



PALLET CARD PROGRAM LABORATORY REPORT

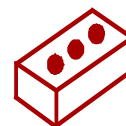


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ATTACHMENTS

ASTM C 67 Immersion Testing

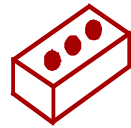
Technical Services TECH Note RILEM Test Method No. II.4

Product Data literature for all products evaluated

Material Safety Data Sheets for all products evaluated



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FOR: Rick Sorrels
cc: Paul Tessier
Renee DeGrand

SUBJECT: US Brick – Elgin Plant 1
Elgin, Texas

DATE: April 3, 2000

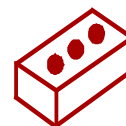
PROJECT: 9908-16 PC

SAMPLES SUBMITTED: Eight new red clay bricks
(Plantation Rose)
Size: 9 ½" x 2 ½" x 3"
Eight new brown clay bricks
(Lancaster)
Size: 9 ½" x 2 ½" x 3"

SAMPLES SUBMITTED BY: Rick Sorrells
U. S. Brick



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PURPOSE OF TESTING:

Samples of two clay brick types were submitted to PROSOCO's Testing Laboratory with a request to determine if application of the products evaluated will produce any adverse effects during new construction cleaning operations. Additionally, the effectiveness of water repellents, suitable for concrete brick masonry, will be evaluated.

- A. Adverse Effects** - Sure Klean[®] 600 Detergent, Sure Klean[®] 101 Lime Solvent and Sure Klean[®] Vana Trol[®] were tested at various dilutions to determine if they would produce any adverse effects during the cleaning process. Adverse effects were evaluated visually and were based upon damage to the surface coating, if present, discoloration or erosion/etching of the masonry unit.
- B. Protective Water Repellents** - Sure Klean[®] Weather Seal Siloxane PD, Sure Klean[®] Custom Masonry Sealer, and Sure Klean[®] Weather Seal Siloxane WB (1:9) were evaluated for their ability to provide water repellency to the submitted samples.

ADVERSE EFFECTS PRODUCTS EVALUATED

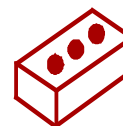
Sample	Vana Trol [®]	600 Detergent	101 Lime Solvent
All submitted brick samples	1:4	1:4	1:4
	1:6	1:6	1:6
	1:8	1:8	1:8

WATER REPELLENT PRODUCTS EVALUATED

Sample	Weather Seal Siloxane PD	Custom Masonry Sealer	Weather Seal Siloxane WB (1:9)
All submitted brick samples	Concentrate	Concentrate	Concentrate



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SECTION A - ADVERSE EFFECTS:

DESCRIPTION OF PRODUCTS EVALUATED - Adverse Effects:

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 grey, 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, concentrated acidic cleaner for brick, tile and concrete surfaces. 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® 101 Lime Solvent - A general purpose, concentrated acidic cleaner for dark-colored brick, tile and concrete surfaces. 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.

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TEST METHOD - Adverse Effects:

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

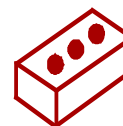
Sure Klean® VanaTrol®, 600 Detergent and 101 Lime Solvent were evaluated at dilutions of 1:4, 1:6 and 1:8. The following procedure was used:

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 cold water flow rate of 2.1 gallons per minute.



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TEST RESULTS - Adverse Effects Evaluation:

Plantation Rose		Lancaster	
	<u>Effects</u>		<u>Effects</u>
Vana Trol®		Vana Trol®	
1:4	Slight removal of color	1:4	No adverse effects
1:6	Slight removal of color	1:6	No adverse effects
1:8	no adverse effects	1:8	No adverse effects
600 Detergent		600 Detergent	
1:4	No adverse effects	1:4	No adverse effects
1:6	No adverse effects	1:6	No adverse effects
1:8	No adverse effects	1:8	No adverse effects
101 Lime Solvent		101 Lime Solvent	
1:4	Slight removal of color	1:4	No adverse effects
1:6	Slight removal of color	1:6	No adverse effects
1:8	No adverse effects	1:8	No adverse effects

CONCLUSIONS - Adverse Effects:

VanaTrol® (1:8), 600 Detergent (1:4, 1:6, 1:8), and 101 Lime Solvent (1:8) did not produce any adverse effects on the Plantation Rose. There was some slight color removal in the higher concentrations of VanaTrol® and 101 Lime Solvent.

VanaTrol® (1:4, 1:6, 1:8), 600 Detergent (1:4, 1:6, 1:8), and 101 Lime Solvent (1:4, 1:6, 1:8) did not produce any adverse effects on the Laramie samples.

RECOMMENDATIONS - Adverse Effects:

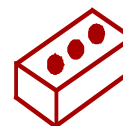
Based on the above test results, VanaTrol® (1:8), 600 Detergent (1:4, 1:6, 1:8), or 101 Lime Solvent (1:8) are recommended for general purpose and/or maintenance cleaning on the Plantation Rose. Care should be exercised when using VanaTrol® and 101 Lime Solvent at dilutions lower than 1:8. On the Lancaster brick, VanaTrol® (1:4, 1:6, 1:8), 600 Detergent (1:4, 1:6, 1:8), or 101 Lime Solvent (1:4, 1:6, 1:8) are recommended for new construction clean-up to remove excess mortar and construction related soiling.

To minimize potential for surface erosion, remove excess mortar, grout or similar cementitious soiling as soon as practical. 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.

RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING:



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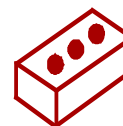
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Sample	Sure Klean [®] 101 Lime Solvent	Sure Klean [®] 600 Detergent	Sure Klean [®] Vana Trol [®]
Plantation Rose	1:8	1:4, 1:6, 1:8	1:8
Lancaster	1:4, 1:6, 1:8	1:4, 1:6, 1:8	1:4, 1:6, 1:8



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SECTION B - PROTECTIVE WATER REPELLENTS:

DESCRIPTIONS OF PRODUCTS EVALUATED - Protective Water Repellents:

Sure Klean® Weather Seal Siloxane WB (1:9) - A clear, self-emulsifying siloxane water repellent concentrate for weatherproofing architectural brick and other porous masonry. Immediately prior to application of Weather Seal Siloxane WB was diluted with 9 parts by volume fresh water for this testing. Weather Seal Siloxane WB penetrates porous masonry and imparts a water-repellent barrier against water intrusion, and resulting efflorescence, leaching, mildew, atmospheric staining, freeze/thaw spalling, etc. When applied properly Weather Seal Siloxane WB (diluted with 9 parts fresh water by volume) protects exterior masonry exposed to normal weathering conditions without altering the natural color or texture of the treated surfaces. Formulated to meet all known VOC restrictions.

Sure Klean® Custom Masonry Sealer - A clear, solvent-based silicone elastomer formulated to weatherproof architectural concrete block, custom masonry units, cast stone, precast concrete, wood and porous masonry without altering the natural appearance. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering.

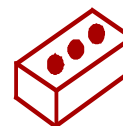
Sure Klean® Weather Seal Siloxane PD (concentrate)- A clear, ready-to-use oligomeric alkylalkoxy siloxane penetrating water repellent for use on concrete, brick and clay tile surfaces. Treatment with Weather Seal Siloxane provides superior protection against moisture intrusion and resulting efflorescence, leaching, mildew and atmospheric staining, and freeze/thaw spalling. When applied properly Weather Seal Siloxane PD protects exterior masonry exposed to normal weathering without altering the natural color or texture of treated surfaces. Formulated to meet all known VOC restrictions.

SAMPLE PREPARATION - Protective Water Repellents:

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



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TEST METHODS - Protective Water Repellents:

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

The water absorption tube test was performed. This evaluation simulates 98 mile per hour wind driven rain conditions for a period of 20 minutes. 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:

1. AA = “Above Average” correlates to less than or equal to 20% of the maximum untreated absorption. Example, if the “untreated control” result is less than 5 milliliters (> 5 ml), then “above average” performance would have to be less than or equal to 1 milliliters.
2. A = “Average” correlates to less than or equal to 50% of the maximum untreated absorption.
3. BA = “Below Average” correlates to greater than 50% of the maximum untreated absorption.

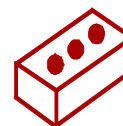
TEST RESULTS - Protective Water Repellents:

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

Brick Style	Treatment	Tube Test Results - 5.0 ml	Ranking
Lancaster	Untreated Control	3.5	
Lancaster	Weather Seal Siloxane PD	0.0	AA
Lancaster	Weather Seal Siloxane WB (1:9)	0.0	AA
Lancaster	Custom Masonry Sealer	2.0	BA
Plantation Rose	Untreated Control	1.0	----
Plantation Rose	Weather Seal Siloxane PD	0.0	AA
Plantation Rose	Weather Seal Siloxane WB (1:9)	0.0	AA
Plantation Rose	Custom Masonry Sealer	0.0	AA



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CONCLUSIONS - Protective Water Repellents:

Based upon laboratory evaluations, Siloxane WB (1:9) and Siloxane PD ranked above average in water repellent protection on both submitted styles. Custom Masonry Sealer ranked below average in water repellent protection on the Lancaster style, and above average on the Plantation Rose style.

RECOMMENDATIONS - Protective Water Repellents:

Based on the above test results, either Siloxane WB (1:9), Siloxane PD, or Custom Masonry Sealer is recommended for the Plantation Rose style. Either Siloxane WB (1:9), or Siloxane PD is recommended for the Lancaster style. When using either Siloxane WB (1:9) or Siloxane PD, apply in a wet-on-wet saturating application to a clean, dry surface. When using Custom Masonry Sealer, apply as a single saturating application to a clean, dry surface.

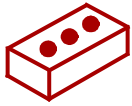
Apply in accordance with the manufacturer's recommendation provided on container labels and product data sheets. On-site testing should be conducted to determine the most appropriate water repellent product and procedures for a particular project. See product literature for additional application and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

Dena M. Sampel
Technical Services Analyst

DMS/

ALL SAMPLES SUPPLIED FOR THE ABOVE EVALUATION WILL BE DISPOSED OF NINETY (90) DAYS AFTER THE ISSUE DATE OF THIS REPORT. IF SAMPLES ARE TO BE RETAINED FOR ADDITIONAL TESTING OR RETURNED TO THE SENDER, PROVIDE WRITTEN INSTRUCTIONS TO THE LABORATORY WITHIN NINETY DAYS (90) OF THE ISSUE DATE OF THIS REPORT.

Recommendations made within this report are based on laboratory test applications and observations. Final determination of the suitability of a product and/or procedure should be made only after thorough job testing on actual surfaces.



Laboratory Report

Pallet Card Evaluation

**US Brick – Elgin Plant 1
Elgin, TX**

***Project No.* 9908-16 PC**

Prepared For:

Rick Sorrells

East Highway 290

Elgin, TX 78621

Prepared By:



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