



PROSOCO, Inc.

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

Product Data literature for all products evaluated





PROSOCO, Inc.

James Holt

FOR: Paul Tessier cc:

SUBJECT: Ragland Clay Products, LLC. Ragland, AL

December 20, 2004 DATE:

PROJECT: 0410-11 PTP

SAMPLES SUBMITTED: 5 types of clay brick

| Brick Type | Brick Type Finish | |
|---------------------|----------------------------|------------------|
| "Full Range Ragtex" | Wire-Cut | 7 ½" x 3½" x 2½" |
| "Montrose" | Mud Coated | 7 ½" x 3½" x 2½" |
| "Orleans Blend" | Slurry Flashed | 7 ½" x 3½" x 2½" |
| "Red Select" | Dieskin | 7 ½" x 3½" x 2½" |
| "Sandestin" | Fire Clay and Sand Coating | 7 ½" x 3½" x 2½" |

Submitted by: James Holt

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PURPOSE OF TESTING:

Five types of clay brick 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 and graffiti repellents, suitable for clay brick were evaluated.

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

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 Type N cementitious mortar. The wet mortar-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 were removed with dry scraping after 24 hours. Prepared cleaning solutions were then evaluated for their effectiveness in removing residual Type N mortar after 7 and 21 days of curing.

B. Limiting Surface Alterations – Enviro Klean[®] Safety Klean and either Sure Klean[®] 600 Detergent or Sure Klean[®] Vana Trol[®] 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 brick.

<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, Sure Klean[®] Weather Seal Siloxane WB Concentrate (1:9) and (1:14), and Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control 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.



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PRODUCTS EVALUATED FOR CLEANING AND LIMITING SURFACE ALTERATIONS

| SAMPLE | TREATMENT | DILUTION |
|-------------------------------------|--|----------|
| "Full Range Ragtex" "Red Select" | Sure Klean [®] 600 Detergent | 1:6, 1:8 |
| "Sandestin" | Enviro Klean [®] Safety Klean | 1:2, 1:3 |
| "Montrose" | Sure Klean [®] Vana Trol [®] | 1:6, 1:8 |
| "Orleans Blend" | Enviro Klean [®] Safety Klean | 1:2, 1:3 |

WATER REPELLENT PRODUCTS EVALUATED

| SAMPLE | TREATMENT | DILUTION |
|-----------------------------|---|-------------|
| | 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 |

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 |

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



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SECTION A – NEW CONSTRUCTION CLEANING

DESCRIPTION OF PRODUCTS EVALUATED – New Construction Cleaning

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove Type N mortar from the submitted fired clay brick.

Type N cementitious mortar was prepared in compliance with the manufacturers instructions, applied to the brick surface and allowed to cure for 7 and 21 days. Mortar removal was accomplished using chemical assistance and a high-pressure water rinse with pressure rinsing equipment. The removal of Type N cementitious masonry mortar was visually evaluated after 7 and 21 days of curing.

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.

Sure Klean[®] 600 Detergent – A general purpose, concentrated 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.

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.

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. | |
|----|---|--|
| | Safety Klean | |
| | 600 Detergent | |
| | Vana Trol [®] | |
| Δ | Pressure rinse thoroughly * | |

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

| "Full Range Ragtex" | | | |
|--|----------|-------|--------|
| Product | Dilution | 7 day | 21 day |
| Sure Klean [®] 600 Detergent | 1:6 | 95% | 95% |
| | 1:8 | 95% | 95% |
| Enviro Klean [®] Safety Klean | 1:2 | 95% | 90% |
| | 1:3 | 95% | 90% |

"Montrose"

| Product | Dilution | 7 day | 21 day |
|--|----------|-------|--------|
| Sure Klean [®] Vana Trol [®] | 1:6 | 100% | 95% |
| | 1:8 | 100% | 90% |
| Enviro Klean [®] Safety Klean | 1:2 | 100% | 100% |
| | 1:3 | 100% | 100% |

"Orleans Blend"

| Product | Dilution | 7 day | 21 day |
|--|----------|-------|--------|
| Sure Klean [®] Vana Trol [®] | 1:6 | 100% | 100% |
| | 1:8 | 100% | 100% |
| Enviro Klean [®] Safety Klean | 1:2 | 100% | 100% |
| | 1:3 | 100% | 100% |

"Red Select"

| Product | Dilution | 7 day | 21 day |
|--|----------|-------|--------|
| Sure Klean [®] 600 Detergent | 1:6 | 100% | 100% |
| | 1:8 | 100% | 100% |
| Enviro Klean [®] Safety Klean | 1:2 | 100% | 100% |
| | 1:3 | 100% | 100% |

"Sandestin"

| Product | Product Dilution | | 21 day | | |
|--|------------------|-----|--------|--|--|
| Sure Klean [®] 600 Detergent | 1:6 | 95% | 95% | | |
| Sure Reall 600 Detergent | 1:8 | 95% | 95% | | |
| Enviro Klean [®] Safety Klean | 1:2 | 95% | 95% | | |
| Enviro Riean Salety Riean | 1:3 | 90% | 90% | | |





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PHOTOGRAPHS - Cleaning

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"Red Select" Clay Brick; 21 day cleaning







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CONCLUSIONS – New Construction Cleaning

Based on the test results, all PROSOCO, Inc. products tested performed well in removing excess mortar from the submitted clay brick. These products performed well in removing the mortar soils even after allowing the mortar to remain on the surface of the brick for 21 days under ideal curing conditions.

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 water pressure, water volume, and surface agitation 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 submitted by Ragland Clay Products, LLC, Ragland, AL, 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 N, 21 Days) |
|-------------------------------------|--|
| "Full Range Ragtex" "Red Select" | Sure Klean [®] 600 Detergent (1:8) OR Enviro Klean [®] Safety Klean (1:3) |
| "Montrose" "Orleans Blend" | Sure Klean [®] Vana Trol [®] (1:8) OR Enviro Klean [®] Safety Klean (1:3) |
| "Sandestin" | Enviro Klean [®] Safety Klean (1:3) |

Excessive water pressure, water volume, and surface agitation 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 B – LIMITING SURFACE ALTERATIONS

DESCRIPTION OF PRODUCTS EVALUATED – Limiting Surface Alterations

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

Sure Klean[®] **600 Detergent** – A general purpose, concentrated 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.

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.

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.
 3-5 minutes

 600 Detergent
 3-5 minutes

 Vana Trol[®]
 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: "Full Range Ragtex" | | | | |
|--|------------------------------------|---------------------------|----------------------------|-----------------|----------|
| 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 | | Pign | nent Color: "Montr | rose" | |
| 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: "Orleans Blend" | | | | |
| 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 | | Pigm | ent Color: "Red S | elect" | |
| 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: "Sandestin" | | | | |
| Product | Dilution | Surface Finish Removal | Substrate Deterioration | Color Change | Staining |
| Sure Klean [®] 600 Detergent | 1:6 | 2 | 0 | 0 | 0 |
| Sure Klean [®] 600 Detergent | 1:8 | 2 | 0 | 0 | 0 |
| Enviro Klean [®] Safety Klean | 1:2 | 1 | 0 | 0 | 0 |
| | | | | | 0 |

2 - change - moderate





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CONCLUSIONS – Limiting Surface Alterations

Test results indicate that Enviro Klean[®] Safety Klean and Sure Klean[®] Vana Trol[®] caused slight to moderate surface finish removal from the "Sandestin" clay brick. None of the products tested caused any surface alterations on the rest of the clay brick. 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 water pressure, water volume, and surface agitation 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 submitted by Ragland Clay Products, LLC, Ragland, AL, 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 |
|-------------------------------------|--|
| "Full Range Ragtex" "Red Select" | Sure Klean [®] 600 Detergent (1:8) OR Enviro Klean [®] Safety Klean (1:3) |
| "Montrose" "Orleans Blend" | Sure Klean [®] Vana Trol [®] (1:8) OR Enviro Klean [®] Safety Klean (1:3) |
| "Sandestin" | Enviro Klean [®] Safety Klean (1:3) |

Excessive water pressure, water volume, and surface agitation 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

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, pre-cast concrete, wood and porous masonry. Blok-Guard[®] & Graffiti Control penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering. Blok-Guard[®] & Graffiti Control 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.

SAMPLE PREPARATION - Protective Water Repellents:

The submitted brick were cut, 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.

 \underline{A} = "Average" correlates to less than or equal to 50% of the maximum untreated absorption.

<u>BA</u> = "Below Average" correlates to greater than 50% of the maximum untreated absorption.

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

A rating of <u>AA</u> Above Average water repellent performance would require loss of no more than 5 ml X 20% = 1 ml.

A rating of <u>A</u> 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+.





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TEST RESULTS: Protective Water Repellents

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

<u>AA</u> = Above Average

 $\underline{A} = Average$

<u>BA</u> = Below Average

| "Full Range Ragtex" | Results in mL loss | Ranking |
|--|--------------------|-----------|
| Untreated Control | 0.5 | |
| Weather Seal Siloxane PD | 0.0 | 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 | AA |
| "Montrose" | Results in mL loss | Ranking |
| Untreated Control | 0.5 | |
| Weather Seal Siloxane PD | 0.0 | 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> |
| "Orleans Blend" | Results in mL loss | Ranking |
| Untreated Control | 0.1 | |
| 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> |
| "Red Select" | Results in mL loss | Ranking |
| Untreated Control | 0.3 | |
| 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> |
| "Sandestin" | Results in mL loss | Ranking |
| Untreated Control | 0.1 | |
| 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 | AA |





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PHOTOGRAPH – Water Repellents

Sure Klean[®] Sure Klean[®] Sure Klean[®] Untreated Sure Klean[®] Weather Weather Seal Control Weather Seal Weather Seal Blok-Guard[®] & Seal Siloxane WB Siloxane WB Siloxane PD **Graffiti Control** 1:9 1:14

"Red Select" Clay Brick; RILEM Testing





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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. In addition, Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control enhanced the appearance of the clay brick.

RECOMMENDATIONS – Protective Water Repellents:

Recommendations for water repellent treatments for each type of clay brick submitted by Ragland Clay Products, LLC, Ragland, AL, 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 |
|--------------------------|---|
| All Submitted Clay Brick | Sure Klean [®] Weather Seal Siloxane WB Concentrate (1:9) OR (1:14) OR Sure Klean [®] Weather Seal Siloxane PD OR Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control |

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.

Graffiti Wipe



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TEST RESULTS – Graffiti Control

| | "Full Range R | Ragtex" Clay | Brick | | |
|--|---------------|-----------------|-----------------|---------------|-------------------|
| 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 | 95% | 100% | 100% | 100% | 99% |
| Graffiti Wipe | 95% | 100% | 100% | 100% | 99% |
| | "Montros | e" Clay Bric | k | | |
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 100% | 99% | 99% | 100% | 100% |
| Graffiti Wipe | 100% | 99% | 99% | 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% |
| i | "Orleans B | end" Clay B | rick | | |
| Untreated 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% |
| 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% |
| "Red Select" Clay Brick | | | | | |
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 100% | 100% | 99% | 100% | 100% |
| Graffiti Wipe | 100% | 100% | 99% | 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 Wine | 100% | 100% | 100% | 100% | 1000/ |

%Removal

100%

100%

100%

100%

100%





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TEST RESULTS – Graffiti Control

%Removal

| "Sandestin" Clay Brick | | | | | |
|--|-----------|-----------------|-----------------|---------------|-------------------|
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 50% | 90% | 90% | 80% | 78% |
| Graffiti Wipe | 50% | 90% | 90% | 95% | 81% |
| Blok-Guard [®] & Graffiti Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 80% | 90% | 95% | 95% | 90% |
| Graffiti Wipe | 90% | 90% | 95% | 95% | 93% |

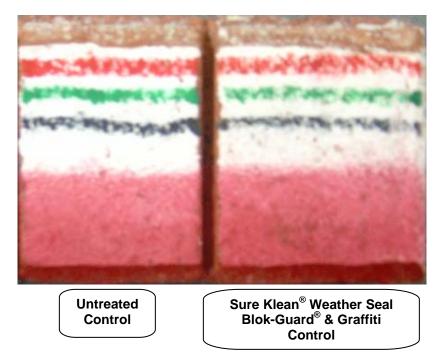




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PHOTOGRAPHS – Graffiti Control

"Sandestin" Clay Brick Before Graffiti Removal



"Sandestin" 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. Also, caution should be taken when cleaning the "Sandestin" clay brick as excessive water pressure, water volume, and surface agitation combined to remove approximately 10% of the decorative finish on both the Blok-Guard[®] & Graffiti Control and untreated areas.

RECOMMENDATIONS – GRAFFITI CONTROL

Recommendations for graffiti control treatment for each type of clay brick submitted by Ragland Clay Products, LLC, Ragland, AL, 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.

To facilitate easier removal of graffiti staining, while minimizing any potential surface alterations to the decorative finish, use less surface agitation and lower water pressure.

Christopher A. Moore Project Testing Laboratory Technician CAM



Laboratory Report

Pallet Tag Program Evaluation

Ragland Clay Products, LLC Ragland, AL

Project No. 0410-11 PTP

Prepared For:

Ragland Clay Products, LLC P.O. Box 160 61 Industrial Drive Ragland, AL 35131

Prepared By:



PROSOCO, Inc. December 2004