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ATTACHMENTS

PROSOCO Test 8

Product Data literature for all products evaluated

Material Safety Data Sheets for all products evaluated



LABORATORY REPORT



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FOR: John R. (Russ) Butler

Elgin-Butler Brick Company

1007 E. 40th St. PO Box 300069

Austin, TX 78703-0069

Paul Tessier cc:

Jack James

SUBJECT: Elgin-Butler Brick Company

Elgin, TX

DATE: December 27, 2000

PROJECT: 0009-07 PC

SAMPLES SUBMITTED:

8 styles of new clay brick, 2 sleeves each:	Size:
4435 – "Enhanced Engobe Gray"	2" x 4" x 8"
4436 – "Enhanced Engobe Gray"	2" x 4" x 8"
3300 – "Enhanced Engobe Dark Red"	2" x 4" x 8"
5500 – "Ultra Matte Glaze Cordova Crème"	2" x 4" x 8"
5400 - "Ultra Matte Glaze Indiana Gray Stone"	2" x 4" x 8"
7500 – "Matte Glaze Ivory"	2" x 4" x 8"
1200 - "Glossy Glaze Winter White"	2" x 4" x 8"
2200A - "Glossy Glaze Cobalt Blue"	2" x 4" x 8"

Elgin-Butler Brick Company 1007 E. 40th St. Submitted by:

PO Box 300069

Austin, TX 78703-0069





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PURPOSE OF TESTING:

Samples of clay brick units were submitted to PROSOCO, Inc.'s Testing Laboratory with a request to determine efficiency of cleaning mortar and an epoxy grout from new construction, the effectiveness of water repellents in repelling water absorption, the stain resistance and graffiti control of the submitted brick samples. The final request was to observe any alterations to the surface, due to cleaning or other products' applications to the submitted samples.

A. New Construction Cleaning – Sure Klean® New Construction Cleaners were evaluated for removal of laboratory applied mortar.

To simulate new construction soiling, the ability of each cleaner to remove hardened deposits of type "S" cementitious mortar was evaluated and is reported below. Mortar was applied by placing the fired clay units face down in a smooth-finished tray of prepared mortar for 10 minutes. The mortar-stained brick were cured at $75\% \pm 5\%$ RH and 70° F $\pm 5^{\circ}$ F before any cleaning tests were attempted.

Heavy deposits of mortar are removed with dry scraping after 24 hours. Sure Klean[®] Vana Trol[®], Sure Klean[®] 1910 Vana Trol[®] and Stand Off[®] Rinseless Cleaner were tested for removal of type S cementitious mortar after 3, 7, and 14 days of curing.

- **B.** Surface Alteration Sure Klean[®] 1910 Vana Trol[®], Sure Klean[®] Vana Trol[®] and Stand Off[®] Rinseless Cleaner were tested at various dilutions to determine if they would produce any surface alterations during the cleaning process. Surface alterations were evaluated visually and were based upon damage to the decorative brick surface coating, discoloration or erosion of the masonry unit.
- C. Protective Water Repellents Sure Klean[®] Weather Seal Siloxane PD, Sure Klean[®] Weather Seal Siloxane WB, Sure Klean[®] Weather Seal Blok-Guard[®] and Graffiti Control, Sure Klean[®] Weather Seal SL100, Stand Off[®] SLX100 and T-1598 were evaluated for ability to provide water repellency to the submitted samples.
- **D.** Stain Resistance Stand Off[®] SLX100 was evaluated for ability to provide stain protection to the submitted samples at increments of 5 minutes, 30 minutes, 4 hours, and 24 hours.
- **E. Graffiti Control -** Sure Klean[®] Weather Seal Blok-Guard[®] and Graffiti Control and Stand Off[®] SLX100 treatments were evaluated to determine their ability to simplify removal of graffiti staining.
- F. Epoxy Grout (Laticrete[®] Latapoxy[®]) Cleaning Stand Off[®] Rinseless Cleaner, Sure Klean[®] Asphalt and Tar Remover, Enviro Klean[®] Safety Peel, Defacer Eraser[®] Graffiti Wipe, and Sure Klean[®] Fast Acting Stripper treatments were evaluated for removal of laboratory applied Laticrete Stainless Epoxy Grout SP-100. Laticrete is a stainless, non-shrink, pigment free, colorfast epoxy grout for wall and floor installations of ceramic tile, brick and stone.



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

CLEANING PRODUCTS EVALUATED

BRICK TYPE	1910 Vana Trol [®]	Vana Trol [®]	Rinseless Cleaner
All submitted brick samples	1:6	1:6	1.1
All submitted brick samples	1:8	1:8	1.1

SURFACE ALTERATION PRODUCTS EVALUATED

BRICK TYPE	1910 Vana Trol [®]	Vana Trol [®]	Rinseless Cleaner
All submitted brick samples	1:6	1:6	4.4
All submitted brick samples	1:8	1:8	1:1

WATER REPELLENT PRODUCTS EVALUATED

BRICK TYPE	Treatment	Dilution
All submitted brick samples	SLX100	Concentrate
All submitted brick samples	SL100	Concentrate
#4435, #4436, #3300	BG&GC	Concentrate
#4435, #4436, #3300, #5500, #5400	Siloxane PD	Concentrate
#4435, #4436, #3300, #5500, #5400	Siloxane WB	1:9
#1200, #2200A	T-1598	Concentrate

STAIN REPELLENT PRODUCTS EVALUATED

BRICK TYPE	SLX100
#7500, #1200, #2200A	Concentrate

GRAFFITI CONTROL PRODUCTS EVALUATED

BRICK TYPE	SLX100	BG&GC
#7500, #1200, #2200A	Concentrate	
#4435, #4436, #3300		Concentrate

EPOXY GROUT CLEANING PRODUCTS EVALUATED

BRICK TYPE	Treatment	Dilution
All submitted brick samples	Rinseless Cleaner	Concentrate
All submitted brick samples	Asphalt & Tar Remover	Concentrate
All submitted brick samples	Safety Peel	Concentrate
All submitted brick samples	Graffiti Wipe	Concentrate
All submitted brick samples	Fast Acting Stripper	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 type S mortar from the submitted fired clay units.

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 prior to removal with high pressure water rinse using pressure rinsing equipment and chemical assistance. The removal of Type S cementitious masonry cement mortar after 3, 7, and 14 days of curing was visually evaluated.

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 4-25 parts water. Apply by brush or low-pressure spray.

Sure Klean[®] **1910 Vana Trol**[®] **-** A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, manganese and other metallic stains. 1910 Vana Trol[®] is designed to simplify rinsing, and reduces potential for efflorescence.

Stand Off[®] **Rinseless Cleaner** – A concentrated formula designed for general cleaning of masonry, ceramic tile, grout, natural stone and many other hard surfaces. Rinseless cleaner can also be used for maintaining protected surfaces.

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.

1910 Vana Trol®	5 minutes
Vana Trol [®]	5 minutes
Rinseless Cleaner	

- 4. Pressure rinse thoroughly.
- * Pressure rinsing was conducted at approximately 800 psi with a warm water flow rate of 1.9 gallons per minute.



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Test Results - New Construction Cleaning

Results are reported as % removal of mortar soiling.

4435 – Enhanced Engobe Gray

	<u>3 day</u>	<u>7 day</u>	<u>14 day</u>
SK 1910 Vana Trol [®] (1:6)	100%	100%	100%
SK 1910 Vana Trol [®] (1:8)	100%	100%	100%
SK Vana Trol [®] (1:6)	100%	100%	100%
SK Vana Trol [®] (1:8)	100%	100%	100%
SO Rinseless (1:1)	100%	95%	99%

4436 – Enhanced Engobe Gray

	<u>3 day</u>	<u>/ day</u>	<u>14 day</u>
SK 1910 Vana Trol [®] (1:6)	100%	100%	100%
SK 1910 Vana Trol [®] (1:8)	100%	100%	100%
SK Vana Trol [®] (1:6)	100%	100%	100%
SK Vana Trol® (1:8)	100%	100%	100%
SO Rinseless (1:1)	100%	95%	98%

3300 - Enhanced Engobe Dark Red

	<u>3 day</u>	<u>/ day</u>	<u>14 day</u>
SK 1910 Vana Trol [®] (1:6)	100%	100%	100%
SK 1910 Vana Trol [®] (1:8)	100%	100%	100%
SK Vana Trol [®] (1:6)	100%	100%	100%
SK Vana Trol® (1:8)	100%	100%	100%
SO Rinseless (1:1)	100%	100%	100%

5500 - Ultra Matte Glaze Cordova Creme

	<u>3 day</u>	<u>7 day</u>	<u>14 day</u>
SK 1910 Vana Trol [®] (1:6)	100%	100%	100%
SK 1910 Vana Trol [®] (1:8)	100%	100%	100%
SK Vana Trol [®] (1:6)	100%	100%	100%
SK Vana Trol® (1:8)	100%	100%	100%
SO Rinseless (1:1)	100%	100%	100%

5400 - Ultra Matte Glaze Indiana Gray Stone

	<u>3 day</u>	<u>7 day</u>	<u>14 day</u>
SK 1910 Vana Trol [®] (1:6)	100%	100%	100%
SK 1910 Vana Trol [®] (1:8)	100%	100%	100%
SK Vana Trol [®] (1:6)	100%	100%	100%
SK Vana Trol® (1:8)	100%	100%	100%
SO Rinseless (1:1)	100%	100%	100%



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Test Results - New Construction Cleaning (cont.)

	7500 – Matte G	laze Ivory	
	<u>3 day</u>	<u>7 day</u>	<u>14 day</u>
SK 1910 Vana Trol [®] (1:6)	100%	100%	100%
SK 1910 Vana Trol [®] (1:8)	100%	100%	100%
SK Vana Trol [®] (1:6)	100%	100%	100%
SK Vana Trol® (1:8)	100%	100%	100%
SO Rinseless (1:1)	100%	100%	100%
	1200 – Glossy Glaz	e Winter White	
	3 day	<u>7 day</u>	<u>14 day</u>
SK 1910 Vana Trol [®] (1:6)	100%	100%	100%
SK 1910 Vana Trol [®] (1:8)	100%	100%	100%
SK Vana Trol [®] (1:6)	100%	100%	100%
SK Vana Trol® (1:8)	100%	100%	100%
SO Rinseless (1:1)	100%	100%	100%
	2200A – Glossy Gla	ze Cobalt Blue	
	<u>3 day</u>	<u>7 day</u>	<u>14 day</u>
SK 1910 Vana Trol [®] (1:6)	100%	100%	100%
SK 1910 Vana Trol [®] (1:8)	100%	100%	100%
SK Vana Trol [®] (1:6)	100%	100%	100%
SK Vana Trol® (1:8)	100%	100%	100%
SO Rinseless (1:1)	100%	100%	100%

Photographs of submitted brick mortar soiled and subsequently cleaned:



Picture 1.1 – 2200A (Glossy Glaze) with mortar soiling.



Picture 1.2 – 2200A's results of cleaning mortar soiling after a 14-day cure.





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Picture 1.3 – 3300's (Enhanced Engobe) with mortar soiling



Picture 1.4 – 3300's results of cleaning mortar soiling after a 14-day cure.



Picture 1.5 – 5400's (Ultra Matte Glaze) with mortar soiling



Picture 1.6 – 5400's results of cleaning mortar soiling after a 14-day cure.





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CONCLUSIONS - Cleaning:

Based on the test results, all dilutions and all products performed extremely well in removing excess mortar smears on the submitted brick samples. The cleaners 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.

RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING:

Sample	Sure Klean [®] 1910 Vana Trol [®]	Sure Klean [®] Vana Trol [®]	Stand Off [®] Rinseless Cleaner
4435 – Enhanced Engobe Gray	1:8	1:8	1:1
4436 – Enhanced Engobe Gray	1:8	1:8	1:1
3300 – Enhanced Engobe Red	1:8	1:8	1:1
5500 – Ultra Matte Glaze Cordova	1:8	1:8	1:1
5400 – Ultra Matte Glaze Indiana Gray	1:8	1:8	1:1
7500 – Matte Glaze Ivory	1:8	1:8	1:1
1200 – Glossy Glaze Winter White	1:8	1:8	1:1
2200A – Glossy Glaze Cobalt Blue	1:8	1:8	1:1

The cleaners evaluated are all recommended for mortar removal and construction cleaning. Conduct all cleaning within 7 days of soiling to facilitate easier removal of excess mortar and construction dirt.

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 B – SURFACE ALTERATIONS:

DESCRIPTION OF PRODUCTS EVALUATED – Surface Alterations:

Sure Klean[®] **1910 Vana Trol**[®] **-** A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, maganese and other metallic stains. 1910 Vana Trol[®] is designed to simplify rinsing, and reduces potential for efflorescence.

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.

Stand Off[®] **Rinseless Cleaner** – A concentrated formula designed for general cleaning of masonry, ceramic tile, grout, natural stone and many other hard surfaces. Rinseless Cleaner can also be used for maintaining protected surfaces.

TEST METHODS: Surface Alterations

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

Sure Klean[®] 1910 Vana Trol[®] and Sure Klean[®] Vana Trol[®] were both evaluated at dilutions of 1:6 and 1:8. Stand Off[®] Rinseless Cleaner was evaluated at a dilution of 1:1. The following procedure was used to evaluate each of the cleaning products.

- 1. Prewet the surface with water.
- 2. Apply each cleaner at the appropriate dilutions.
- 3. Allow a 5-minute exposure time.
- 4. Reapply the products and moderately agitate with a brush.
- 5. Pressure rinse thoroughly.*
- 6. Allow the surface to dry for at least 18 hours and visually examine.
- * Pressure rinsing was conducted at approximately 800 psi with a warm water flow rate of 1.9 gallons per minute.



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TEST RESULTS – Surface Alteration Evaluation:

Substrate: 4435 – Enhanced Engobe Gray	Pigment Co	lor: Dark Gray			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
SK 1910 Vana Trol [®]	1:6	0	0	0	0
SK 1910 Vana Trol [®]	1:8	0	0	0	0
SK Vana Trol®	1:6	0	0	0	0
SK Vana Trol®	1:8	0	0	0	0
SO Rinseless	1:1	0	0	0	0
Substrate: 4436 – Enhanced Engobe Gray	Pigment Co	or: Light Gray			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
SK 1910 Vana Trol®	1:6	0	0	0	0
SK 1910 Vana Trol®	1:8	0	0	0	0
SK Vana Trol [®]	1:6	0	0	0	0
SK Vana Trol®	1:8	0	0	0	0
SO Rinseless	1:1	0	0	0	0
Substrate: 3300 – Enhanced Engobe	Pigment Co	or: Dark Red			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
SK 1910 Vana Trol®	1:6	0	0	0	0
SK 1910 Vana Trol®	1:8	0	0	0	0
SK Vana Trol®	1:6	0	0	0	0
SK Vana Trol [®]	1:8	0	0	0	0
SO Rinseless	1:1	0	0	0	0

Scale used for reporting results of all categories

0 - no change

3 – 50-74% change – heavy

1 – 1-24% change – slight

4 - 75-100% change - excessive

2 - 25-49% change - moderate



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Substrate: 5500 – Ultra					
Matte Glaze	Pigment Col	or: Cordova Cr	eme		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
SK 1910 Vana Trol [®]	1:6	0	0	0	0
SK 1910 Vana Trol [®]	1:8	0	0	0	0
SK Vana Trol [®]	1:6	0	0	0	0
SK Vana Trol®	1:8	0	0	0	0
SO Rinseless	1:1	0	0	0	0
Substrate: 5400 – Ultra Matte Glaze	Pigment Col	or: Indiana Gra	y Stone		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
SK 1910 Vana Trol [®]	1:6	0	0	0	0
SK 1910 Vana Trol [®]	1:8	0	0	0	0
SK Vana Trol [®]	1:6	0	0	0	0
SK Vana Trol®	1:8	0	0	0	0
SO Rinseless	1:1	0	0	0	0
Substrate: 1200 – Glossy Glaze	Pigment Col	or: Winter Whit	e		
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
SK 1910 Vana Trol®	1:6	0	0	0	0
SK 1910 Vana Trol [®]	1:8	0	0	0	0
SK Vana Trol [®]	1:6	0	0	0	0
SK Vana Trol [®]	1:8	0	0	0	0
SO Rinseless	1:1	0	0	0	0

Scale used for reporting results of all categories

0 - no change

3 - 50-74% change - heavy

1 - 1-24% change - slight

4 - 75-100% change - excessive

2 - 25-49% change - moderate



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Substrate: 7500 – Matte Glaze Ivory	Pigment Color:	lvory			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
SK 1910 Vana Trol®	1:6	0	0	0	0
SK 1910 Vana Trol®	1:8	0	0	0	0
SK Vana Trol®	1:6	0	0	0	0
SK Vana Trol®	1:8	0	0	0	0
SO Rinseless	1:1	0	0	0	0
Substrate: 2200A – Glossy Glaze	Pigment Color:	Cobalt Blue			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
SK 1910 Vana Trol®	1:6	0	0	0	0
SK 1910 Vana Trol®	1:8	0	0	0	0
SK Vana Trol®	1:6	0	0	0	0
SK Vana Trol®	1:8	0	0	0	0
SO Rinseless	1:1	0	0	0	0

Scale used for reporting results of all categories

0 – no change

3 - 50-74% change - heavy

1 - 1-24% change - slight

4 – 75-100% change – excessive

2 – 25-49% change – moderate

CONCLUSIONS – Surface Alteration:

There were no visual signs of surface alterations, due to the cleaning process, on the eight types of brick. The cleaners at the specific dilutions were able to effectively clean off the mortar without damaging the integrity of the bricks' glazed surfaces.

RECOMMENDATIONS - Surface Alteration:

The cleaners evaluated are all recommended for mortar removal and construction cleaning. Conduct all cleaning within 7 days of soiling to facilitate easier removal of excess mortar and construction dirt.

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. Surface alteration (color, film)
- 3. Ease of application

DESCRIPTIONS OF PRODUCTS EVALUATED - Protective Water Repellents:

Sure Klean Weather Seal Siloxane PD - A low odor, alkaline stable, water-based blend of silanes and oligomeric alkoxysiloxanes. Weather Seal Siloxane PD is supplied pre-diluted and is designed for use on concrete and clay masonry surfaces. Weather Seal Siloxane PD penetrates more deeply than conventional water or solvent-based 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.

Stand Off[®] **SLX100 Water and Oil Repellent** – Combines water and oil repellency to prevent staining by waterborne or oily substances and many types of graffiti. This modified "neat" silane system offers invisible protection and low volatility.

Sure Klean [®] **Weather Seal SL100 Water Repellent** – A modified, "neat" silane system that offers invisible protection and low volatility. Weather Seal SL100 protects concrete and masonry surfaces against water and waterborne contaminants.

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

Sure Klean Weather Seal T-1598 – A modified silane system that offers invisible protection and low volatility. T-1598 protects against water and waterborne contaminants on concrete, brick, and masonry surfaces.

SAMPLE PREPARATION - Protective Water Repellents:

The submitted brick were cut, oven dried and allowed to reabsorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of one 10-second immersion. All treatments were allowed to cure for their specified time before testing. Siloxane WB, Blok-Guard[®] & Graffiti Control, SLX100, SL100 and T-1598 were allowed to cure for 72 hours, prior to testing. Siloxane PD was allowed to cure for 14 days prior to testing.



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TEST METHODS - Protective Water Repellents:

Capillary Water Absorption Test: PROSOCO Test 8: 24 hours

Placing the treated and untreated faces, facedown on a water-saturated sponge tested the samples' ability or inability to resist capillary uptake. Weights were recorded at intervals of 10-minutes, 30-minutes, 60-minutes, and 24 hours.

Water absorption is determined by comparison of the dry weight to the weights at the prescribed intervals. All water absorption information on treated samples are then compared to the absorption information of the untreated control samples to determine each treatments' effectiveness in preventing water absorption.

TEST RESULTS - Protective Water Repellents:

Water Absorption: Capillary Uptake Testing

"4435 – Enhanced Engobe Gray"	% Absorption	% Effectiveness
Untreated Control	6.09%	0%
SLX100	0.03%	99.5%
SL100	0.02%	99.3%
BG&GC	0.05%	99.1%
WB 1:9	0.02%	99.7%
Siloxane PD	0.60%	90.2%
"4436 – Enhanced Engobe Gray"	% Absorption	% Effectiveness
Untreated Control	5.83%	0%
SLX100	0.03%	99.4%
SL100	0.04%	99.2%
BG&GC	0.04%	99.3%
WB 1:9	0.04%	99.4%
Siloxane PD	1.21%	79.2%
"3300 – Enhanced Engobe Dark Red"	% Absorption	% Effectiveness
Untreated Control	0.93%	0%
SLX100	0.07%	92.7%
SL100	0.07%	92.5%
BG&GC	0.06%	93.2%
WB 1:9	0.07%	92.3%
Siloxane PD	0.10%	88.9%
"5500 – Ultra Matte Glaze Cordova Crème"	% Absorption	% Effectiveness
Untreated Control	4.90%	0%
SLX100	0.06%	98.9%
SL100	0.03%	99.4%
WB 1:9	0.02%	99.6%
Siloxane PD	0.07%	98.7%



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"5400 – Ultra Matte Glaze Indiana Gray Stone"	% Absorption	% Effectiveness
Untreated Control	5.10%	0%
SLX100	0.02%	99.6%
SL100	0.03%	99.4%
WB 1:9	0.02%	99.7%
Siloxane PD	0.04%	99.2%
"7500 – Matte Glaze Ivory"	% Absorption	% Effectiveness
Untreated Control	3.84%	0%
SLX100	0.02%	99.4%
SL100	0.03%	99.3%
"1200 – Glossy Glaze Winter White"	% Absorption	% Effectiveness
Untreated Control	3.06%	0%
SLX100	0.02%	99.5%
SL100	0.03%	99.2%
T-1598	0.04%	99.0%
"22004 Classy Class Cabalt Plus"	% Absorption	% Effectiveness
"2200A – Glossy Glaze Cobalt Blue"	% Absorption	/0 LifeCtiveness
Untreated Control	4.44%	0%
-	<u> </u>	
Untreated Control	4.44%	0%

CONCLUSIONS - Protective Water Repellents:

The laboratory test results indicate that all submitted samples benefited from PROSOCO's water repellents. All of the treated surfaces had improved water repellency when compared to the untreated surfaces. The results of the Capillary Uptake test most clearly show the benefits of utilizing PROSOCO's water repellents. With the assistance of the PROSOCO water repellents, most substrates were able to reach a water repellency efficiency of nearly 99 percent or better.

Upon visual evaluation of the water-repellent treatments, after application and following the prescribed cure time, there were no visible signs of streaking or residues on the Engobe or Matte bricks. PROSOCO's water repellents did not alter the appearance of the Engobe or Matte submitted bricks. SLX100 and SL100 did leave a residue on the surface of the glossy bricks (1200 and 2200A). The water repellents were not able to efficiently penetrate the glossy glaze surface, therefore leaving a residue of SLX100 on the surface of the brick sample after curing. T-1598 is an effective water repellent on the glossy glazed bricks; leaving the surfaces of glossy bricks shiny and unaltered. T-1598 offers water repellency to the surrounding mortar of the glossy glazed bricks. The beading characteristics of mortar treated with T-1598 will not be easily seen but T-1598 will repel water and waterborne contaminants on mortar as well as on the glossy glazed bricks.



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RECOMMENDATIONS - Protective Water Repellents:

All of the above treatments are being recommended for application, for enhanced water repellency of the submitted substrates. More specifically refer to the table below for the most efficient water repellent for each of the submitted brick types.

Type of Brick	Most Effective Water Repellents
4435 - Enhanced Engobe Gray	SLX100, SL100, BGGC and WB 1:9
4436 - Enhanced Engobe Gray	SLX100, SL100, BGGC and WB 1:9
3300 - Enhanced Engobe Dark Red	SLX100, SL100, BGGC and WB 1:9
5400 - Ultra Matte Glaze Indiana Gray stone	SLX100, SL100, and WB 1:9
5500 - Ultra Matte Glaze Cordova Crème	SLX100, SL100, and WB 1:9
7500 - Matte Glaze Ivory	SLX100 and SL100
1200 - Glossy Glaze Winter White	T-1598
2200A - Glossy Glaze Cobalt Blue	T-1598

It must be pointed out that in any installation, the bricks 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: Stain Resistance Testing

The testing described below evaluates the suitability of stain protection treatments.

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

- 1. Ease of application
- 2. Color change
- 3. Removal of staining substances

DESCRIPTIONS OF PRODUCT EVALUATED - Protective Stain Repellent:

Stand Off[®] SLX100 Water and Oil Repellent – Combines water and oil repellency to prevent staining by waterborne or oily substances and many types of graffiti. This modified "neat" silane system offers invisible protection and low volatility.

DESCRIPTIONS OF PRODUCT EVALUATED – Stain Removal:

Stand Off Rinseless – A concentrated formula designed for general cleaning of masonry, ceramic tile, grout, natural stone and many other hard surfaces. Rinseless cleaner can also be used for maintaining protected surfaces.

Food and Oil Products Evaluated:

- 1. Vegetable oil
- 2. Canola oil
- 3. Transmission fluid
- 4. Brake Fluid
- 5. Motor oil
- 6. Red wine
- 7. Coffee
- Barbecue sauce

SAMPLE PREPARATION - Protective Stain Repellents:

The submitted brick were cut; oven dried and allowed to reabsorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of one 10-second immersion. The SLX100 treatment was allowed to cure for 72 hours prior to testing.

TEST METHODS - Protective Stain Repellents:

Staining Resistance

The soiling agents were allowed to dwell on the treated and untreated substrate for 24 hours, 4 hours, 1 hour, and 5 minutes. The test areas were then cleaned with Rinseless 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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Brick Types for Stain Resistance Testing:

- 7500 Matte Glaze Ivory
- 1200 Glossy Glaze Winter White
- 2200A Glossy Glaze Cobalt Blue

Test Results - Stain Removal and Repellency

All submitted samples treated with Stand Off[®] SLX100 exhibited stain resistance and easy removal of the soiling products, using Rinseless Cleaner.

Conclusion - Stain Resistance:

When considering the four areas of criteria: ease of application, color change, effectiveness of prevention and removal of stain(s), PROSOCO's Stand Off[®] SLX100 was easy to apply, did not alter the color or appearance of the Matte glazed sample and provided stain removal with ease. SLX100 did alter the appearance of the Glossy Glaze Cobalt Blue brick but did provide a surface that was easily cleaned. Stand Off[®] Rinseless Cleaner also performed well in these evaluations and is recommended for testing on job site installation.

Recommendation – Stain Resistance:

Stand Off[®] SLX100 Water and Oil Repellent is being recommended as a stain protection treatment on 7500 –Matte Glaze Ivory. Stand Off[®] Rinseless Cleaner is also being recommended for maintenance cleaning.

Apply all products in accordance with the manufacturer's recommendation provided on container labels and product data sheets. On-site testing should be conducted using Stand Off[®] SLX100 and Stand Off[®] Rinseless Cleaner. See product literature for additional application and product information.





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SECTION E: GRAFFITI CONTROL

DESCRIPTION OF PRODUCTS EVALUATED – Graffiti Control:

Stand Off SLX100 Water and Oil Repellent – Combines water and oil repellency to prevent staining by waterborne or oily substances and many types of graffiti. This modified "neat" silane system offers invisible protection and low volatility.

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

DESCRIPTION OF PRODUCTS EVALUATED – 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.

SAMPLE PREPARATION – Protective Graffiti Barrier:

The PROSOCO products were applied to submitted substrates using a single saturating 10 second immersion. Markers and spray paint were applied as graffiti agents 7 days following the application of Sure Klean Weather Seal Blok-Guard[®] & Graffiti Control and Stand Off SLX100 Water and Oil Repellent. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents.

Products Evaluated:

<u>Graffiti Protection:</u> <u>Dilution:</u>

Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control concentrate Stand Off[®] SLX100 Water and Oil Repellent concentrate

Graffiti Removal:

Defacer Eraser® Graffiti Wipe concentrate

Graffiti Agents:

Green "Sanford King Size" permanent marker Blue "Sanford King Size" permanent marker Red "Sanford King Size" permanent marker Blue "Krylon" enamel spray paint Red "Krylon" enamel spray paint

Test Method

The graffiti agents were applied to the various submitted brick. After allowing the graffiti to cure for 24 hours, graffiti removal was attempted, using Defacer Eraser® Graffiti Wipe.



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Evaluated Brick for Graffiti Control:

SLX100		В	G&GC
•	7500	•	4435
•	1200	•	4436
•	2200A	•	3300

Graffiti Wipe-Graffiti Removal Procedure:

- 1. Apply the Graffiti Wipe liberally to a towel or piece of cloth. Using moderate agitation, scrub the surface with saturated cloth until the graffiti is removed.
- 2. Wipe the surface with a dry cloth to remove excess Graffiti Wipe and graffiti residue.
- 3. If necessary, rinse the surface with hot or cold water to remove any remaining product residue.

Test Results- Graffiti Control

The results were found to vary depending on the PROSOCO product used on the brick types submitted. The percentages represent the percent removal of the graffiti products. Refer to the tables below for further information.

Brick Type: 7500 - Matte Glaze Ivory

	Blue Spray Paint	Red Spray Paint	Red Marker	Green Marker	Black Marker	Blue Marker
Untreated Control	100%	100%	100%	100%	100%	100%
SLX100	100%	100%	100%	100%	100%	100%

Brick Type: 1200 - Glossy Glaze Winter White

	Blue Spray Paint	Red Spray Paint	Red Marker	Green Marker	Black Marker	Blue Marker
Untreated Control	100%	100%	100%	100%	100%	100%
SLX100	100%	100%	100%	100%	100%	100%

Brick Type: 2200A – Glossy Glaze Cobalt Blue

	Blue Spray Paint	Red Spray Paint	Red Marker	Green Marker	Black Marker	Blue Marker
Untreated Control	100%	100%	100%	100%	100%	100%
SLX100	100%	100%	100%	100%	100%	100%

Brick Type: 4435 – Enhanced Engobe Gray

Enter 1 year 1 too Enthancou Engoso Gray								
	Blue Spray Paint	Red Spray Paint	Red Marker	Green Marker	Black Marker	Blue Marker		
Untreated Control	90%	90%	50%	50%	50%	50%		
Blok Guard [®] & Graffiti Control	99%	99%	90%	85%	85%	90%		



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Brick Type: 4436 – Enhanced Engobe Gray

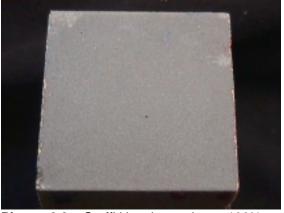
	Blue Spray Paint	Red Spray Paint	Red Marker	Green Marker	Black Marker	Blue Marker
Untreated Control	80%	92%	55%	55%	55%	55%
Blok Guard [®] & Graffiti Control	97%	99%	95%	80%	80%	80%

Brick Type: 3300 - Enhanced Engobe Dark Red

	Blue Spray Paint	Red Spray Paint	Red Marker	Green Marker	Black Marker	Blue Marker
Untreated Control	95%	95%	50%	50%	50%	50%
Blok Guard [®] & Graffiti Control	99%	99%	100%	100%	97%	92%



Picture 2.1 - Graffiti on 4435 w/ Blok-Guard[®] & Graffiti Control treatment



Picture 2.2 – Graffiti has been almost 100% removed from the BGGC surface, leaving virtually nothing residual on the substrate.



Picture 2.3 – Graffiti has been about 70% removed from the untreated surface, leaving mostly the permanent marker residual graffiti behind.





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Conclusion-Graffiti Control

From the results above, it is obvious that Stand Off[®] SLX100 or Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control treatment improves the amount of graffiti removed on the submitted samples. Blok-Guard[®] & Graffiti Control must only be applied to the surfaces of the Enhanced Engobe bricks. Blok-Guard[®] & Graffiti Control does not penetrate into the glazed or ultra matte samples, and is not recommended to be used on these types of bricks.

Recommendation-Graffiti Control

Stand Off[®] SLX100 Water and Oil Repellent and Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control are both being recommended for treatment of the Engobe and Matte submitted samples. Blok-Guard[®] & Graffiti Control is being recommended for treatment on dull glazed and unglazed surfaces. SLX100 is being recommended for treatment on the dull glazed and matte samples. Presently there is not a PROSOCO product that can be recommended on the glossy glazed bricks, due to lack of penetration of the impermeable surface.





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SECTION F: EPOXY GROUT CLEANING

DESCRIPTION OF PRODUCTS EVALUATED – Epoxy Grout Cleaning

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove Laticrete statements. Stainless Epoxy Grout SP-100 from the submitted fired clay units.

Laticrete[®]'s Latapoxy[®] Stainless Epoxy Grout SP-100 was prepared in compliance with the manufacturer's instructions. It was then applied to the brick surface and allowed to cure for 16 hours, 24 hours, 3 days, 7 days, and 14 days prior to removal with PROSOCO's products and high pressure water rinse using pressure rinsing equipment. The removal of gray Latapoxy's Stainless Epoxy Grout SP-100 was visually evaluated.

Stand Off[®] **Rinseless Cleaner** – A concentrated formula designed for general cleaning of masonry, ceramic tile, grout, natural stone and many other hard surfaces. Rinseless cleaner can also be used for maintaining protected surfaces.

Sure Klean Asphalt & Tar Remover – A highly efficient multipurpose solvent cleaner for masonry and concrete. It is easy to apply and water rinsable. Ideal for cleaning and surface preparation, Asphalt & Tar Remover will not damage most masonry or concrete.

Enviro Klean [®] **Safety Peel** – A solvent paste with a mild citrus odor that contains no methylene chloride or methanol. Designed for removal of paint, graffiti and clear coatings, Enviro Klean Safety Peel is a "slow-working" paint remover. Usually just one application dissolves multiple layers.

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 thixothropic stripping compound designed for removing coatings and epoxies from masonry, wood and metal surfaces. It also removes oil, grease and waxes from concrete decks, tile and terrazzo floors.

TEST METHOD – Epoxy Grout Cleaning:

Chemical cleaners were evaluated using the following procedure:

Stand Off[®] Rinseless Cleaner

- 1. Wet the surface to be cleaned with prepared Rinseless Cleaner.
- 2. Allow Rinseless Cleaner to remain on the surface for 4 minutes.
- 3. Gently agitate the surface until soiling is removed.
- 4. Remove residual liquid and soiling, using pressure washing equipment to pressure rinse.

Asphalt & Tar Remover

- 1. Apply Asphalt & Tar Remover liberally to the dry surface.
- 2. Allow the cleaner to dwell on the surface for 4 minutes.
- 3. Reapply cleaner, brushing vigorously on the soiled area.
- 4. Rinse thoroughly with as much water as possible.



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Enviro Klean[®] Safety Peel

- 1. Apply Safety Peel liberally to the dry surface.
- 2. Allow Safety Peel to dwell on the surface for up to 24 hours, with 2 additional applications of Safety Peel to keep the surface and cleaner moist.
- 3. Remove paste and any dissolved soiling from surface.
- 4. Rinse surface with a pressure washer, rinsing with water.

Graffiti Wipe

- 1. Apply the Graffiti Wipe liberally to a towel or piece of cloth. Using moderate agitation, scrub the surface with saturated cloth until the graffiti is removed.
- 2. Wipe the surface with a dry cloth to remove excess Graffiti Wipe and graffiti residue. If necessary, rinse the surface with hot or cold water to remove any remaining product residue.

Fast Acting Stripper

- 1. Apply a thick coating of Fast Acting Stripper.
- 2. Allow stripper to dwell on the surface for 45 minutes.
- 3. Remove stripper and residue using pressure rinsing equipment.

Test Results – Epoxy Grout Cleaning:

Substrate: 2200A - Glossy Glaze Cobalt Blue

% Removal of Epoxy Grout

	16 hours	24 hours	3 days	7 days	14 days
Rinseless	0%	0%	0%	0%	0%
Asphalt &Tar	80%	45%			
Graffiti Wipe	20%				
Safety Peel	5%	5%			
Fast Acting	100%	100%	98%**	97%**	95%**

Substrate: 4435 – Enhanced Engobe Gray

% Removal of Epoxy Grout

	16 hours	24 hours	3 days	7 days	14 days
Rinseless	0%	0%	0%	0%	0%
Asphalt &Tar	80%	45%			
Graffiti Wipe	20%				
Safety Peel	5%	5%			
Fast Acting	100%	100%	100%	100%	100%

Substrate: 4436 – Enhanced Engobe Gray

% Removal of Epoxy Grout

	16 hours	24 hours	3 days	7 days	14 days
Rinseless	0%	0%	0%	0%	0%
Asphalt &Tar	80%	45%			
Graffiti Wipe	20%				
Safety Peel	5%	5%			
Fast Acting	100%	100%	100%	100%	100%

^{**}A dull epoxy film still remained that could not be removed.



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Substrate: 1200 - Glossy Glaze Winter White

% Removal of Epoxy Grout

	16 hours	24 hours	3 days	7 days	14 days
Rinseless	0%	0%	0%	0%	0%
Asphalt &Tar	80%	45%			
Graffiti Wipe	20%				
Safety Peel	5%	5%			
Fast Acting	100%	100%	98%**	97%**	95%**

Substrate: 5500 - Glossy Glaze Cordova Creme

% Removal of Epoxy Grout

	16 hours	24 hours	3 days	7 days	14 days
Rinseless	0%	0%	0%	0%	0%
Asphalt &Tar	80%	45%			
Graffiti Wipe	20%				
Safety Peel	5%	5%			
Fast Acting	100%	100%	100%	98%**	95%**

Substrate: 5400 – Ultra Matte Glaze Indiana Gray Stone

% Removal of Epoxy Grout

	16 hours	24 hours	3 days	7 days	14 days
Rinseless	0%	0%	0%	0%	0%
Asphalt &Tar	80%	45%			
Graffiti Wipe	20%				
Safety Peel	5%	5%			
Fast Acting	100%	100%	100%	97%**	95%**

Substrate: 3300 - Enhanced Engobe Dark Red

% Removal of Epoxy Grout

	16 hours	24 hours	3 days	7 days	14 days
Rinseless	0%	0%	0%	0%	0%
Asphalt &Tar	80%	45%			
Graffiti Wipe	20%				
Safety Peel	5%	5%			
Fast Acting	100%	100%	100%	100%	100%

Substrate: 7500 – Matte Glaze Ivory

% Removal of Epoxy Grout

	16 hours	24 hours	3 days	7 days	14 days
Rinseless	0%	0%	0%	0%	0%
Asphalt &Tar	50%	25%			
Graffiti Wipe	0%				
Safety Peel	5%	5%			
Fast Acting	100%	100%	97%**	95%**	93%**

^{**}A dull epoxy film still remained, that could not be removed.

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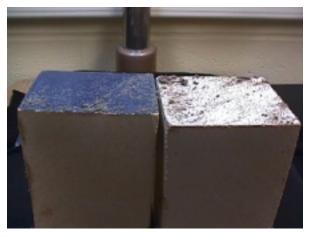
Picture 3.1 - Epoxy grout soiling on all bricks.



Picture 3.2 - Epoxy grout successfully removed from bricks.



Picture 3.3 – Close-up of epoxy grout soiling on 3300 and 4435.



Picture 3.4 - Close-up of epoxy grout soiling of 2200A and 5400.



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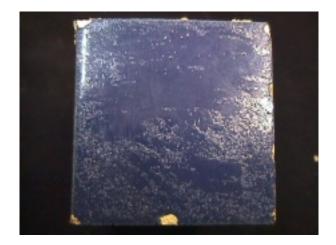


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Picture 3.5 – This is a close-up of the residual epoxy on 1200's surface.



Picture 3.6 – This shows the remaining residual epoxy on the surface of the brick even after 4 – 30 minute dwellings of Fast Acting Stripper on the 14-day cure of 2200A.

CONCLUSION – EPOXY GROUT CLEANING:

From the above results, Sure Klean[®] Fast Acting Stripper is clearly the most efficient in the removal of the Latapoxy's Stainless Epoxy Grout SP-100 from the submitted samples. If the Laticrete is allowed to set on the substrate for greater than 24 hours, there is increased potential for residual epoxy to be left on the substrate's surface.

RECOMMENDATION - EPOXY GROUT CLEANING:

Sure Klean® Fast Acting Stripper is being recommended as the cleaner for Latapoxy's Stainless Epoxy Grout SP-100. Cleaning time and intensity can be minimized if cleaning is initiated within 24 hours of grout application.

Based upon PROSOCO's lab results, warm water and soap were unable to remove the epoxy grout. The epoxy grout sets up quite fast and makes cleaning the underlying substrate more difficult. Job-site testing with Fast Acting Stripper is recommended for better determination on laticrete cleaning time.

Heidi Turner Technical Analyst

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HMT/csm



Laboratory Report

Pallet Card Evaluation

Elgin-Butler Brick Company Elgin, TX

Project No. 0009-07 PC

Prepared For:

John R. (Russ) Butler Elgin-Butler Brick Company 1007 E. 40th St. P.O. Box 300069 Austin, TX 78703-006

Prepared By:



PROSOCO, Inc. December 2000