

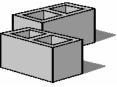
PROSOCO, Inc.

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ATTACHMENTS

Technical Services TECH Note RILEM Tube Test Procedures Product Data literature for all products evaluated





Submitted Information

For:	Joseph Talecki
CC:	John Bourne

Subject: Duke Concrete Queensbury, NY

Date:

Project: 0506-14 PTP

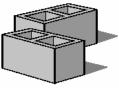
Samples Submitted: 4 types of integrally colored split-face CMU's

Block	Name	Color	Integral Water Repellent	Size
Split-face	"#7"	Gray	Krete HQ	8" x 16" x 2"
Split-face	"#7 Lt. Wt."	Gray	Krete HQ	8" x 16" x 2"
Split-face	"#19 Lt. Wt."	Dark Red	Krete HQ	8" x 16" x 2"
Split-face	"#27 Red"	Red	Krete HQ	8" x 16" x 2"

Submitted by: Joseph Talecki

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Purpose of Testing

Four types of integrally colored split-face 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[®] Custom Masonry Cleaner was evaluated to determine the optimal concentration of cleaner for removal of laboratory applied mortar which also 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 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 days, 7 days, 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
- 2 **Fair** match to through-body
- 4 **Best** match to through-body

NOTE: When cleaning integrally colored CMU's.

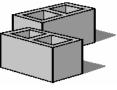
Integrally colored concrete masonry units (CMU's) frequently have high amounts of pigments concentrated on the surface of the cured concrete unit. Variation of surface pigment concentrations from one CMU to the next creates a blotchy appearance in the completed wall. Allowed to remain on the surface 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[®] Weather Seal Blok-Guard[®] & Graffiti Control II was evaluated for its ability to provide water repellency to the submitted samples.

Graffiti Control – Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II 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

Sample	Product	Dilution
All Submitted CMU's	Sure Klean [®] Custom Masonry Cleaner	1:2, 1:4, 1:6

Water Repellent Products Evaluated

Sample	Product	Dilution
All Submitted CMU's	Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II	Concentrate

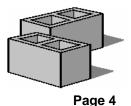
Graffiti Control Products Evaluated

Sample	Product	Dilution
All Submitted CMU's	Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II	Concentrate

Graffiti Removal Products Evaluated

Sample	Product	Dilution
All Submitted CMU's	Sure Klean [®] Fast Acting Stripper	Concentrate
All Submitted Civio's	Defacer Eraser [®] Graffiti Wipe	Concentrate





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 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 throughbody color of the CMU's.

Description of Products Evaluated – New Construction Cleaning

Sure Klean[®] **Custom Masonry Cleaner** – A general purpose, concentrated acidic cleaner for most custom masonry and colored concrete. Removes concrete splashes, excess mortar, mud, heavy efflorescence and surface soiling, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 2-6 parts water. Apply by brush or low-pressure spray.

Test Method – New Construction Cleaning

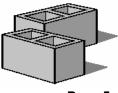
Dilution ratios refer to mixtures of parts concentrated cleaner: parts fresh water. Chemical cleaners were evaluated using the following procedure:

- 1. Pre-wet the surface with water.
- 2. Apply at the appropriate dilutions.
- 3. Allow appropriate dwell time, as specified.

- 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 Equipment** – Masonry washing equipment generating approximately 1300 psi with a water flow rate of 1.9 gallons per minute delivered through a 45 degree fan spray tip was used for rinsing.





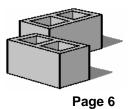
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Test Results - New Construction Cleaning

<u>% removal</u>

"#7" Split-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Custom Masonry Cleaner	1:2	100%	100%	100%
Sure Klean [®] Custom Masonry Cleaner	1:4	100%	100%	100%
Sure Klean [®] Custom Masonry Cleaner	1:6	100%	100%	100%
"#7 Lt. Wt."	Split-face Cl	MU		
Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Custom Masonry Cleaner	1:2	100%	98%	98%
Sure Klean [®] Custom Masonry Cleaner	1:4	95%	95%	95%
Sure Klean [®] Custom Masonry Cleaner	1:6	95%	95%	90%
"#19 Lt. Wt.'	' Split-face C	MU		
Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Custom Masonry Cleaner	1:2	98%	98%	95%
Sure Klean [®] Custom Masonry Cleaner	1:4	98%	95%	95%
Sure Klean [®] Custom Masonry Cleaner	1:6	98%	90%	85%
"#27 Red" Split-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean [®] Custom Masonry Cleaner	1:2	100%	99%	99%
Sure Klean [®] Custom Masonry Cleaner	1:4	98%	98%	95%
Sure Klean [®] Custom Masonry Cleaner	1:6	98%	98%	95%





Test Results - Color Uniformity

Substrate: Split-face CMU	Pigment	Color: "#7"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean [®] Custom Masonry Cleaner	1:2	4	4
Sure Klean [®] Custom Masonry Cleaner	1:4	4	4
Sure Klean [®] Custom Masonry Cleaner	1:6	4	4
Substrate: Split-face CMU	Pigment	Color: "#7 Lt. Wt."	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean [®] Custom Masonry Cleaner	1:2	4	3
Sure Klean [®] Custom Masonry Cleaner	1:4	4	3
Sure Klean [®] Custom Masonry Cleaner	1:6	4	4
Substrate: Split-face CMU Pigment Color: "#19 Lt. Wt."			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean [®] Custom Masonry Cleaner	1:2	4	3
Sure Klean [®] Custom Masonry Cleaner	1:4	4	3
Sure Klean [®] Custom Masonry Cleaner Sure Klean [®] Custom Masonry Cleaner	1:4 1:6	4 4	3 4
	1:6	•	_
Sure Klean [®] Custom Masonry Cleaner	1:6	4	_
Sure Klean [®] Custom Masonry Cleaner Substrate: Split-face CMU	1:6 Pigment	4 Color: "#27 Red" Aggregate	4 Surface Pigment
Sure Klean [®] Custom Masonry Cleaner Substrate: Split-face CMU Product	1:6 Pigment Dilution	4 Color: "#27 Red" Aggregate Exposure	4 Surface Pigment Alteration/Removal

Scale used for reporting results of both categories

0 – **Worst** match to through-body

1 – **Poor** match to through-body

3- **Good** match to through-body

4 – **Best** r

2 - Fair match to through-body

4 – **Best** match to through-body



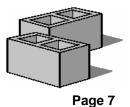
Custom

Masonry

Custom

Masonry

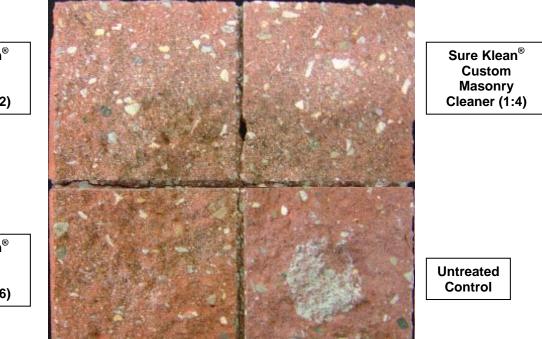
PALLET TAG PROGRAM LABORATORY REPORT



Photographs - New Construction Cleaning



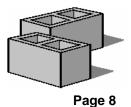
"#27 Red" Split-face; 7 Day Cleaning



Sure Klean[®] Custom Masonry Cleaner (1:2)

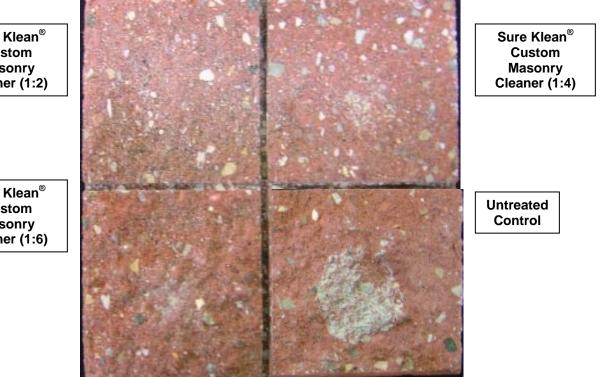
Sure Klean[®] Custom Masonry Cleaner (1:6)





Photographs - New Construction Cleaning

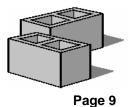
"#27 Red" Split-face; 14 Day Cleaning



Sure Klean[®] Custom Masonry Cleaner (1:2)

Sure Klean[®] Custom Masonry Cleaner (1:6)





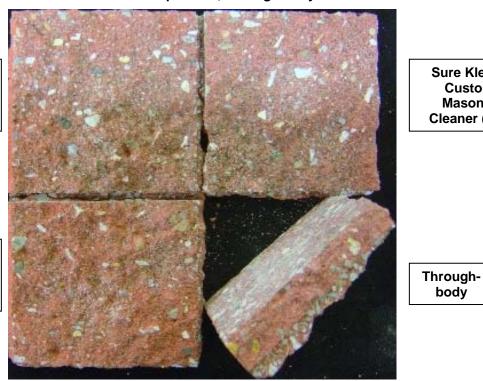
Sure Klean[®]

Custom

Masonry Cleaner (1:4)

body

Photographs - Color Uniformity



"#27 Red" Split-face; Through-body

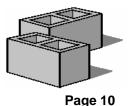
Sure Klean[®] Custom Masonry Cleaner (1:6)

Sure Klean[®]

Custom

Masonry Cleaner (1:2)





Conclusions – New Construction Cleaning

Based on the test data, all of the submitted samples were efficiently cleaned with a dilution of Sure Klean[®] Custom Masonry Cleaner. Use higher concentrations and surface agitation to maximize aggregate exposure. Use low concentration and surface agitation to minimize aggregate exposure.

<u>Recommendations</u> – New Construction Cleaning

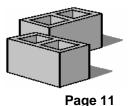
Recommendations for cleaning for each type of CMU submitted by Duke Concrete, Queensbury, NY are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while providing the best match to the through-body color of CMU's.

Sample	New Construction Cleaning (Type S mortar, 14 day cleaning)
"#7" "#7 Lt. Wt." "#27 Red"	Sure Klean [®] Custom Masonry Cleaner (1:2) OR (1:4) OR (1:6)
"#19 Lt. Wt."	Sure Klean [®] Custom Masonry Cleaner (1:2) OR (1:4)

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.





PROSOCO, Inc.

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[®] Weather Seal Blok-Guard[®] & Graffiti Control II – A clear-drying, water-based silicone emulsion for weatherproofing concrete block and other porous masonry materials. Blok-Guard[®] & Graffiti Control II also protects masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard[®] & Graffiti Control II protects exterior walls exposed to normal weathering. Graffiti removal from treated surfaces is fast and easy using Defacer Eraser[®] Graffiti Wipe. Blok-Guard[®] & Graffiti Control II is easy to apply with low-pressure spray, brush or roller.

<u>Sample Preparation</u> – Protective Water Repellents

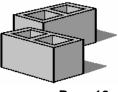
The submitted blocks were scored, allowed to dry, and to reabsorb atmospheric humidity for 24 hours prior to treatment. Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II was applied by a wet-on-wet brushing application and allowed to cure for at least 24 hours in accordance with the PROSOCO, Inc. Product Data Sheet.

<u>Test Methods</u> – 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.





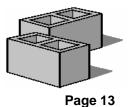
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Test Results - Protective Water Repellents

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

	RESULTS
"#7" Split-face CMU	
Untreated Control	48 mph
Blok-Guard [®] & Graffiti Control II	59 mph
"#7 Lt. Wt." Split-face CMU	
Untreated Control	<40 mph
Blok-Guard [®] & Graffiti Control II	59 mph
"#19 Lt. Wt." Split-face CMU	
Untreated Control	<40 mph
Blok-Guard [®] & Graffiti Control II	58 mph
"#27" Split-face CMU	
Untreated Control	56 mph
Blok-Guard [®] & Graffiti Control II	60 mph



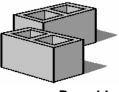


Photographs - Protective Water Repellents

"#7" Split-face CMU; RILEM Testing







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Conclusions – Protective Water Repellents

Based upon laboratory evaluations, Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II provided excellent water repellency to each of the submitted samples. In addition, Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II provided slight color enhancement to the submitted samples.

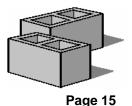
Recommendations – Protective Water Repellents

Recommendations for water repellency treatment for each type of CMU submitted by Duke Concrete, Queensbury, NY are provided in the chart below. Recommendations are based on the treatment that proved most effective at providing water repellency on all types submitted.

Sample	Water Repellents
All Submitted CMU's	Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II

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.





Graffiti Control

These trials were conducted to determine the optimal graffiti control treatment for the submitted concrete block samples.

Description of Products Evaluated – Graffiti Control

Graffiti Control Treatments

Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II – A clear-drying, water-based silicone emulsion for weatherproofing concrete block and other porous masonry materials. Blok-Guard[®] & Graffiti Control II also protects masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard[®] & Graffiti Control II protects exterior walls exposed to normal weathering. Graffiti removal from treated surfaces is fast and easy using Defacer Eraser[®] Graffiti Wipe. Blok-Guard[®] & Graffiti Control II is easy to apply with low-pressure spray, brush or roller.

Products Evaluated for Graffiti Removal

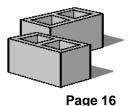
Defacer Eraser[®] **Graffiti Wipe** – An easy-to-use graffiti remover that does not contain methanol, methylene chloride or other halogenated solvents prohibited on many projects. Graffiti Wipe removes a variety of graffiti stains from most smooth masonry, split-face concrete block, wood and metal surfaces.

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)





Sample Preparation – Graffiti Control

This evaluation compares the effectiveness of the treatments tested to the untreated surfaces of the submitted samples in preventing staining of enamel spray paint and permanent markers.

Sections of the concrete block samples were treated with Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II in a wet-on-wet brushing application in accordance with the PROSOCO, Inc. Product Data Sheet application instructions and then allowed to cure for at least one day. At the end of the 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[®] Weather Seal Blok-Guard[®] & Graffiti Control II. 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.

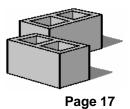
Test Method – Graffiti Control

Chemical cleaners were evaluated using the following procedure:

- 1. Apply the product to a dry surface, soiled with graffiti.
- 3. Pressure rinse thoroughly until water runs clear.*
- 4. Allow the surface to dry thoroughly and visually examine to determine effectiveness.

***Pressure Rinsing Equipment** – Masonry washing equipment generating approximately 1300 psi with a water flow rate of 1.9 gallons per minute delivered through a 45 degree fan spray tip was used for rinsing.

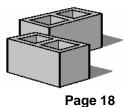




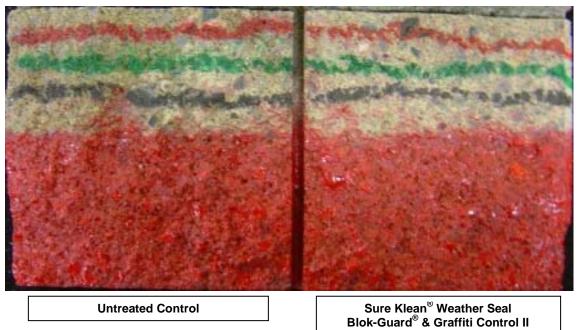
Test Results – Graffiti Control

"#7" Split-face CMU					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	70%	90%	20%	40%	55%
Graffiti Wipe	70%	20%	20%	40%	38%
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	95%	100%	70%	90%	89%
Graffiti Wipe	95%	95%	70%	90%	88%
	"#7	Lt. Wt." Split-fa	ace CMU		
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	75%	95%	70%	60%	75%
Graffiti Wipe	75%	20%	70%	60%	56%
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	98%	98%	90%	95%	95%
Graffiti Wipe	98%	98%	90%	95%	95%
	"#19	Lt. Wt." Split-f	ace CMU		
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	85%	95%	90%	90%	90%
Graffiti Wipe	85%	95%	90%	90%	90%
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	90%	95%	95%	95%	94%
Graffiti Wipe	90%	95%	95%	95%	94%
	"#2	7 Red" Split-fa	ce CMU	• •	
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	90%	95%	70%	80%	84%
Graffiti Wipe	60%	20%	70%	80%	58%
Blok-Guard [®] & Graffiti Control II	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Fast Acting Stripper	95%	95%	80%	90%	90%
Graffiti Wipe	95%	90%	80%	90%	89%



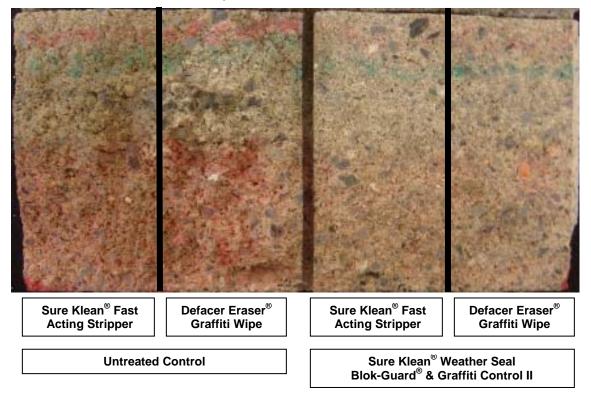


Photographs - Graffiti Control

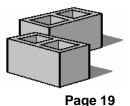




"#7 Lt. Wt." Split-face CMU; After Graffiti Removal







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 II prior to graffiti application. In addition, Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control II provided a slight color enhancement to the submitted samples.

Recommendations – Graffiti Control

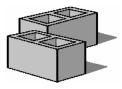
Recommendations for graffiti control treatment for each type of CMU submitted by Duke Concrete, Queensbury, NY are provided in the chart below. Recommendations are based on the treatment that proved most effective for providing graffiti repellency and the product that was most effective at removing the graffiti on all types submitted.

Sample	Graffiti Repellents	Graffiti Removers		
All Submitted CMU's	Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control II	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.

Christopher A. Moore Project Testing Laboratory Technician

CAM



Laboratory Report

Pallet Tag Program Evaluation

Duke Concrete Queensbury, NY

Project No. 0506-14 PTP

Prepared For:

Duke Concrete Duke Industrial Park Uppen Bay Street Queensbury, NY 12805

Prepared By:

PROSOCO, Inc. July 2005