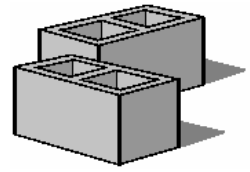




PALLET TAG PROGRAM LABORATORY REPORT



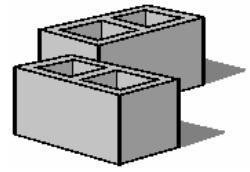
PROSOCO, Inc.

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Submitted Information

For: Brian Koenings
cc: Steve Dean
John Bourne

Subject: Northfield Block, Co. – Joliet Plant (An Old Castle Company)
Joliet, IL

Date:

Project: 0509-19 PTP

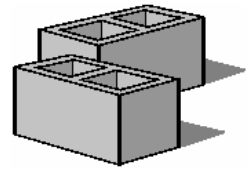
Samples Submitted: 4 types of “Quik-Brik” CMU’s

Block	Name	Color	Integral Water Repellent	Size
“Quik-Brik” CMU	“Promenade Blend #1”	Dark Red/Charcoal	Dry-Block [®] II	4” x 16” x 2”
“Quik-Brik” CMU	“Promenade Blend #2”	Dark Red/Charcoal	Dry-Block [®] II	4” x 16” x 2”
“Quik-Brik” CMU	“Promenade Blend #3”	Dark Red/Charcoal	Dry-Block [®] II	4” x 16” x 2”
“Quik-Brik” CMU	“Promenade Blend #4”	Dark Red/Charcoal	Dry-Block [®] II	4” x 16” x 2”

Submitted by: Brian Koenings



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Purpose of Testing

Four integrally colored “Quik-Brik” CMU’s, all with large, small and fine aggregate were submitted for testing using PROSOCO’s new construction cleaning, water repellent and graffiti control products.

New Construction Cleaning – Sure Klean® Concrete Brick Cleaner was evaluated for removal of laboratory applied mortar and to determine the optimal concentration of cleaner that leaves the external surface looking most like the natural through-body color of the CMU.

To simulate new construction soiling, all concrete masonry units (CMU’s) are placed on a bench with finished surface facing upward. Hollow cylinders measuring 50 mm in diameter and 75 mm tall are positioned on top of each CMU and filled with a wet mixture of Type S mortar. The wet, mortar-filled cylinder is allowed to remain in contact with the CMU’s for 10 minutes before removal.

Heavy deposits of mortar are removed with dry scraping after 24 hours. Prepared cleaning solutions are then evaluated for their effectiveness in removing residual Type S mortar staining after 3, 7 and 14 days of curing.

Color uniformity was evaluated by comparing aggregate exposure and surface pigment alternation/removal of each cleaned surface compared to the natural through-body color of the CMU.

Aggregate Exposure is the visual examination comparing aggregate exposure of the interior, through-body section of CMU to surfaces cleaned with selected product(s) at given dilutions.

Surface Pigment Alteration/Removal is the visual examination comparing the pigmentation of the interior, through-body section of the CMU to surfaces cleaned with selected product(s) at given dilutions.

The following is the scale used for reporting results of both categories:

- | | |
|--|---------------------------------------|
| 0 – Worst match to through-body | 3 – Good match to through-body |
| 1 – Poor match to through-body | 4 – Best match to through-body |
| 2 – Fair match to through-body | |

NOTE: When cleaning integrally colored CMU.

Integrally colored concrete masonry units (CMU’s) frequently have high amounts of pigments concentrated on the surface of the cured concrete unit. Variation of surface pigment concentrations from one CMU to the next creates a blotchy appearance in the completed wall. Allowed to remain on the surface of the CMU, the weakly bound pigment will weather and streak, further detracting from the appearance of the completed CMU wall.

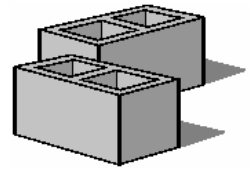
In addition to removing excess mortar and construction related soiling, the goal of any cleaning operation undertaken on an integrally colored CMU should include removal of unnaturally high concentrations of surface pigment. By revealing the natural through-body color on the integrally colored unit, the overall color uniformity and weathering resistance of the completed CMU wall is improved.

Protective Water Repellents – Sure Klean® Custom Masonry Sealer was evaluated for its ability to provide water repellency to the submitted samples.

Graffiti Control – Sure Klean® Custom Masonry Sealer was evaluated for its ability to control graffiti on the submitted samples. Sure Klean® Fast Acting Stripper and Defacer Eraser® Graffiti Wipe were evaluated for their ability to remove graffiti from the submitted samples.



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Products Evaluated

Products Evaluated for Cleaning and Color Uniformity

Block Type	Product	Dilution
All Submitted "Quik-Brik" CMU's	Sure Klean® Concrete Brick Cleaner	1:2, 1:3

Water Repellent Products Evaluated

Block Type	Product	Dilution
All Submitted "Quik-Brik" CMU's	Sure Klean® Custom Masonry Sealer	Concentrate

Graffiti Control Products Evaluated

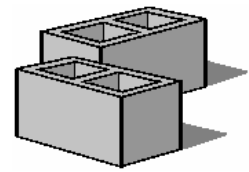
Block Type	Product	Dilution
All Submitted "Quik-Brik" CMU's	Sure Klean® Custom Masonry Sealer	Concentrate

Graffiti Removal Products Evaluated

Block Type	Product	Dilution
All Submitted "Quik-Brik" CMU's	Sure Klean® Fast Acting Stripper	Concentrate
	Defacer Eraser® Graffiti Wipe	Concentrate



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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 "Quik-Brik" CMU's while providing the best color uniformity when compared to the through-body color of the CMU's.

Type S mortar was prepared in compliance with the manufacturer's instructions, applied to the CMU surface and allowed to cure for 3, 7, and 14 days. Mortar removal was accomplished using chemical assistance and a high-pressure water rinse with pressure rinsing equipment. The removal of Type S masonry mortar was visually evaluated after 3, 7, and 14 days of curing. A visual examination was also made to determine the optimal dilution of the tested cleaners that provide the best color uniformity when compared to the through-body color of the CMU's.

Description of Products Evaluated – New Construction Cleaning

Sure Klean® Concrete Brick Cleaner – Removes common construction and atmospheric staining from custom masonry and other architectural concrete surfaces. This general-purpose, non-etching acidic cleaner removes rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Concrete Brick Cleaner adds depth to colors and brightens white matrices and exposed aggregate.

Test Method – New Construction Cleaning

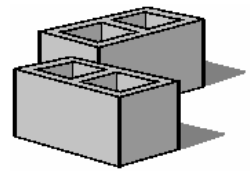
Dilution ratios refer to mixtures of parts concentrated cleaner: parts fresh water. Chemical cleaners were evaluated using the following procedure:

1. Pre-wet the surface with water.
2. Apply at the appropriate dilutions.
3. Allow appropriate dwell time, as specified.
 Sure Klean® Concrete Brick Cleaner 3-5 minutes
4. Reapply the product and moderately agitate with a brush.
5. Pressure rinse thoroughly.*
6. Allow the sample to dry for at least 18 hours and visually examine.
7. Break the sample in half and compare the through-body surfaces to the cleaned surfaces for the best match.

* Pressure rinsing was conducted at approximately 700-800 psi with a warm water flow rate of 8 gallons per minute.



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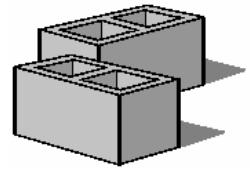
Test Results – New Construction Cleaning

% removal

“Promenade Blend #1”				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Concrete Brick Cleaner	1:2	99%	98%	95%
Sure Klean® Concrete Brick Cleaner	1:3	98%	98%	95%
“Promenade Blend #2”				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Concrete Brick Cleaner	1:2	98%	98%	95%
Sure Klean® Concrete Brick Cleaner	1:3	98%	98%	95%
“Promenade Blend #3”				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Concrete Brick Cleaner	1:2	98%	98%	90%
Sure Klean® Concrete Brick Cleaner	1:3	98%	90%	90%
“Promenade Blend #4”				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Concrete Brick Cleaner	1:2	98%	98%	95%
Sure Klean® Concrete Brick Cleaner	1:3	98%	98%	95%



PALLET TAG PROGRAM LABORATORY REPORT



Test Results – Color Uniformity

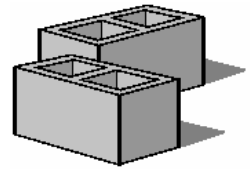
Substrate: "Quik-Brik" CMU		Pigment Color: "Promenade Blend #1"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Concrete Brick Cleaner	1:2	4	4
Sure Klean® Concrete Brick Cleaner	1:3	4	4
Substrate: "Quik-Brik" CMU		Pigment Color: "Promenade Blend #2"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Concrete Brick Cleaner	1:2	4	4
Sure Klean® Concrete Brick Cleaner	1:3	4	4
Substrate: "Quik-Brik" CMU		Pigment Color: "Promenade Blend #3"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Concrete Brick Cleaner	1:2	3	3
Sure Klean® Concrete Brick Cleaner	1:3	4	4
Substrate: "Quik-Brik" CMU		Pigment Color: "Promenade Blend #4"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Concrete Brick Cleaner	1:2	3	3
Sure Klean® Concrete Brick Cleaner	1:3	4	4

Scale used for reporting results of both categories

- | | |
|--|---------------------------------------|
| 0 – Worst match to through-body | 3 – Good match to through-body |
| 1 – Poor match to through-body | 4 – Best match to through-body |
| 2 – Fair match to through-body | |



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Photographs – New Construction Cleaning

“Promenade Blend #2”; 3 Day Cleaning

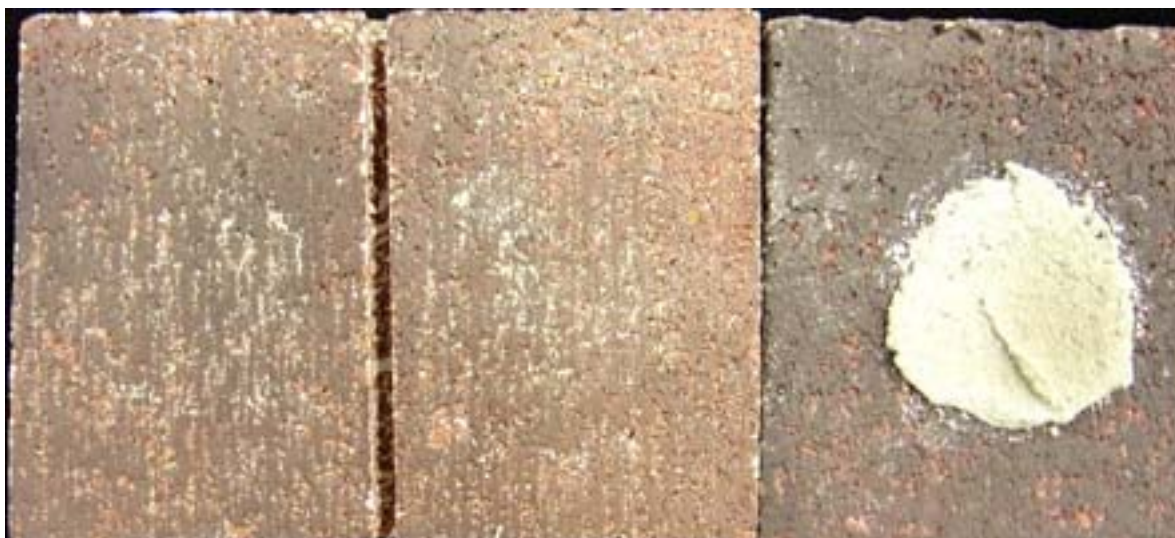


Sure Klean® Concrete
Brick Cleaner 1:2

Sure Klean® Concrete
Brick Cleaner 1:3

Untreated Control

“Promenade Blend #2”; 7 Day Cleaning



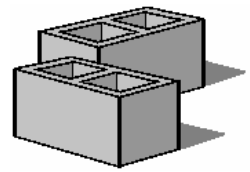
Sure Klean® Concrete
Brick Cleaner 1:2

Sure Klean® Concrete
Brick Cleaner 1:3

Untreated Control



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Photographs – New Construction Cleaning

“Promenade Blend #2”; 14 Day Cleaning



Sure Klean® Concrete
Brick Cleaner 1:2

Sure Klean® Concrete
Brick Cleaner 1:3

Untreated Control

Photograph – Color Uniformity

“Promenade Blend #2”; Through-body



Sure Klean® Concrete
Brick Cleaner 1:2

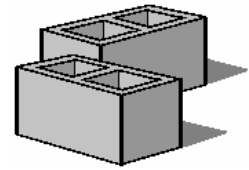
Sure Klean® Concrete
Brick Cleaner 1:3

Through-
body

Untreated Control



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Conclusions – New Construction Cleaning

Based on the test data, all of the submitted samples were efficiently cleaned with Sure Klean® Concrete Brick Cleaner. The higher concentration of Sure Klean® Concrete Brick Cleaner removed slight to moderate concentrations of pigmented matrix, exposing small and large aggregate. The lower concentration of Sure Klean® Concrete Brick Cleaner removed slight concentrations of pigmented matrix, exposing small and large aggregate.

Recommendations – New Construction Cleaning

Recommendations for cleaning for each type of “Quik-Brik” CMU submitted by Northfield Block, Co. – Joliet Plant, Joliet, IL are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while providing sufficient color uniformity.

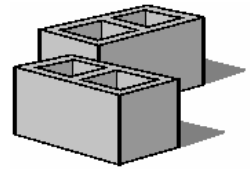
Sample	New Construction Cleaning (Type S mortar, 14 day cleaning)
“Promenade Blend #1” “Promenade Blend #2”	Sure Klean® Concrete Brick Cleaner (1:2) OR (1:3)
“Promenade Blend #3” “Promenade Blend #4”	Sure Klean® Concrete Brick Cleaner (1:3)

The most appropriate cleaner and dilution should be determined on the specific job-site, and will be dependent primarily on the nature and severity of soiling present at that location.

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 cleaning product and procedures for a particular project. See product literature for additional application and product information.



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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

Description of Products Evaluated – Protective Water Repellents

Sure Klean® Custom Masonry Sealer – A clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, cast stone, architectural concrete block, pre-cast concrete, wood and porous masonry. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering.

Sample Preparation – Protective Water Repellents

The submitted CMU's were scored and allowed to dry for at least 24 hours prior to treatment. Sure Klean® Custom Masonry Sealer was applied in a wet-on-wet brushing application in accordance with the current PROSOCO, Inc. Product Data Sheet instructions and allowed to cure for at least 24 hours prior to testing.

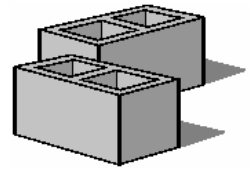
Test Methods – Protective Water Repellents

Water Absorption Tube Test: RILEM II.4, 60 mph, 20 Minutes

The water absorption tube test simulating wind driven rain conditions was performed. This test simulates 60 mile per hour wind driven rain conditions for a period of 20 minutes. See Technical Services TECH Note RILEM Tube Test Procedures.



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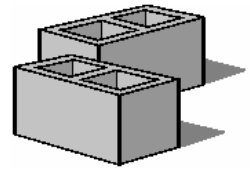
Test Results – Protective Water Repellents

Water Absorption Tube Test: RILEM II.4, 60 mph, 20 Minutes

		Results
"Promenade Blend #1"		
Untreated Control		<40 mph
Custom Masonry Sealer		60 mph
"Promenade Blend #2"		
Untreated Control		<40 mph
Custom Masonry Sealer		60 mph
"Promenade Blend #3"		
Untreated Control		<40 mph
Custom Masonry Sealer		60 mph
"Promenade Blend #4"		
Untreated Control		<40 mph
Custom Masonry Sealer		60 mph



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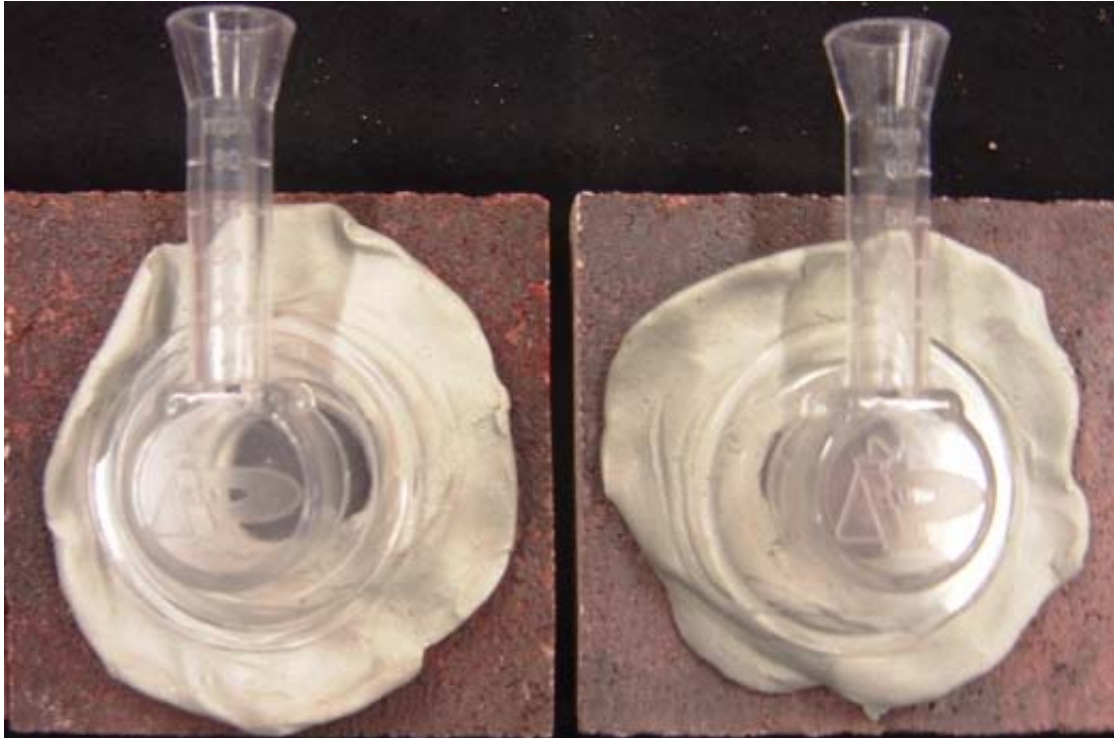


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Photographs – Protective Water Repellents

“Promenade Blend #2”; RILEM Testing

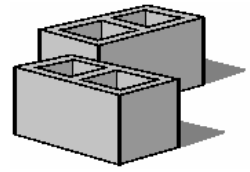


Sure Klean® Custom Masonry Sealer

Untreated Control



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Conclusions – Protective Water Repellents

Based upon laboratory evaluations, Sure Klean® Custom Masonry Sealer provided excellent water repellency to each of the submitted samples. In addition, Sure Klean® Custom Masonry Sealer provided a slight color enhancement to the submitted samples.

Recommendations – Protective Water Repellents

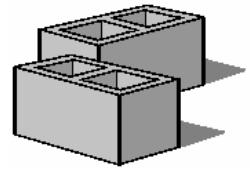
Recommendations for water repellency treatment for each type of “Quik-Brik” CMU submitted by Northfield Block, Co. – Joliet Plant, Joliet, IL are provided in the chart below. Recommendations are based on the treatment that proved most effective and can provide water repellency on all types submitted.

Sample	Protective Water Repellents
All Submitted “Quik-Brik” CMU’s	Sure Klean® Custom Masonry Sealer

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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Graffiti Control

These trials were conducted to determine the optimal graffiti control treatment for the submitted "Quik-Brik" CMU samples.

Description of Products Evaluated – Graffiti Control

Graffiti Control Treatments

Sure Klean® Custom Masonry Sealer – A clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, cast stone, architectural concrete block, pre-cast concrete, wood and porous masonry. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering.

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, split-face concrete block, wood and metal surfaces.

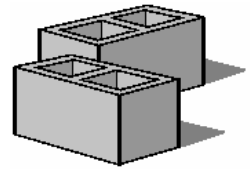
Sure Klean® Fast Acting Stripper – A thixotropic stripping compound formulated specifically for removal of high strength paints and coatings such as epoxies, polyurethanes, and floor enamels. Additionally, Fast Acting Stripper dissolves most spray paints, marking pens, lacquers and other graffiti.

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.

Sections of the “Quik-Brik” CMU’s were treated with Sure Klean® Custom Masonry Sealer in a wet-on-wet brushing application in accordance with PROSOCO, Inc.’s Product Data Sheet 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 of Sure Klean® Custom Masonry Sealer. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents, using either Defacer Eraser® Graffiti Wipe or Sure Klean® Fast Acting Stripper.

Test Method – Graffiti Control

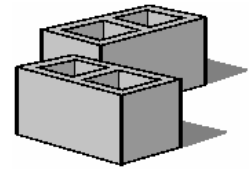
Chemical cleaners were evaluated using the following procedure:

1. Apply the product to a dry surface, soiled with graffiti.
2. Allow appropriate dwell time:
 - Graffiti Wipe 5 minutes
 - Fast Acting Stripper20 minutes
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 700-800 psi with a warm water flow rate of 8 gallons per minute.



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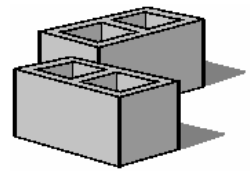
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Test Results – Graffiti Control

“Promenade Blend #1”					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	80%	95%	80%	90%	86%
Graffiti Wipe	40%	20%	80%	80%	55%
Custom Masonry Sealer	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	98%	100%	90%	100%	97%
Graffiti Wipe	98%	50%	85%	98%	83%
“Promenade Blend #2”					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	90%	90%	70%	90%	85%
Graffiti Wipe	60%	70%	70%	90%	73%
Custom Masonry Sealer	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	99%	100%	100%	100%	100%
Graffiti Wipe	99%	100%	99%	100%	100%
“Promenade Blend #3”					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	50%	90%	90%	90%	80%
Graffiti Wipe	60%	40%	70%	90%	65%
Custom Masonry Sealer	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	98%	100%	100%	100%	100%
Graffiti Wipe	100%	70%	90%	100%	90%
“Promenade Blend #4”					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	90%	95%	80%	90%	89%
Graffiti Wipe	30%	60%	70%	70%	58%
Custom Masonry Sealer	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	99%	100%	100%	100%	100%
Graffiti Wipe	100%	70%	90%	90%	88%



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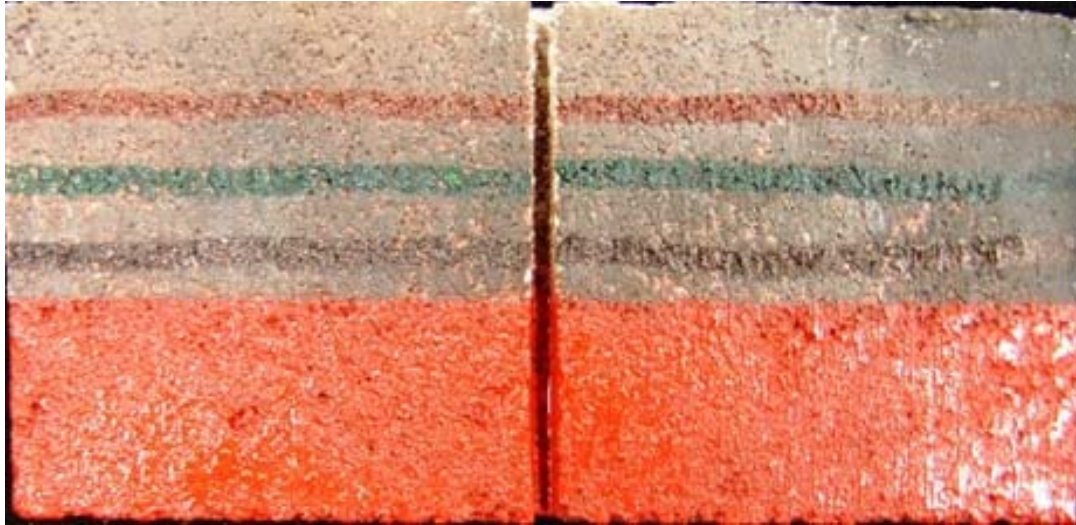


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Photographs – Graffiti Control

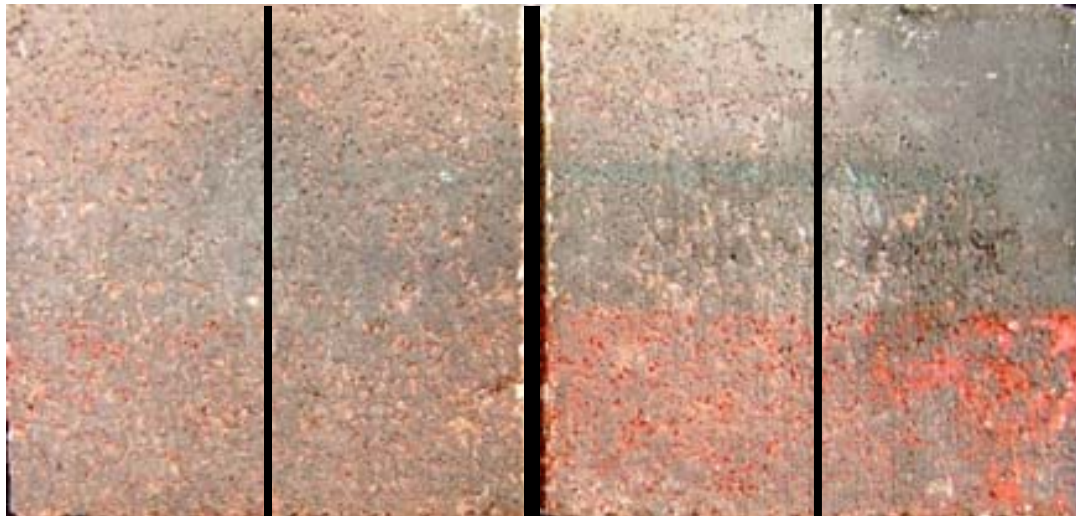
“Promenade Blend #2”; Graffiti Applied



Sure Klean[®] Custom Masonry Sealer

Untreated Control

“Promenade Blend #2”; Graffiti Removed



Sure Klean[®] Fast
Acting Stripper

Defacer Eraser[®]
Graffiti Wipe

Sure Klean[®] Fast
Acting Stripper

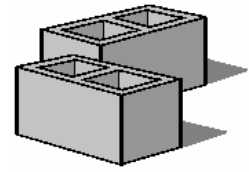
Defacer Eraser[®]
Graffiti Wipe

Sure Klean[®] Custom Masonry Sealer

Untreated Control



PALLET TAG PROGRAM LABORATORY REPORT



Conclusions – Graffiti Control

Based upon laboratory evaluations, graffiti removal was improved when the submitted samples were treated with Sure Klean® Custom Masonry Sealer prior to graffiti application. In addition, Sure Klean® Custom Masonry Sealer provided a slight to moderate color enhancement to the submitted samples.

Recommendations – Graffiti Control

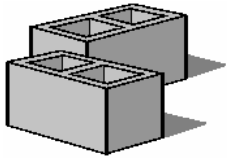
Recommendations for graffiti control treatment for each type of “Quik-Brik” CMU submitted by Northfield Block, Co. – Joliet Plant, Joliet, IL are provided in the chart below. Recommendations are based on the treatment that proved most effective for providing graffiti repellency and the product that was most effective at removing the graffiti on all types submitted.

Sample	Graffiti Repellents	Graffiti Removers
All Submitted “Quik-Brik” CMU’s	Sure Klean® Custom Masonry Sealer	Defacer Eraser® Graffiti Wipe OR Sure Klean® Fast Acting Stripper

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.

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.

Christopher A. Moore
Project Testing Laboratory Technician
CAM



Laboratory Report

Pallet Tag Program Evaluation

**Northfield Block, Co. – Joliet Plant
Joliet, IL**

Project No. 0509-19 PTP

Prepared For:

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Prepared By:

***PROSOCO, Inc.
November 2005***