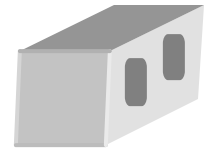




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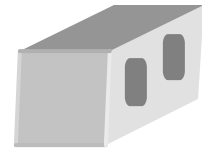
ATTACHMENTS

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

Product Data literature for all products evaluated



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FOR: Doug Barron
cc: Perry Surber
John Bourne

SUBJECT: National Block Company

DATE: March 18, 2002

PROJECT: 0202-04 BP

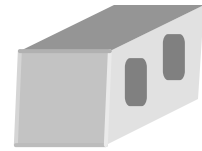
SAMPLES SUBMITTED: Split-face and Smooth-face CMUs of 12 different colors (8 sample of each type)

<u>Sample #</u>	<u>Block</u>	<u>Color</u>	<u>Size</u>
1	Split-face CMU w/ dry block	"Mahogany"	8" x 8" x 16"
	Smooth-face CMU w/ dry block		
2	Split-face CMU	"Hillsdale"	8" x 8" x 16"
	Smooth-face CMU		
3	Split-face CMU	"San Marino"	8" x 8" x 16"
	Smooth-face CMU		
4	Split-face CMU	"Merlot"	8" x 8" x 16"
	Smooth-face CMU		
5	Split-face CMU	"Charcoal"	8" x 8" x 16"
	Smooth-face CMU		
6	Split-face CMU	"White"	8" x 8" x 16"
	Smooth-face CMU		
7	Split-face CMU (ribbed)	"Desert Sand"	8" x 8" x 16"
	Smooth-face CMU		
8	Split-face CMU	"Golden Rod"	8" x 12" x 16"
	Smooth-face CMU		
9	Split-face CMU	"Natural"	8" x 8" x 16"
	Smooth-face CMU		
10	Split-face CMU	"Red Clay"	8" x 12" x 16"
	Smooth-face CMU		
11	Split-face CMU	"Slate"	8" x 8" x 16"
	Smooth-face CMU		
12	Split-face CMU	"Mohawk Orange"	8" x 8" x 16"
	Smooth-face CMU		

Submitted by : Tony Rea
National Block Company
39000 Ford Rd.
Westland, MI 48185



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PURPOSE OF TESTING:

Twelve integrally colored split-face CMUs and twelve integrally colored smooth-face CMUs with large, small and fine aggregate were submitted for testing using PROSOCO's new construction cleaning and water repellent products.

A. Cleaning Concrete Masonry Units: Sure Klean[®] New Construction Cleaners were evaluated for removal of laboratory applied mortar.

To simulate new construction soiling, all CMUs 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 cementitious mortar. The wet, mortar-filled cylinder is allowed to remain in contact with the CMU for 10 minutes before removal.

Soiled CMUs are allowed to dry before test cleaning.

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.

Refer to “*Note: When cleaning integrally colored CMU” in the following section, “Surface Alteration Testing.”

B. Surface Alteration Testing - Sure Klean[®] Custom Masonry Cleaner was 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 masonry unit.

Aggregate Exposure is the visual examination of the CMU comparing aggregate exposure of the untreated control surface to surfaces cleaned with selected product(s) at given dilutions.

Surface Pigment Alteration/Removal* is the visual examination of the CMU comparing the surface pigmentation of the untreated control to surfaces cleaned with selected product(s) at given dilutions.

Matrix Erosion is the visual examination comparing the untreated control surface to surfaces cleaned with selected products at given dilutions looking for any potential erosion/digestion of the cementitious matrix of the CMU.

Staining is the visual examination for changes that are the result of a chemical reaction that leaves a staining precipitate.

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

0 – no change	3 – heavy
1 – slight	4 – excessive
2 – moderate	

*** NOTE: When cleaning integrally colored CMU.**

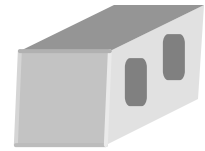
Integrally colored concrete masonry units (CMUs) frequently have high amounts of pigments concentrated on the surface of the cured concrete unit. Variation of surface pigment concentrations from one CMU to the next creates a blotchy appearance in the completed wall. Allowed to remain on the surface of 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 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.

C. Protective Water Repellents - Sure Klean[®] Custom Masonry Sealer and Sure Klean[®] Weather Seal Siloxane WB Concentrate were evaluated for their ability to provide water repellency to the submitted samples.



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CLEANING PRODUCTS EVALUATED

SAMPLE	Sure Klean [®] Custom Masonry Cleaner
All Colors of Split and Smooth-face CMUs	1:2
	1:4
	1:6

SURFACE ALTERATION PRODUCTS EVALUATED

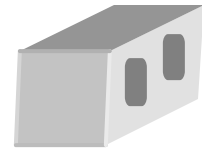
SAMPLE	Sure Klean [®] Custom Masonry Cleaner
All Colors of Split and Smooth-face CMUs	1:2
	1:4
	1:6

WATER REPELLENT PRODUCTS EVALUATED

SAMPLE	Product	Dilution
All Colors of Split and Smooth-face CMUs	Sure Klean [®] Custom Masonry Sealer	Concentrate
	Sure Klean [®] Weather Seal Siloxane WB Concentrate	1:9; 1:14



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SECTION A – CLEANING INTEGRALLY COLORED CMUs

DESCRIPTION OF PRODUCTS EVALUATED

These cleaning trials were conducted to determine the optimal cleaning/cure time combination.

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 – Cleaning

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

1. Prewet the surface with water.
2. Apply each cleaner at the appropriate dilutions.
3. Allow 3-5 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.

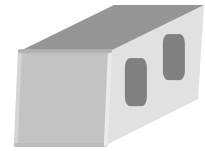
* Pressure rinsing was conducted at approximately 1300 psi with a warm water flow rate of 1.9 gallons per minute.

TEST RESULTS – 3 & 7 day Cleaning

SAMPLE	Cleaner	Dilution	Cure	Effectiveness
All Colors (#1-12) Split and Smooth-face CMUs	Custom Masonry Cleaner	1:2	3 day	100%
		1:4		100%
		1:6		100%
		1:2	7 day	100%
		1:4		100%
		1:6		100%



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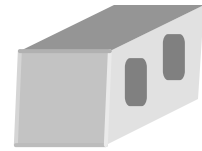
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TEST RESULTS – 14 day Cleaning:

SAMPLE	Cleaner	Dilution	Cure	Effectiveness
#1 Smooth "Mahogany"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#1 Split "Mahogany"	Custom Masonry Cleaner	1:2	14 day	99%
		1:4		90%
		1:6		85%
#2 Smooth & Split "Hillsdale"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#3 Smooth & Split "San Marino"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#4 Smooth & Split "Merlot"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#5 Smooth "Charcoal"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#5 Split "Charcoal"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		98%
#6 Smooth "White"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		99%
#6 Split "White"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#7 Smooth "Desert Sand"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#7 Split (ribbed) "Desert Sand"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		99%
		1:6		99%
#8 Smooth & Split "Golden Rod"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%



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TEST RESULTS – 14 day Cleaning Continued:

SAMPLE	Cleaner	Dilution	Cure	Effectiveness
#9 Smooth & Split "Natural"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#10 Smooth & Split "Red Clay"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#11 Smooth "Slate"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#11 Split "Slate"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		95%
#12 Smooth "Mohawk Orange"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		100%
		1:6		100%
#12 Split "Mohawk Orange"	Custom Masonry Cleaner	1:2	14 day	100%
		1:4		99%
		1:6		98%

CONCLUSIONS - Cleaning:

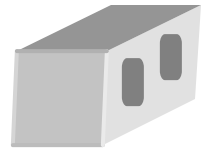
Based on the test data, all of the submitted block samples were efficiently cleaned with each dilution of the selected PROSOCO Inc.'s cleaning products. Use higher concentrations and surface agitation to maximize aggregate exposure. Use low concentration and surface agitation to minimize aggregate exposure.

All dilutions of Sure Klean[®] Custom Masonry Cleaner tested affected the split-face CMUs in a similar manner, removing slight, moderate to heavy concentrations of pigmented matrix from the substrate, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit.

All dilutions of Sure Klean[®] Custom Masonry Cleaner tested affected the smooth-face CMUs in a similar manner, removing slight to moderate concentrations of pigmented matrix from the substrate, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit.



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RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING:

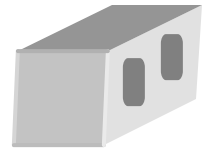
Based on these evaluations, all of the dilutions of Custom Masonry Cleaner tested can be recommended for job-site testing. They all are effective in removing excess mortar, and they all assist in improving the color and uniformity of these concrete blocks. The most appropriate cleaner and dilution should be determined on the specific job site, and will be dependent primarily on the nature and severity of soiling present at that location.

Note: To remove excess mortar while minimizing aggregate exposure and color enhancement, clean within 7 days of completion using Custom Masonry Cleaner diluted with 6 parts fresh water.

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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PROSOCO, Inc.

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SECTION B – SURFACE ALTERATIONS

DESCRIPTION OF PRODUCTS EVALUATED – Surface Alterations:

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 – Surface Alteration Testing:

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

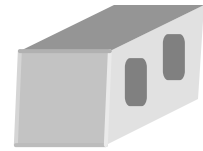
Sure Klean® Custom Masonry Cleaner evaluated at dilution 1:2, 1:4, and 1:6. The following procedure was used:

1. Prewet the surface with water.
2. Apply each cleaner at the appropriate dilutions.
3. Allow 3-5 minute exposure time.
4. Reapply the products and moderately agitate with a brush.
5. Pressure rinse thoroughly.*
7. Allow the surface to dry for at least 18 hours and visually examine.

* Pressure rinsing was conducted at approximately 1300 psi with a warm water flow rate of 1.9 gallons per minute.



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Surface Alteration Results:

Substrate: #1 Smooth		Pigment Color: Mahogany w/ dry block			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0
Substrate: #1 Split		Pigment Color: Mahogany w/ dry block			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #2 Smooth		Pigment Color: Hillsdale			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0
Substrate: #2 Split		Pigment Color: Hillsdale			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #3 Smooth		Pigment Color: San Marino			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0

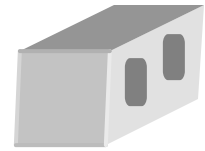
Scale used for reporting results of all categories

0 – no change
1 – slight
2 – moderate

3 – heavy
4 – excessive



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PROSOCO, Inc.

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Surface Alteration Results Continued:

Substrate: #3 Split		Pigment Color: San Marino			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #4 Smooth		Pigment Color: Merlot			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #4 Split		Pigment Color: Merlot			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #5 Smooth		Pigment Color: Charcoal			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #5 Split		Pigment Color: Charcoal			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0

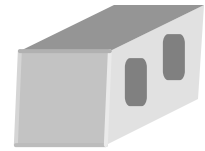
Scale used for reporting results of all categories

0 – no change
1 – slight
2 – moderate

3 – heavy
4 – excessive



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Surface Alteration Results Continued:

Substrate: #6 Smooth		Pigment Color: White			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #6 Split		Pigment Color: White			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	1	1	1	0
Custom Masonry Cleaner	1:4	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #7 Smooth		Pigment Color: Desert Sand			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #7 Split (ribbed)		Pigment Color: Desert Sand			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #8 Smooth		Pigment Color: Golden Rod			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0

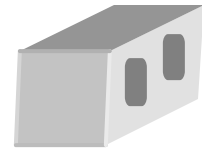
Scale used for reporting results of all categories

0 – no change
1 – slight
2 – moderate

3 – heavy
4 – excessive



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Surface Alteration Results Continued:

Substrate: #8 Split		Pigment Color: Golden Rod			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	1	1	1	0
Custom Masonry Cleaner	1:4	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #9 Smooth		Pigment Color: Natural			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0
Substrate: #9 Split		Pigment Color: Natural			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	3	3	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0
Substrate: #10 Smooth		Pigment Color: Red Clay			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0
Substrate: #10 Split		Pigment Color: Red Clay			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0

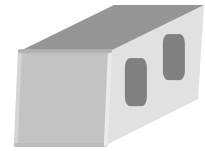
Scale used for reporting results of all categories

0 – no change
1 – slight
2 – moderate

3 – heavy
4 – excessive



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PROSOCO, Inc.

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Surface Alteration Results Continued:

Substrate: #11 Smooth		Pigment Color: Slate			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #11 Split		Pigment Color: Slate			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #12 Smooth		Pigment Color: Mohawk Orange			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
Substrate: #12 Split		Pigment Color: Mohawk Orange			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0

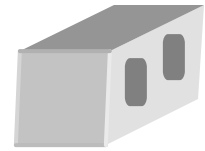
Scale used for reporting results of all categories

0 – no change
1 – slight
2 – moderate

3 – heavy
4 – excessive



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CONCLUSIONS – Surface Alterations:

Based on the test data, all dilutions of Sure Klean[®] Custom Masonry Cleaner tested affected the split-face CMUs in a similar manner, removing slight, moderate to heavy concentrations of pigmented matrix from the substrate, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit.

All dilutions of Sure Klean[®] Custom Masonry Cleaner tested affected the smooth-face CMUs in a similar manner, removing slight to moderate concentrations of pigmented matrix from the substrate, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit.

Use higher concentrations and surface agitation to maximize aggregate exposure. Use low concentration and surface agitation to minimize aggregate exposure.

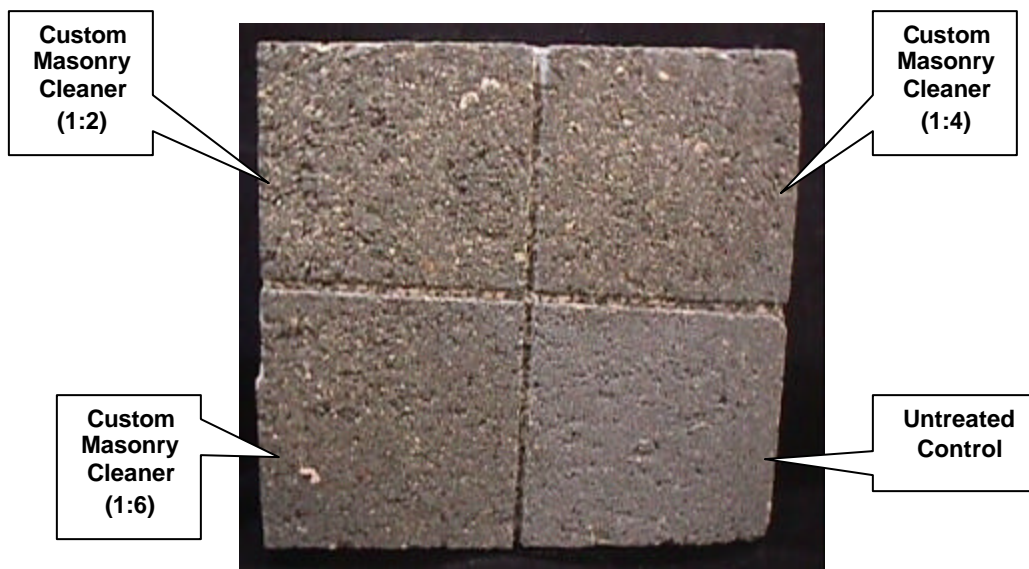
RECOMMENDED PRODUCTS AND DILUTIONS – SURFACE ALTERATIONS:

Based on these evaluations, all of the dilutions of Sure Klean[®] Custom Masonry Cleaner tested can be recommended for job-site testing. They all are effective in removing excess mortar, and they all assist in improving the color and uniformity of these concrete blocks. 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.

Note: To remove excess mortar while minimizing aggregate exposure and color enhancement, clean within 7 days of completion using Custom Masonry Cleaner diluted with 6 parts fresh water.

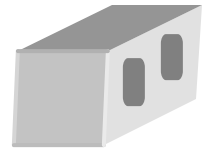
Apply all products in accordance with the manufacturer's recommendation provided on container labels and product data sheets. On-site testing should be conducted to determine the most appropriate cleaning product and procedures for a particular project. See product literature for additional application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

#5 Smooth “Charcoal”





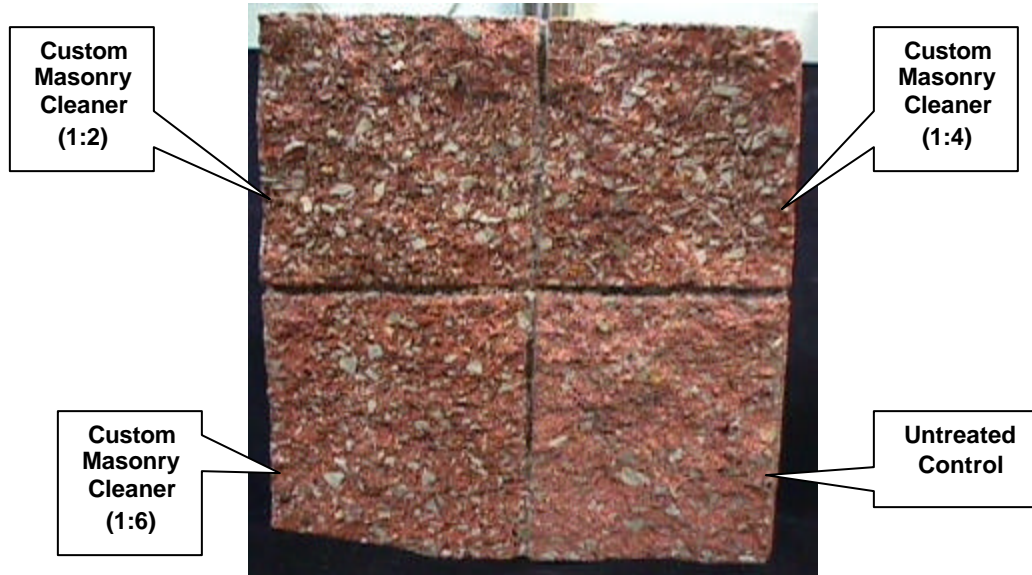
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#12 Split "Mohawk Orange"

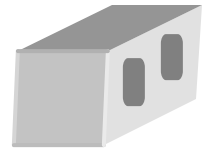


#7 Split (ribbed) "Desert Sand"





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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[®] Custom Masonry Sealer - A clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, cast stone, and concrete block without altering the natural appearance. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering as well as long-lasting protection against many types of graffiti.

Sure Klean[®] Weather Seal Siloxane WB Concentrate – A self-emulsifying water repellent concentrate designed for dilution with fresh water at the jobsite. This solvent-free blend of silanes and oligomeric alkoxysiloxanes mixes easily with water to produce a penetrating water repellent ideal for application to dense or porous masonry surfaces.

SAMPLE PREPARATION - Protective Water Repellents:

The submitted blocks were scored, allowed to dry, and to reabsorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of a wet-on-wet brush application. All treatments were allowed to cure at least 3 days prior to testing.

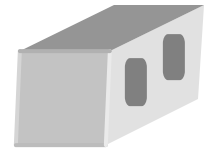
TEST METHODS - Protective Water Repellents:

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.



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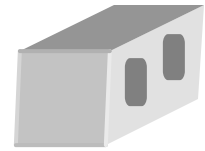
TEST RESULTS - Protective Water Repellents:

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

	RESULTS
#1 Smooth "Mahogany" w/ dry block	
Untreated Control	52 mph
Custom Masonry Sealer	57 mph
Siloxane WB (1:9)	55 mph
Siloxane WB (1:14)	48 mph
#1 Split "mahogany" w/ dry block	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Siloxane WB (1:14)	60 mph
#2 Smooth "Hillsdale"	
Untreated Control	<40 mph
Custom Masonry Sealer	57 mph
Siloxane WB (1:9)	57 mph
Siloxane WB (1:14)	55 mph
#2 Split "Hillsdale"	
Untreated Control	<40 mph
Custom Masonry Sealer	57 mph
Siloxane WB (1:9)	<40 mph
Siloxane WB (1:14)	55 mph
#3 Smooth "San Marino"	
Untreated Control	<40 mph
Custom Masonry Sealer	57 mph
Siloxane WB (1:9)	<40 mph
Siloxane WB (1:14)	<40 mph
#3 Split "San Marino"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Siloxane WB (1:14)	55 mph



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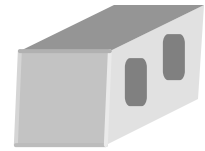
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#4 Smooth "Merlot"	
Untreated Control	<40 mph
Custom Masonry Sealer	53 mph
Siloxane WB (1:9)	<40 mph
Siloxane WB (1:14)	46 mph
#4 Split "Merlot"	
Untreated Control	<40 mph
Custom Masonry Sealer	56 mph
Siloxane WB (1:9)	56 mph
Siloxane WB (1:14)	55 mph
#5 Smooth "Charcoal"	
Untreated Control	<40 mph
Custom Masonry Sealer	55 mph
Siloxane WB (1:9)	<40 mph
Siloxane WB (1:14)	<40 mph
#5 Split "Charcoal"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Siloxane WB (1:14)	57 mph
#6 Smooth "White"	
Untreated Control	<40 mph
Custom Masonry Sealer	57 mph
Siloxane WB (1:9)	<40 mph
Siloxane WB (1:14)	<40 mph
#6 Split "White"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	59 mph
Siloxane WB (1:14)	59 mph



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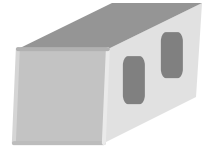
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#7 Smooth "Desert Sand"	
Untreated Control	<40 mph
Custom Masonry Sealer	57 mph
Siloxane WB (1:9)	52 mph
Siloxane WB (1:14)	44 mph
#7 Split (ribbed) "Desert Sand"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	45 mph
Siloxane WB (1:14)	<40 mph
#8 Smooth "Golden Rod"	
Untreated Control	<40 mph
Custom Masonry Sealer	52 mph
Siloxane WB (1:9)	<40 mph
Siloxane WB (1:14)	49 mph
#8 Split "Golden Rod"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	<40 mph
Siloxane WB (1:14)	60 mph
#9 Smooth "Natural"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	49 mph
Siloxane WB (1:14)	52 mph
#9 Split "Natural"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	58 mph
Siloxane WB (1:14)	<40 mph



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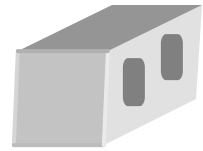
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#10 Smooth "Red Clay"	
Untreated Control	<40 mph
Custom Masonry Sealer	53 mph
Siloxane WB (1:9)	48 mph
Siloxane WB (1:14)	<40 mph
#10 Split "Red Clay"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	58 mph
Siloxane WB (1:14)	59 mph
#11 Smooth "Slate"	
Untreated Control	<40 mph
Custom Masonry Sealer	53 mph
Siloxane WB (1:9)	<40 mph
Siloxane WB (1:14)	48 mph
#11 Split "Slate"	
Untreated Control	<40 mph
Custom Masonry Sealer	58 mph
Siloxane WB (1:9)	60 mph
Siloxane WB (1:14)	60 mph
#12 Smooth "Mohawk Orange"	
Untreated Control	<40 mph
Custom Masonry Sealer	59 mph
Siloxane WB (1:9)	56 mph
Siloxane WB (1:14)	58 mph
#12 Split "Mohawk Orange"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	58 mph
Siloxane WB (1:14)	59 mph



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CONCLUSIONS - Protective Water Repellents:

Based upon laboratory evaluations, Sure Klean[®] Custom Masonry Sealer was able to provide above average water repellency to all submitted split and smooth-face CMUs. Sure Klean[®] Weather Seal Siloxane WB Concentrate diluted with nine parts fresh water was able to provide water repellency to fourteen of the 24 different CMUs treated. Sure Klean[®] Weather Seal Siloxane WB Concentrate diluted with fourteen parts fresh water was able to provide water repellency to thirteen of the 24 different CMUs treated.

Sure Klean[®] Custom Masonry Sealer slightly enhanced the natural appearance of the split and smooth-face CMUs. Sure Klean[®] Weather Seal Siloxane WB Concentrate in either dilution did not alter the natural appearance of any of the CMUs tested.

RECOMMENDATIONS - Protective Water Repellents:

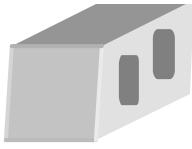
Based on evaluations, Sure Klean[®] Custom Masonry Sealer can be recommended for jobsite testing on all twelve split and twelve smooth-face CMUs types submitted by National Block Company, Westland, MI.

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.

Heidi Turner
R & D Technician

Krista Walker
R & D Technician

CMN/HT/KW/csm



Laboratory Report

Block Program Evaluation

**National Block Company
Westland, MI**

Project No. 0202-04 BP

Prepared For:

**Tony Rea
National Block Company
39000 Ford Rd.
Westland, MI 48185**

Prepared By:



***PROSOCO, Inc.
March 2002***

PROSOCO, Inc.
LABORATORY REPORT



PROSOCO, Inc. • 3741 Greenway Circle • Lawrence, Kansas 66046 • (785) 865-4200 • Fax: (785) 830-9176

FOR: Steve Behrensmeyer
cc: Jim Lucas
Perry Surber
John Bourne

SUBJECT: Illinois Concrete Company, Inc.
Champaign, IL
Water Repellency Evaluation

DATE: April 4, 2002
PROJECT: 0202-08 BP
Addendum

SAMPLES SUBMITTED:

Block	Color	Size
#1 Split-face CMU	"Charcoal"	8" x 8" x 16"
#2 Split-face CMU w/ dry block	"Redwood"	8" x 8" x 16"
#3 Split-face CMU	"Sandstone"	8" x 8" x 16"
#4 Split-face CMU	"Natural Gray"	8" x 8" x 16"
#5 Normal Weight Smooth-face CMU	"Common Natural Gray"	8" x 8" x 16"
#6 Normal Weight Smooth-face CMU	"Sahara Brown"	8" x 8" x 16"

Submitted by: Steve Behrensmeyer
Illinois Concrete Company Inc.
702 Edwin St.
Champaign, IL 61826

PURPOSE OF TEST:

To determine the effectiveness of Sure Klean[®] Custom Masonry Sealer applied to vertical installations of the submitted samples.

SAMPLE PREPARATION:

Products Evaluated:
Sure Klean[®] Custom Masonry Sealer

Dilution:
concentrate

The submitted blocks were scored, allowed to dry, and reabsorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of a wet-on-wet brush application. The treatment was allowed to cure at least 3 days prior to testing.



TEST METHODS:

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.

TEST RESULTS:

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

RESULTS	
“Charcoal” Split-face CMU	
Untreated Control	<40 mph
Custom Masonry Sealer	58 mph
“Redwood” Split-face CMU w/ dry block	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
“Sandstone” Split-face CMU	
Untreated Control	<40 mph
Custom Masonry Sealer	55 mph
“Natural Gray” Normal Weight Split-face CMU	
Untreated Control	<40 mph
Custom Masonry Sealer	59 mph
“Common Natural Gray” Normal Weight Smooth-face CMU	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
“Sahara Brown” Normal Weight Split-face CMU	
Untreated Control	<40 mph
Custom Masonry Sealer	59 mph



CONCLUSIONS:

Based upon laboratory evaluations, Sure Klean[®] Custom Masonry Sealer was able to provide above average water repellency to all six types of CMUs submitted. Sure Klean[®] Custom Masonry Sealer slightly enhanced the natural appearance of the CMUs.

RECOMMENDATIONS:

Based on evaluations, Sure Klean[®] Custom Masonry Sealer can be recommended for job-site testing on all six CMU types submitted by Illinois Concrete Company Inc., Champaign, IL.

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.

Krista Walker

Krista M. Walker
R & D Technician

KMW/csm

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 (90) DAYS 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.