Heritage" Clay Brick	Sure Klean® 600 Detergent (1:6), (1:8)
"Quicksilver" and "Thundercloud" Clay Brick	Sure Klean® Vana Trol® (1:6), (1:8)
"Autumn Leaf Grain", "Carbondale", "Chestnut", "Chicago Common", "Charleston", "Dover Grey", "Imperial 30 Grain", "Monterey", "Old Chicago", "Pearl" and "Stony Brook" Clay Brick	Sure Klean [®] Vana Trol [®] (1:6), (1:8) OR Enviro Klean® Safety Klean (1:2), (1:3)
"Ball Park", "Colonial Matt", "Delaware", "Georgetown" and "Water Lodge" Clay Brick	Sure Klean® 600 Detergent (1:6), (1:8) OR Enviro Klean® Safety Klean (1:2), (1:3)

Note: Sure Klean® Vana Trol® is recommended for new construction cleaning when colored mortars are used.





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RECOMMENDATIONS- New Construction Cleaning Continued

Paver Type	New Construction Cleaning (Sanded Grout, 7 Days)		
All Submitted Clay Pavers	Enviro Klean® Safety Klean (1:2), (1:3)		

Paver Type	New Construction Cleaning (Unsanded Grout, 7 Days)
All Submitted Clay Pavers	Sure Klean [®] Vana Trol® (1:6), (1:8) OR Enviro Klean [®] Safety Klean (1:2), (1:3)

Excessive pressure and water volume may combine to damage or remove decorative finishes. To facilitate easier removal of excess mortar 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.



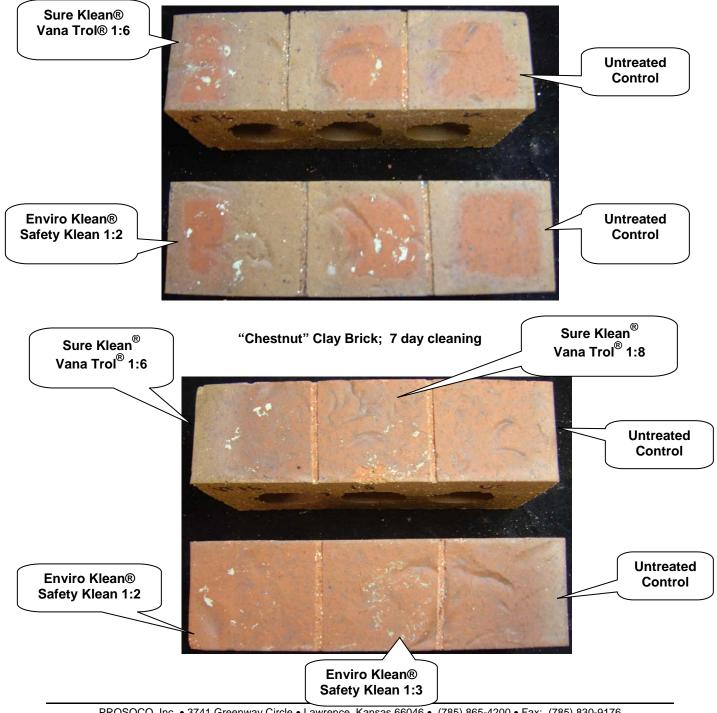


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PHOTOGRAPHS - Cleaning

"Chestnut" Clay Brick; 3 Day Cleaning



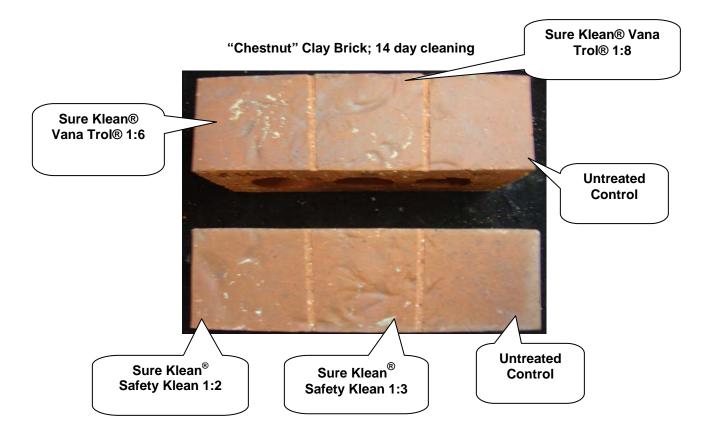




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PHOTOGRAPHS - Continued







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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.

Sure Klean[®] **600 Detergent** – A general purpose, concentrates acidic cleaner for brick, tile and concrete surfaces. 600 Detergent dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking.

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

TEST METHOD – 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®	•••••	3-5 minutes
600 Detergent		3-5 minutes
Safety Klean		3-5 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 – Limiting Surface Alterations

Substrate: Clay brick	Pigment Color: "Autumn Leaf Grain"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol®	1:6	0	0	0	0
Sure Klean [®] Vana Trol®	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:2	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Ball Park"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] 600 Detergent	1:6	0	0	0	0
Sure Klean [®] 600 Detergent	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Color: "Barnwood"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Brimstone"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Color: "Buck Wheat"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0

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 brick	Pigment Col	Pigment Color: "Carbondale"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol®	1:6	0	0	0	0	
Sure Klean [®] Vana Trol®	1:8	0	0	0	0	
Enviro Klean® Safety Klean	1:2	0	0	0	0	
Enviro Klean® Safety Klean	1:3	0	0	0	0	
Substrate: Clay brick	Pigment Col	or: "Charleston"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0	
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0	
Enviro Klean [®] Safety Klean	1:2	0	0	0	0	
Enviro Klean [®] Safety Klean	1:3	0	0	0	0	
Substrate: Clay brick	Pigment Col	Pigment Color: "Chestnut"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] 600 Detergent	1:6	0	0	0	0	
Sure Klean [®] 600 Detergent	1:8	0	0	0	0	
Enviro Klean [®] Safety Klean	1:2	0	0	0	0	
Enviro Klean [®] Safety Klean	1:3	0	0	0	0	
Substrate: Clay brick	Pigment Col	or: "Chicago Comn	non"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0	
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0	
Enviro Klean [®] Safety Klean	1:2	0	0	0	0	
Enviro Klean [®] Safety Klean	1:3	0	0	0	0	
Substrate: Clay brick	Pigment Col	Pigment Color: "Colonial Bark"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining	
Sure Klean® 600 Detergent	1:6	0	0	0	0	
Sure Klean® 600 Detergent	1:8	0	0	0	0	
Enviro Klean [®] Safety Klean	1:2	0	0	0	0	
Enviro Klean [®] Safety Klean	1:3	0	0	0	0	

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 brick	Pigment Col	or: "Colonial Matt"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] 600 Detergent	1:6	0	0	0	0
Sure Klean [®] 600 Detergent	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:2	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Danbury"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] 600 Detergent	1:6	0	0	0	0
Sure Klean [®] 600 Detergent	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Color: "Delaware"				
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] 600 Detergent	1:6	0	0	0	0
Sure Klean [®] 600 Detergent	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Dover Grey"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Georgetown"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0

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 brick	Pigment Col	or: "Heritage Antiqu	ıe"		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean® 600 Detergent	1:6	0	0	0	0
Sure Klean® 600 Detergent	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:2	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Imperial 30 Gra	ain"		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Monterey"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Old Chicago"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0

0 - No change

1 – change – slight

2 - change - moderate

3 - change - heavy

4 - change - excessive





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TEST RESULTS – Limiting Surface Alterations

Substrate: Clay brick	Pigment Col	lor: "Pearl"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	lor: "Quick Silver"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0

^{0 –} No change

^{1 –} change – slight

^{2 -} change - moderate

^{3 –} change – heavy

^{4 –} change - excessive





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TEST RESULTS – Limiting Surface Alterations

Substrate: Clay brick	Pigment Col	or: "Stony Brook"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol®	1:6	0	0	0	0
Sure Klean [®] Vana Trol®	1:8	0	0	0	0
Enviro Klean® Safety Klean	1:2	0	0	0	0
Enviro Klean® Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Thunder Cloud	"		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay brick	Pigment Col	or: "Water Lodge"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] 600 Detergent	1:6	0	0	0	0
Sure Klean [®] 600 Detergent	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0

^{0 –} No change

^{1 –} change – slight

^{2 -} change - moderate

^{3 -} change - heavy

^{4 -} change - excessive





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TEST RESULTS – Limiting Surface Alterations

Substrate: Clay paver	Pigment Col	or: "Sante Fe Pave	r"		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Col	or: "Sedona Paver'	1		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean [®] Safety Klean	1:3	0	0	0	0
Substrate: Clay paver	Pigment Col	or: "Kiowa Paver"			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Vana Trol [®]	1:6	0	0	0	0
Sure Klean [®] Vana Trol [®]	1:8	0	0	0	0
B 0 () 1(1				=	U
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
Enviro Klean Safety Klean Enviro Klean Safety Klean	1:2 1:3	0	0	0	
	1:3				0
Enviro Klean [®] Safety Klean	1:3	0			0
Enviro Klean [®] Safety Klean Substrate: Clay paver	1:3 Pigment Col	0 or: "Ouray Paver" Surface Finish	0 Substrate	0	0 0
Enviro Klean [®] Safety Klean Substrate: Clay paver Product	1:3 Pigment Col Dilution	0 or: "Ouray Paver" Surface Finish Removal	0 Substrate Deterioration	0 Color Change	0 0 Staining
Enviro Klean [®] Safety Klean Substrate: Clay paver Product Sure Klean [®] Vana Trol®	1:3 Pigment Col Dilution 1:6	0 or: "Ouray Paver" Surface Finish Removal 0	Substrate Deterioration 0	0 Color Change 0	0 0 Staining

0 – No change

1 – change – slight

2 - change - moderate

3 - change - heavy

4 - change - excessive





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CONCLUSIONS – Limiting Surface Alterations

Test results indicate that none of the products tested caused any surface alterations on any of the submitted clay brick or pavers. It is recommended that the selected cleaners always be used in the lowest possible concentration. They should be rinsed with the lowest pressure of water as practical to minimize removal of the decorative finish. Excessive pressure and water volume may combine to damage or remove decorative finishes. To facilitate easier removal of excess mortar 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 brick and paver submitted by Robinson Brick Company, Denver, CO, are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while limiting surface alterations.

Brick Type	Recommended Products
"Barnwood", "Brimstone" and "Buckwheat" Clay Brick	Enviro Klean [®] Safety Klean (1:2), (1:3)
"Colonial Bark" Clay Brick	Sure Klean® 600 Detergent (1:6)
"Danbury" and "Heritage" Clay Brick	Sure Klean® 600 Detergent (1:6), (1:8)
"Quicksilver" and "Thundercloud" Clay Brick	Sure Klean® Vana Trol® (1:6), (1:8)
"Autumn Leaf Grain", "Carbondale", "Chestnut", "Chicago Common", "Charleston", "Dover Grey", "Imperial 30 Grain", "Monterey", "Old Chicago", "Pearl" and "Stony Brook" Clay Brick	Sure Klean [®] Vana Trol [®] (1:6), (1:8) OR Enviro Klean® Safety Klean (1:2), (1:3)
"Ball Park", "Colonial Matt", "Delaware", "Georgetown" and "Water Lodge" Clay Brick	Sure Klean® 600 Detergent (1:6), (1:8) OR Enviro Klean® Safety Klean (1:2), (1:3)





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RECOMMENDATIONS- New Construction Cleaning Continued

Paver Type	New Construction Cleaning (Sanded Grout, 7 Days)
All Submitted Clay Pavers	Enviro Klean® Safety Klean (1:2), (1:3)

Paver Type	New Construction Cleaning (Unsanded Grout, 7 Days)
All Submitted Clay Pavers	Sure Klean [®] Vana Trol® (1:6), (1:8) OR Enviro Klean [®] Safety Klean (1:2), (1:3)

Excessive pressure and water volume may combine to damage or remove decorative finishes. To facilitate easier removal of excess mortar 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





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DESCRIPTIONS OF PRODUCTS EVALUATED - Protective Water Repellents:

Sure Klean® Weather Seal Siloxane PD – A ready-to-use, water-based silane/siloxane water repellent for concrete, GFRC, and most masonry and stucco surfaces. Siloxane PD penetrates more deeply than conventional water repellents. It helps masonry resist cracking, spalling, staining, and other damage related to water intrusion. Low odor and alkaline stable, Siloxane PD is ideal for field and in-plant application.

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

Sure Klean® Weather Seal Blok-Guard & Graffiti Control – A clear, solvent-based silicone elastomer formulated to formulated to weatherproof custom masonry units, cast stone, architectural concrete block, precast concrete, wood and porous masonry. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering. Custom Masonry Sealer has excellent UV stability and provides long-lasting protection against water penetration and many types of graffiti. Easy to apply with low-pressure spray, brush or roller.

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

Sure Klean® Paver Enhancer - A solvent-based blend of high-quality siloxanes modified to provide excellent water repellency and color enhancement to interlocking concrete, fired clay, porous tile and many types of natural stone surfaces. Paver Enhancer penetrates and reacts with the surface to form a chemical bond, providing long-term durability, alkali resistance and superior breathability.

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® Impregnator – Combines water and oil repellency to prevent staining by waterborne or oily substances. This special system offers invisible protection and low volatility.

SAMPLE PREPARATION - Protective Water Repellents:

The submitted brick were cut, oven dried and allowed to reabsorb atmospheric humidity for at least 24 hours prior to treatment. The treatment method adhered to the 2004 PROSOCO, Inc. Product Guide. All treatments were allowed to cure for at least 3 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 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 \underline{AA} Above Average water repellent performance would require loss of no more than 5 ml X 20% = 1 ml.

A rating of $\underline{\mathbf{A}}$ Average water repellent performance would require loss of no more than 5 ml X 50% = 2.5ml.

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

TEST METHODS:

This test method was conducted on the "Colonial Matt" and "Colonial Bark" brick only due to their rough surface texture.

Water Absorption - Capillary Uptake

Water Absorption values of samples are determined by comparing the dry weight of the masonry samples with their weight after water uptake by capillary absorptions through the weathered surface for 1-minute, 4-minute, 9-minute, 16-minute, 36-minute, and 64-minute timed intervals.





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TEST RESULTS: Protective Water Repellents

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

 \underline{AA} = Above Average \underline{A} = Average \underline{BA} = Below Average

"Autumn Leaf Grain"	Results in mL loss	Ranking
Untreated Control	4.6	
Weather Seal Siloxane PD	0.3	AA
Weather Seal Siloxane WB (1:9)	0.1	AA
Weather Seal Siloxane WB (1:14)	0.1	AA
Blok-Guard & Graffiti Control	0.0	AA
"Ball Park"	Results in mL loss	Ranking
Untreated Control	2.9	
Weather Seal Siloxane PD	0.1	AA
Weather Seal Siloxane WB (1:9)	0.0	AA
Weather Seal Siloxane WB (1:14)	0.0	AA
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Barnwood"	Results in mL loss	Ranking
Untreated Control	4.3	
Weather Seal Siloxane PD	0.0	AA
Weather Seal Siloxane WB (1:9)	0.4	AA
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Brimstone"	Results in mL loss	Ranking
Untreated Control	4.4	
Weather Seal Siloxane PD	0.5	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.1	<u>AA</u>
"Buck Wheat"	Results in mL loss	Ranking
Untreated Control	< 5.0	
Weather Seal Siloxane PD	0.2	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.3	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>





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

 \underline{AA} = Above Average \underline{A} =

 $\underline{\mathbf{A}}$ = Average

BA = Below Average

"Carbondale"	Results in mL loss	Ranking
Untreated Control	4.3	
Weather Seal Siloxane PD	0.1	AA
Weather Seal Siloxane WB (1:9)	0.0	AA
Weather Seal Siloxane WB (1:14)	0.0	AA
Blok-Guard & Graffiti Control	0.8	<u>AA</u>
"Charleston"	Results in mL loss	Ranking
Untreated Control	< 5.0	
Weather Seal Siloxane PD	0.0	AA
Weather Seal Siloxane WB (1:9)	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Chestnut"	Results in mL loss	Ranking
Untreated Control	4.7	
Weather Seal Siloxane PD	0.0	AA
Weather Seal Siloxane WB (1:9)	0.0	AA
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Chicago Common"	Results in mL loss	Ranking
Untreated Control	4.9	
Weather Seal Siloxane PD	0.0	AA
Weather Seal Siloxane WB (1:9)	0.0	AA
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Colonial Bark"	Results in mL loss	Ranking
Untreated Control		
Weather Seal Siloxane PD		
Weather Seal Siloxane WB (1:9)	See Capillary	y Uptake Results Page 36
Weather Seal Siloxane WB (1:14)		
Blok-Guard & Graffiti Control		





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

AA = Above Average

 $\underline{\mathbf{A}}$ = Average

BA = Below Average

"Colonial Matt"	Results in mL loss	Ranking
Untreated Control		
Weather Seal Siloxane PD		
Weather Seal Siloxane WB (1:9)	See Capillary	Uptake Results Page 36
Weather Seal Siloxane WB (1:14)		
Blok-Guard & Graffiti Control		
"Danbury"	Results in mL loss	Ranking
Untreated Control	1.9	
Weather Seal Siloxane PD	0.1	AA
Weather Seal Siloxane WB (1:9)	0.2	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Delaware"	Results in mL loss	Ranking
Untreated Control	< 5.0	
Weather Seal Siloxane PD	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Dover Grey"	Results in mL loss	Ranking
Untreated Control	< 5.0	
Weather Seal Siloxane PD	0.1	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Georgetown"	Results in mL loss	Ranking
Untreated Control	4.9	-
Weather Seal Siloxane PD	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.3	<u>AA</u>





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

<u>AA</u> = Above Average

 $\underline{\mathbf{A}}$ = Average

BA = Below Average

"Heritage Antique"	Results in mL loss	Ranking
Untreated Control	3.0	
Weather Seal Siloxane PD	0.1	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.1	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Imperial 30 Grain"	Results in mL loss	Ranking
Untreated Control	4.9	
Weather Seal Siloxane PD	0.1	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.1	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Monterey"	Results in mL loss	Ranking
-		
Untreated Control	3.6	
	3.6 0.1	 <u>AA</u>
Untreated Control	*.*	 <u>AA</u> <u>AA</u>
Untreated Control Weather Seal Siloxane PD	0.1	
Untreated Control Weather Seal Siloxane PD Weather Seal Siloxane WB (1:9)	0.1 0.0	AA
Untreated Control Weather Seal Siloxane PD Weather Seal Siloxane WB (1:9) Weather Seal Siloxane WB (1:14)	0.1 0.0 0.0	<u>AA</u> <u>AA</u>
Untreated Control Weather Seal Siloxane PD Weather Seal Siloxane WB (1:9) Weather Seal Siloxane WB (1:14) Blok-Guard & Graffiti Control	0.1 0.0 0.0 0.0	AA AA AA
Untreated Control Weather Seal Siloxane PD Weather Seal Siloxane WB (1:9) Weather Seal Siloxane WB (1:14) Blok-Guard & Graffiti Control "Old Chicago"	0.1 0.0 0.0 0.0 0.0 Results in mL loss	AA AA AA Ranking
Untreated Control Weather Seal Siloxane PD Weather Seal Siloxane WB (1:9) Weather Seal Siloxane WB (1:14) Blok-Guard & Graffiti Control "Old Chicago" Untreated Control	0.1 0.0 0.0 0.0 0.0 Results in mL loss 3.3	AA AA AA Ranking
Untreated Control Weather Seal Siloxane PD Weather Seal Siloxane WB (1:9) Weather Seal Siloxane WB (1:14) Blok-Guard & Graffiti Control "Old Chicago" Untreated Control Weather Seal Siloxane PD	0.1 0.0 0.0 0.0 0.0 Results in mL loss 3.3 0.1	AA AA AA Ranking 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

"Pearl"	Results in mL loss	Ranking
Untreated Control	1.9	
Weather Seal Siloxane PD	0.0	AA
Weather Seal Siloxane WB (1:9)	0.0	AA
Weather Seal Siloxane WB (1:14)	0.0	<u> </u>
Blok-Guard & Graffiti Control	0.0	AA
"Quick Silver"	Results in mL loss	Ranking
Untreated Control	2.9	
Weather Seal Siloxane PD	0.3	AA
Weather Seal Siloxane WB (1:9)	0.0	AA
Weather Seal Siloxane WB (1:14)	0.0	AA
Blok-Guard & Graffiti Control	0.1	<u>AA</u>
"Stony Brook"	Results in mL loss	Ranking
Untreated Control	3.3	
Weather Seal Siloxane PD	0.0	AA
Weather Seal Siloxane WB (1:9)	0.1	AA
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Thunder Cloud"	Results in mL loss	Ranking
Untreated Control	4.6	
Weather Seal Siloxane PD	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>
"Water Lodge"	Results in mL loss	Ranking
Untreated Control	< 5.0	
Weather Seal Siloxane PD	0.0	<u>AA</u>
Weather Seal Siloxane WB (1:9)	0.1	<u>AA</u>
Weather Seal Siloxane WB (1:14)	0.0	<u>AA</u>
Blok-Guard & Graffiti Control	0.0	<u>AA</u>





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

AA = Above Average

A = Average

BA = Below Average

"Sante Fe Paver"	Results in mL loss	<u>Ranking</u>
Untreated Control	3.8	=
Paver Enhancer	0.0	AA
SLX100	0.0	<u>AA</u>
Impregnator	0.0	<u>AA</u>
Saltguard WB	0.0	<u>AA</u>
"Sedona Paver"	Results in mL loss	<u>Ranking</u>
Untreated Control	< 5.0	=
Paver Enhancer	0.0	<u>AA</u>
SLX100	0.0	<u>AA</u>
Impregnator	0.0	<u>AA</u>
Saltguard WB	0.0	<u>AA</u>
"Kiowa Paver"	Results in mL loss	David's s
Niowa Pavei	Results in mL ioss	<u>Ranking</u>
Untreated Control	3.8	Ranking
		<u>Ranking</u> AA
Untreated Control	3.8	=
Untreated Control Paver Enhancer	3.8 0.0	
Untreated Control Paver Enhancer SLX100	3.8 0.0 0.0	== <u>AA</u> <u>AA</u>
Untreated Control Paver Enhancer SLX100 Impregnator	3.8 0.0 0.0 0.0	== AA AA AA
Untreated Control Paver Enhancer SLX100 Impregnator Saltguard WB	3.8 0.0 0.0 0.0 0.0 0.2	== <u>AA</u> <u>AA</u> <u>AA</u> <u>AA</u>
Untreated Control Paver Enhancer SLX100 Impregnator Saltguard WB "Ouray Paver"	3.8 0.0 0.0 0.0 0.0 0.2 Results in mL loss	== AA AA AA AA Ranking
Untreated Control Paver Enhancer SLX100 Impregnator Saltguard WB "Ouray Paver" Untreated Control	3.8 0.0 0.0 0.0 0.2 Results in mL loss 4.3	 AA AA AA AA Ranking
Untreated Control Paver Enhancer SLX100 Impregnator Saltguard WB "Ouray Paver" Untreated Control Paver Enhancer	3.8 0.0 0.0 0.0 0.2 Results in mL loss 4.3 0.1	== AA AA AA AA Ranking





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TEST RESULTS:

Water Absorption - Capillary Uptake

Sample	% Absorbed 1 minute	% Absorbed 4 minutes	% Absorbed 9 minutes	% Absorbed 16 minutes	% Absorbed 36 minutes	% Absorbed 64 minutes
Colonial Matt						
Untreated	0.85	0.90	1.19	1.60	2.04	2.59
Siloxane PD	0.17	0.19	0.20	0.17	0.09	0.02
Silox. WB 1:9	0.36	0.19	0.09	0.10	0.25	0.02
Silox. WB 1:14	0.12	0.11	0.09	0.05	0.09	0.18
Blok-Guard	0.26	0.01	0.56	0.09	0.56	0.30
Colonial Bark						
Untreated	1.55	1.73	2.01	2.30	3.30	4.03
Siloxane PD	0.26	0.22	0.15	0.27	0.28	0.24
Silox. WB 1:9	0.18	0.03	0.03	0.20	0.12	0.18
Silox. WB 1:14	0.00	0.00	0.00	0.00	0.00	0.01
Blok-Guard	0.60	0.04	0.33	0.57	0.92	0.99



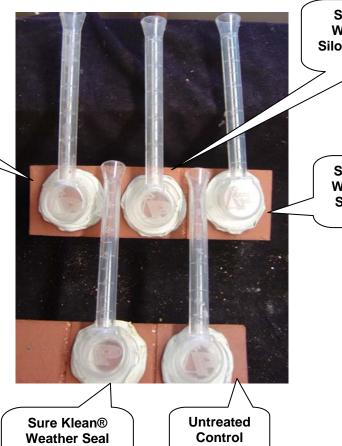


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Sure Klean® Weather Seal Siloxane WB 1:9 Page 40

PHOTOGRAPH – Water Repellents





Sure Klean® Weather Seal Siloxane WB 1:14

> Sure Klean® Weather Seal Siloxane PD

Sure Klean® Weather Seal Blok-Guard & Graffiti Control





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CONCLUSIONS – Protective Water Repellents:

Test results indicate that all of the water repellents tested exhibited above average water repellency on all submitted clay brick and clay pavers. In the water absorption tests conducted using the capillary uptake method, all of the treatments evaluated were at least 70% effective in providing water repellency to the submitted "Colonial Matt" and "Colonial Bark" brick.

RECOMMENDATIONS – Protective Water Repellents:

Recommendations for water repellent treatments for each type of clay brick submitted by Robinson Brick Company, Denver, CO, are provided in the chart below. Recommendations are based on the treatments that proved most effective and can provide water repellency on all types indicated.

Brick Type	Water Repellent
	Sure Klean® Weather Seal Siloxane WB Concentrate (1:9), (1:14)
	OR
All Submitted Clay Brick	Sure Klean® Weather Seal Siloxane PD
All Submitted Clay Brick	OR
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control
	Sure Klean® Paver Enhancer
	OR
	Consolideck [®] Saltguard® WB
All Submitted Pavers	OR
All Submitted Favers	Stand Off® SLX100 Water & Oil Repellent
	OR '
	Stand Off® Impregnator

It must be pointed out that in any installation, the brick are a single component of the masonry facade. The ability of a water repellent treatment to prevent the ingress of water is affected by a variety of other 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 water repellent product and procedures for a particular project. See product literature for additional application and product information.





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SECTION D – GRAFFITI CONTROL

DESCRIPTION OF PRODUCTS EVALUATED

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

Graffiti Control Treatments

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control – A clear, solvent-based silicone elastomer formulated to weatherproof concrete block and other porous masonry material. Sure Klean® Weather Seal Blok-Guard® & Graffiti Control protects masonry surfaces from repeated graffiti attacks without altering the natural appearance.

Products Evaluated for Graffiti Removal

Defacer Eraser[®] Graffiti Wipe – An easy-to-use graffiti remover that does not contain methanol, methylene chloride or other "halogenated" solvents prohibited on many projects. Graffiti Wipe removes a variety of graffiti stains from most smooth masonry, wood and metal surfaces.

Sure Klean[®] **Fast Acting Stripper** – A thixotropic stripping compound formulated specifically for removal of high strength paints and coatings such as epoxies, polyurethanes, and floor enamels. Additionally, Fast Acting Stripper dissolves most spray paints, marking pens, lacquers and other graffiti.

Graffiti Agents

Interior/Exterior Spray Paint (Red) Permanent Marker (Green) Permanent Marker (Red) Permanent Marker (Black)





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SAMPLE PREPARATION – Graffiti Control

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

Application of Sure Klean® Weather Seal Blok-Guard® & Graffiti Control:

Sections of the samples were treated with one coat of Sure Klean® Weather Seal Blok-Guard® & Graffiti Control in accordance with PROSOCO, Inc.'s Product Guide application instructions, and then allowed to cure for at least one day. At the end of the one-day cure period, a visual adverse effects evaluation was made and then the graffiti agents were applied to the substrates.

Spray paint and markers were applied as graffiti agents to all treated surfaces no sooner than one day following application. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents, using Defacer Eraser® Graffiti Wipe and Sure Klean® Fast Acting Stripper.

TEST METHOD – Graffiti Control

Chemical cleaners were evaluated using the following procedure:

- 1. Apply the product to a dry surface, soiled with graffiti.
- 2. Allow appropriate dwell time:

- 3. Pressure rinse thoroughly until water runs clear. *
- 4. Allow the surface to dry thoroughly and visually examine to determine effectiveness.
- * Pressure rinsing was conducted at approximately 1300 psi with a warm water flow rate of 1.9 gallons per minute.





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TEST RESULTS – Graffiti Control

	"Autumn Leaf Grain" Clay Brick						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	98%	98%	98%	97%		
Graffiti Wipe	90%	95%	95%	95%	94%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	100%	100%	100%	100%	100%		
Graffiti Wipe	95%	100%	100%	100%	99%		
	"Ball Pa	rk" Clay Bric	k				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	100%	95%	100%	98%		
Graffiti Wipe	95%	100%	95%	100%	98%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	100%	100%	100%	100%	100%		
Graffiti Wipe	100%	100%	100%	100%	100%		
	"Barnwo	od" Clay Brid	k				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	90%	98%	90%	90%	92%		
Graffiti Wipe	95%	95%	90%	90%	93%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	98%	98%	98%	98%	98%		
Graffiti Wipe	98%	98%	98%	98%	98%		

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	"Brimstone" Clay Brick						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	95%	90%	90%	93%		
Graffiti Wipe	80%	80%	80%	80%	80%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	98%	98%	98%	98%	98%		
Graffiti Wipe	98%	95%	95%	95%	96%		
	"Buck WI	neat" Clay Bri	ck				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	98%	90%	95%	95%		
Graffiti Wipe	100%	98%	90%	95%	96%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	100%	98%	98%	98%		
Graffiti Wipe	98%	100%	100%	100%	100%		
	"Carbono	dale" Clay Bri	ck				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	80%	95%	80%	80%	84%		
Graffiti Wipe	80%	90%	80%	80%	83%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	90%	100%	95%	95%	95%		
Graffiti Wipe	95%	100%	95%	95%	96%		





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	"Charleston" Clay Brick					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	95%	95%	90%	90%	93%	
Graffiti Wipe	95%	85%	85%	85%	88%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	98%	98%	98%	98%	98%	
Graffiti Wipe	98%	95%	95%	95%	96%	
	"Chestn	ut" Clay Bric	k			
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	98%	98%	95%	98%	97%	
Graffiti Wipe	98%	95%	95%	98%	97%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	100%	100%	100%	100%	100%	
Graffiti Wipe	100%	98%	98%	98%	99%	
	"Chicago Co	mmon" Clay	Brick			
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	90%	85%	85%	85%	86%	
Graffiti Wipe	95%	85%	85%	85%	88%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	100%	98%	98%	98%	99%	
Graffiti Wipe	100%	98%	98%	98%	99%	





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	"Colonial Bark" Clay Brick						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	98%	98%	98%	98%	98%		
Graffiti Wipe	98%	98%	98%	98%	98%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	100%	100%	100%	100%	100%		
Graffiti Wipe	100%	100%	100%	100%	100%		
	"Colonial	Matt" Clay Br	ick				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	98%	100%	100%	100%	100%		
Graffiti Wipe	100%	100%	100%	100%	100%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	100%	100%	100%	100%	100%		
Graffiti Wipe	100%	100%	100%	100%	100%		
	"Danbu	ry" Clay Bricl	(
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	95%	95%	95%	95%		
Graffiti Wipe	95%	95%	95%	95%	95%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	100%	98%	98%	98%	99%		
Graffiti Wipe	100%	98%	98%	98%	99%		





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	"Delaware" Clay Brick					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	98%	98%	90%	90%	94%	
Graffiti Wipe	98%	95%	90%	90%	93%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	100%	100%	100%	100%	100%	
Graffiti Wipe	100%	100%	100%	100%	100%	
	"Dover G	rey" Clay Bri	ck			
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	90%	95%	80%	85%	88%	
Graffiti Wipe	95%	85%	80%	85%	86%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	98%	98%	95%	95%	97%	
Graffiti Wipe	98%	98%	95%	95%	97%	
	"Georgeto	wn" Clay Bri	ick			
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	100%	100%	90%	95%	96%	
Graffiti Wipe	100%	90%	90%	90%	93%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	100%	100%	100%	100%	100%	
Graffiti Wipe	100%	98%	98%	98%	99%	





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	"Heritage Antique" Clay Brick						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	98%	95%	98%	97%		
Graffiti Wipe	85%	85%	85%	95%	88%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	100%	100%	100%	100%	100%		
Graffiti Wipe	100%	100%	100%	100%	100%		
	"Imperial 30	Grain" Clay I	Brick				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	95%	90%	90%	93%		
Graffiti Wipe	95%	90%	85%	85%	89%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	98%	98%	98%	98%	98%		
Graffiti Wipe	98%	98%	98%	98%	98%		
	"Monter	ey" Clay Bric	k				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	95%	95%	95%	95%		
Graffiti Wipe	95%	95%	95%	95%	95%		
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal		
Fast Acting Stripper	95%	95%	95%	95%	95%		
Graffiti Wipe	95%	95%	95%	95%	95%		





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"Old Chicago" Clay Brick						
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	98%	100%	100%	100%	100%	
Graffiti Wipe	95%	95%	95%	95%	95%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	100%	100%	100%	100%	100%	
Graffiti Wipe	100%	100%	100%	100%	100%	
	"Pearl	" Clay Brick				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	95%	90%	90%	90%	91%	
Graffiti Wipe	85%	80%	80%	80%	81%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	90%	90%	90%	90%	90%	
Graffiti Wipe	90%	90%	90%	90%	90%	
	"Qui	ick Silver"				
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	95%	85%	85%	85%	88%	
Graffiti Wipe	85%	75%	75%	75%	78%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	98%	95%	95%	95%	96%	
Graffiti Wipe	98%	95%	95%	95%	96%	





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	"Stony Brook" Clay Brick					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	95%	95%	95%	95%	95%	
Graffiti Wipe	95%	85%	85%	85%	88%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	98%	98%	98%	98%	98%	
Graffiti Wipe	98%	95%	95%	95%	96%	
	"Thunder C	loud" Clay B	rick			
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	95%	90%	90%	90%	91%	
Graffiti Wipe	85%	80%	80%	80%	81%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	98%	98%	98%	98%	98%	
Graffiti Wipe	95%	85%	90%	90%	90%	
	"Water Lo	dge" Clay Br	ick			
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	100%	98%	98%	98%	99%	
Graffiti Wipe	100%	98%	98%	98%	99%	
Blok-Guard® & Graffiti Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal	
Fast Acting Stripper	100%	100%	100%	100%	100%	
Graffiti Wipe	100%	100%	100%	100%	100%	





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PHOTOGRAPHS – Graffiti Control

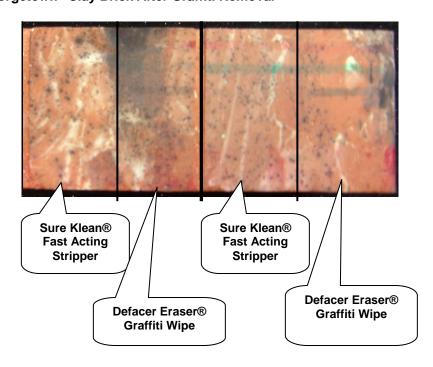
"Georgetown" Clay Brick Before Graffiti Removal



Sure Klean® Weather Seal® Blok-Guard® & Graffiti Control

Untreated Control

"Georgetown" Clay Brick After Graffiti Removal







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CONCLUSIONS - Graffiti Control

Based upon laboratory evaluations, graffiti removal was improved when the submitted samples were treated with Sure Klean® Weather Seal Blok-Guard® & Graffiti Control prior to graffiti application. In addition, Sure Klean® Weather Seal Blok-Guard® & Graffiti Control enhanced the appearance of the clay brick.

RECOMMENDATIONS – GRAFFITI CONTROL

Recommendations for graffiti control treatment for each type of clay brick submitted by Robinson Brick Company, Denver, CO, are provided in the chart below. Recommendations are based on the treatment that proved most effective for providing graffiti repellency and the product that was most effective at removing the graffiti on all types submitted.

Brick Type	Graffiti Repellent	Graffiti Removers
All Submitted Clay Brick	Sure Klean® Weather Seal Blok- Guard® & Graffiti Control	Sure Klean [®] Fast Acting Stripper OR Defacer Eraser [®] Graffiti Wipe

Apply all products in accordance with the manufacturer's recommendation provided on container labels and product data sheets. Because the severity of graffiti varies from location to location, on-site testing should be conducted to determine the most appropriate graffiti control product and procedure for a particular project.

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





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SECTION E – STAIN REPELLENCY

DESCRIPTION OF PRODUCTS EVALUATED

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

Products Evaluated for Stain Protection:

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

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

Stand Off® Impregnator – Combines water and oil repellency to prevent staining by waterborne or oily substances. This special system offers invisible protection and low volatility.

<u>Kitchen Products Evaluated</u>: <u>Temperature</u>:

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. The method of application for protective treatments followed the PROSOCO, Inc. 2004 Product Guide.





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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 $0.5-1.0\,\mathrm{cm}$ 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)

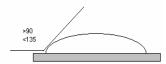
1. No wetting of contact area (no darkening); angle less than 90°



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.



Stain Removal Evaluation

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





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EST RESULTS	S – Surfa	ce Beadin	ıg						
				"Kiow	a Paver"				
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	5	-	-	5	5	5	5	5	5
SLX 100	2	-	-	2	2	2	2	2	2
STMP	3	-	=	3	3	4	4	4	4
Impregnator	2	-	·	2	2	3	3	3	3
				"Oura	y Paver"				
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	5	-	-	5	5	5	5	5	4
SLX 100	2	-	-	2	2	2	2	2	2
STMP	4	-	-	4	4	4	4	4	4
Impregnator	2	-	-	2	2	2	2	2	2
				"Sante	Fe Paver"				
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	5	-	-	5	5	5	5	5	5
SLX 100	2	-	ı	2	2	2	2	2	2
STMP	3	-	-	3	3	3	3	3	3
Impregnator	2	-	-	2	2	2	2	2	2
				"Sedor	na Paver"				
	Coco- Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
Untreated Control	5	-	-	5	5	5	5	5	5
SLX 100	2	-	=	2	2	2	2	2	2
STMP	2	-	-	2	2	2	2	2	2
Impregnator	2	-	=	2	2	2	2	2	2





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TEST RESULTS – Staining Removal

% Removal

	Untreate	d Control							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	90%	90%	100%	100%	100%	95%	95%	100%
l hour	100%	100%	95%	100%	100%	100%	95%	95%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
0 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Stand Of	f [®] Stone, Tile	& Masonry	Protector					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
						4000/	4000/	4000/	4000/
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
	100% 100%	100% 100%	100% 100%	100%	100%	100%	100%	100%	
4 hour 1 hour 10 min.									100% 100% 100%
1 hour	100%	100%	100% 100%	100% 100%	100% 100%	100%	100% 100%	100% 100%	100% 100%
1 hour	100%	100% 100%	100% 100%	100% 100%	100%	100%	100%	100%	100% 100%
1 hour	100% 100% Stand Of	100% 100% f [®] SLX 100 W	100% 100% ater & Oil Re	100% 100% pellent	100% 100% Balsamic	100% 100%	100% 100% Olive	100% 100% Wesson	100% 100% Hot Coffee
1 hour 0 min. 24 hr	100% 100% Stand Of Coca Cola	100% 100% f [®] SLX 100 W Ketchup	100% 100% ater & Oil Re Mustard	100% 100% pellent Red Wine	100% 100% Balsamic Vinegar	100% 100% Soy Sauce	100% 100% Olive Oil	100% 100% Wesson Oil	100% 100% Hot Coffee
1 hour 0 min. 24 hr 1 hour	100% 100% Stand Of Coca Cola 100%	100% 100% f [®] SLX 100 W Ketchup 100%	100% 100% ater & Oil Re Mustard 100%	100% 100% pellent Red Wine 100%	100% 100% Balsamic Vinegar 100%	100% 100% Soy Sauce 100%	100% 100% Olive Oil 100%	100% 100% Wesson Oil 100%	100% 100% Hot Coffee 100% 100%
1 hour 0 min. 24 hr 4 hour 1 hour	100% 100% Stand Of Coca Cola 100% 100%	100% 100% f [®] SLX 100 W Ketchup 100% 100%	100% 100% ater & Oil Re Mustard 100%	100% 100% pellent Red Wine 100%	100% 100% Balsamic Vinegar 100% 100%	100% 100% Soy Sauce 100% 100%	100% 100% Olive Oil 100% 100%	100% 100% Wesson Oil 100%	100% 100% Hot Coffee 100% 100%
1 hour 10 min.	100% 100% Stand Of Coca Cola 100% 100% 100%	100% 100% f [®] SLX 100 W Ketchup 100% 100%	100% 100% ater & Oil Re Mustard 100% 100% 100%	100% 100% pellent Red Wine 100% 100%	100% 100% Balsamic Vinegar 100% 100%	100% 100% Soy Sauce 100% 100%	100% 100% Olive Oil 100% 100%	100% 100% Wesson Oil 100% 100%	100% 100% Hot Coffee 100% 100%
1 hour 10 min. 24 hr 4 hour 1 hour	100% 100% Stand Of Coca Cola 100% 100% 100%	100% 100% f® SLX 100 W Ketchup 100% 100% 100%	100% 100% ater & Oil Re Mustard 100% 100% 100%	100% 100% pellent Red Wine 100% 100%	100% 100% Balsamic Vinegar 100% 100%	100% 100% Soy Sauce 100% 100%	100% 100% Olive Oil 100% 100%	100% 100% Wesson Oil 100% 100%	100% 100%
1 hour 0 min. 24 hr 4 hour 1 hour 0 min.	100% 100% Stand Of Coca Cola 100% 100% 100% Stand Of Coca	100% 100% f® SLX 100 W Ketchup 100% 100% 100% 100%	100% 100% ater & Oil Re Mustard 100% 100% 100%	100% 100% pellent Red Wine 100% 100% 100% 100%	100% 100% Balsamic Vinegar 100% 100% 100%	100% 100% Soy Sauce 100% 100% 100%	100% 100% Olive Oil 100% 100% 100%	100% 100% Wesson Oil 100% 100% 100%	100% 100% Hot Coffee 100% 100% 100%
1 hour 10 min. 24 hr 4 hour 1 hour	100% 100% Stand Of Coca Cola 100% 100% 100% Coca Cola Coca Cola	100% 100% f® SLX 100 W Ketchup 100% 100% 100% f® Impregnate Ketchup	100% 100% ater & Oil Re Mustard 100% 100% 100% 100% The stand of th	100% 100% pellent Red Wine 100% 100% 100% 100% Red Wine	100% 100% Balsamic Vinegar 100% 100% 100% Balsamic Vinegar	100% 100% Soy Sauce 100% 100% 100% Soy Sauce	100% 100% Olive Oil 100% 100% 100%	100% 100% Wesson Oil 100% 100% 100%	100% 100% 100% 100% 100% 100% 100% 100%
1 hour 10 min. 24 hr 4 hour 1 hour 10 min.	100% 100% Stand Of Coca Cola 100% 100% 100% Coca Cola 100% 100%	100% 100% f® SLX 100 W Ketchup 100% 100% 100% f® Impregnate Ketchup 100%	100% 100% ater & Oil Re Mustard 100% 100% 100% The start of the sta	100% 100% pellent Red Wine 100% 100% 100% Red Wine 100%	100% 100% Balsamic Vinegar 100% 100% 100% Balsamic Vinegar 100%	100% 100% Soy Sauce 100% 100% 100% Soy Sauce 100%	100% 100% Olive Oil 100% 100% 100% Olive Oil 100%	100% 100% Wesson Oil 100% 100% 100% Wesson Oil 100%	100% 100% 100% 100% 100% 100% 100% 100%





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TEST RESULTS – Staining Removal

% Removal

					"Ouray Pave	.r" 			
	Untreate	d 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%	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 Of	f [®] Stone, Tile	, & Masonry	Protector					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
	4000/	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	10076	10070						
1 hour 10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%
	100% Stand Of	ļ	100%	pellent	100%	1		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	100%
	100%	100%	100%	10070	100% Balsamic Vinegar	100% Soy Sauce	100% Olive Oil	100% Wesson Oil	Hot Coffee
	100% Stand Of Coca	100% f [®] SLX 100 W	100% ater & Oil Re	pellent Red	Balsamic	1	Olive	Wesson	Hot
10 min.	Stand Of Coca Cola	100% f [®] SLX 100 W Ketchup	100% ater & Oil Re	pellent Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr 4 hour	Stand Of Coca Cola 100%	100% f [®] SLX 100 W Ketchup 100%	ater & Oil Re Mustard 100%	pellent Red Wine 100%	Balsamic Vinegar 100%	Soy Sauce	Olive Oil 100%	Wesson Oil 100%	Hot Coffee 100%
24 hr 4 hour 1 hour	100% Stand Of Coca Cola 100% 100%	100% f® SLX 100 W Ketchup 100% 100%	100% ater & Oil Re Mustard 100% 100%	Red Wine 100%	Balsamic Vinegar 100% 100%	Soy Sauce 100% 100%	Olive Oil 100% 100%	Wesson Oil 100% 100%	Hot Coffee 100% 100%
24 hr 4 hour 1 hour	100% Stand Of Coca Cola 100% 100% 100%	100% f® SLX 100 W Ketchup 100% 100% 100%	100% ater & Oil Re Mustard 100% 100% 100% 100%	Pellent Red Wine 100% 100% 100%	Balsamic Vinegar 100% 100%	Soy Sauce 100% 100% 100%	Olive Oil 100% 100%	Wesson Oil 100% 100%	Hot Coffee 100% 100%
24 hr 4 hour 1 hour	100% Stand Of Coca Cola 100% 100% 100%	100% f® SLX 100 W Ketchup 100% 100% 100% 100%	100% ater & Oil Re Mustard 100% 100% 100% 100%	Pellent Red Wine 100% 100% 100%	Balsamic Vinegar 100% 100%	Soy Sauce 100% 100% 100%	Olive Oil 100% 100%	Wesson Oil 100% 100%	Hot Coffee 100%
24 hr 4 hour 1 hour	100% Stand Of Coca Cola 100% 100% 100% Stand Of Coca	100% f® SLX 100 W Ketchup 100% 100% 100% 100% f® Impregnat	100% ater & Oil Re Mustard 100% 100% 100% 100% or	Pellent Red Wine 100% 100% 100% Red	Balsamic Vinegar 100% 100% 100% 100%	Soy Sauce 100% 100% 100% 100%	Olive Oil 100% 100% 100%	Wesson Oil 100% 100% 100% 100%	Hot Coffee 100% 100% 100%
24 hr 4 hour 1 hour 10 min.	100% Stand Of Coca Cola 100% 100% 100% Stand Of Coca Cola	100% f® SLX 100 W Ketchup 100% 100% 100% 100% f® Impregnat Ketchup	100% ater & Oil Re Mustard 100% 100% 100% 100% Or Mustard	Pellent Red Wine 100% 100% 100% Red Wine	Balsamic Vinegar 100% 100% 100% Balsamic Vinegar	Soy Sauce 100% 100% 100% 100% Soy Sauce	Olive Oil 100% 100% 100%	Wesson Oil 100% 100% 100% 100% Wesson Oil	Hot Coffee 100% 100% 100%
24 hr 4 hour 1 hour 10 min.	100% Stand Of Coca Cola 100% 100% 100% Stand Of Coca Cola 100%	100% f® SLX 100 W Ketchup 100% 100% 100% f® Impregnat Ketchup 100%	100% ater & Oil Re Mustard 100% 100% 100% or Mustard 100%	Red Wine 100% 100% 100% 100% Red Wine 100%	Balsamic Vinegar 100% 100% 100% Balsamic Vinegar	Soy Sauce 100% 100% 100% 100% Soy Sauce 100%	Olive Oil 100% 100% 100% Olive Oil 100%	Wesson Oil 100% 100% 100% 100% Wesson Oil 100%	Hot Coffee 100% 100% 100%





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TEST RESULTS – Staining Removal

% Removal

"Sante Fe Paver"

	Untreated	d 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%	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® Stone, Tile, & Masonry Protector

	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	100%	100%	100%	100%	100%	100%
4 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
1 hour	100%	100%	100%	100%	100%	100%	100%	100%	100%
10 min.	100%	100%	100%	100%	100%	100%	100%	100%	100%

Stand Off® SLX 100 Water & Oil Repellent

	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	100%	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® Impregnator

	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%

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TEST RESULTS – Staining Removal

	Untreate	d Control							
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffee
24 hr	100%	100%	85%	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 Of	f [®] Stone, Tile	, & Masonry	Protector					
	Coca Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffe
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%
	Coca	T SLA 100 W	ater & Oil Re						
	Cola	Ketchup	Mustard	Red Wine	Balsamic Vinegar	Soy Sauce	Olive Oil	Wesson Oil	Hot Coffe
24 hr		Ketchup 100%	Mustard 100%		Balsamic Vinegar 100%	Soy Sauce			Coffe
	Cola	•		Wine	Vinegar	•	Oil	Oil	100%
24 hr 4 hour 1 hour	Cola 100% 100% 100%	100% 100% 100%	100% 100% 100%	Wine 100% 100% 100%	Vinegar 100% 100% 100%	100% 100% 100%	Oil 100% 100% 100%	Oil 100% 100% 100%	100% 100% 100%
4 hour 1 hour	100% 100%	100%	100% 100%	Wine 100% 100%	Vinegar 100% 100%	100%	Oil 100% 100%	Oil 100% 100%	100% 100%
4 hour	Cola 100% 100% 100% 100%	100% 100% 100%	100% 100% 100% 100%	Wine 100% 100% 100%	Vinegar 100% 100% 100%	100% 100% 100%	Oil 100% 100% 100%	Oil 100% 100% 100%	100% 100% 100%
4 hour 1 hour	Cola 100% 100% 100% 100%	100% 100% 100% 100%	100% 100% 100% 100%	Wine 100% 100% 100%	Vinegar 100% 100% 100%	100% 100% 100%	Oil 100% 100% 100%	Oil 100% 100% 100%	100% 100% 100%
4 hour 1 hour	Cola 100% 100% 100% 100% Stand Of	100% 100% 100% 100% f [®] Impregnate	100% 100% 100% 100%	Wine 100% 100% 100% 100%	Vinegar 100% 100% 100% 100%	100% 100% 100% 100%	Oil 100% 100% 100% 100% Olive	Oil 100% 100% 100% 100%	Coffe 100% 100% 100% 100%
4 hour 1 hour 10 min.	Cola 100% 100% 100% 100% Stand Of Coca Cola	100% 100% 100% 100% f [®] Impregnate	100% 100% 100% 100% or Mustard	Wine 100% 100% 100% 100% Red Wine	Vinegar 100% 100% 100% 100% Balsamic Vinegar	100% 100% 100% 100% Soy Sauce	Oil 100% 100% 100% 100% Olive Oil	Oil 100% 100% 100% 100%	Coffe 100% 100% 100% 100% Hot Coffe
4 hour 1 hour 10 min.	Cola 100% 100% 100% 100% Stand Of Coca Cola 100%	100% 100% 100% 100% f® Impregnate Ketchup 100%	100% 100% 100% 100% or Mustard 90%	Wine 100% 100% 100% 100% Red Wine 100%	Vinegar 100% 100% 100% 100% Balsamic Vinegar 100%	100% 100% 100% 100% Soy Sauce	Oil 100% 100% 100% 100% Olive Oil 100%	Oil 100% 100% 100% 100% Wesson Oil 100%	Coffee



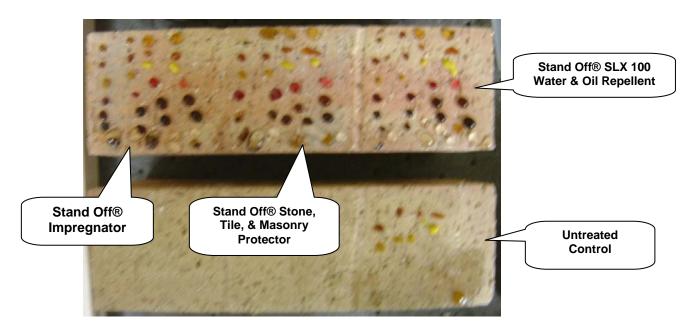


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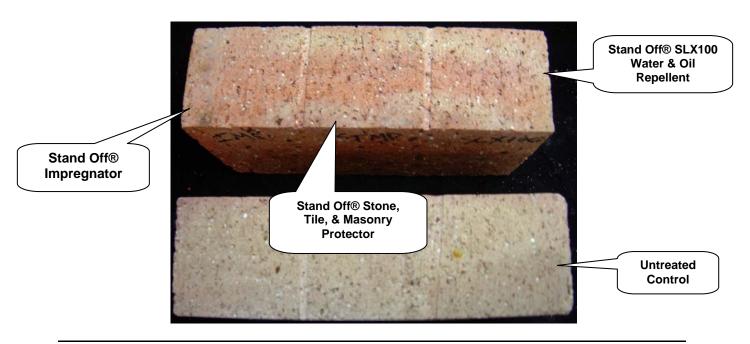
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PHOTOGRAPHS- Stain Results

"Sedona" Clay Paver; Stains applied



"Sedona" Clay Paver; Stains removed







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CONCLUSIONS – Stain Repellency

Based upon laboratory evaluations, all of the tested treatments were effective in repelling the staining agents from the samples tested.

RECOMMENDATIONS – STAIN REPELLENCY

Recommendations for stain resistance treatment for each type of clay paver submitted by Robinson Brick Company, Denver, CO, are provided in the charts below. Recommendations are based on the treatments that proved most effective for providing stain repellency on all types submitted.

Sample	Stain Repellent	Maintenance Cleaner
	Stand Off® Impregnator	
	OR	Enviro Klean [®]
All Submitted Clay Pavers	Stand Off [®] Stone, Tile & Masonry Protector	2010 All Surface Cleaner
	OR	(1:10)
	Stand Off [®] SLX100 Water & Oil Repellent	





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SECTION F – COLOR ENHANCEMENT:

DESCRIPTION OF PRODUCTS EVALUATED – Color Enhancement:

Sure Klean® Paver Enhancer – A solvent-based blend of high-quality siloxanes modified to provide excellent water repellency and color enhancement to interlocking concrete, fired clay, porous tile and many types of natural stone surfaces. Paver Enhancer penetrates and reacts with the surface to form a chemical bond, providing long-term durability, alkali resistance and superior breathability.

TEST METHOD - COLOR ENHANCEMENT

The color enhancing products were applied in accordance with the product recommendation in the 2004 PROSOCO, Inc. Product Guide.

TEST RESULTS- COLOR ENHANCEMENT

Paver Name	Sure Klean [®] Paver Enhancer
"Kiowa Paver"	0
"Ouray Paver"	1
"Sante Fe Paver"	0
"Sedona Paver"	0

Scale: 0- No enhancement; dull

1- Slight Enhancement

2- Moderate Enhancement

3- Significant Enhancement





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RECOMMENDATIONS - Color Enhancement

Recommendations for color enhancement for each type of clay paver submitted by Robinson Brick Company, Denver, CO, are provided in the chart below. Recommendations are based on the treatment that proved most effective in providing color enhancement to the samples.

Substrate	Color Enhancer
"Ouray" clay paver	Sure Klean [®] Paver Enhancer

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.

Nathan R. Colaner Technical Analyst

flat R Colm

NRC/



Laboratory Report

Pallet Tag Program Evaluation

Robinson Brick Company Denver, CO

Project No. 0405-25 PTP

Prepared For:

Jim Bergman Robinson Brick Company 1845 W. Dartmouth Avenue Denver, CO 80110-1308

Prepared By:



PROSOCO, Inc. July 2004