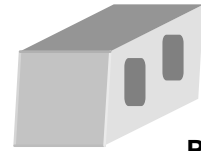




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**PROSOCO, Inc.**

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## ATTACHMENTS

Attachment #1 – PHOTO A & B

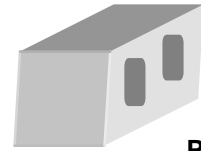
Attachment #2 – PHOTO C

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

Product Data literature for all products evaluated



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PROSOCO, Inc.

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**FOR:** Mike Brankamp  
**cc:** Perry Surber  
John Bourne

**SUBJECT:** Schuster's Building Products  
Indianapolis, IN 46203

**DATE:** September 17, 2001

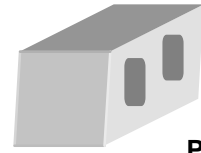
**PROJECT:** 0107-10 BP

**SAMPLES SUBMITTED:** 19 different colors of concrete split-face CMUs, 20 different colors of concrete smooth-face CMUs, three different colors of celtik wall CMUs, and three different colors of keystone retaining wall CMUs

<u>Sample</u>	<u>Color</u>	<u>Size</u>
Split-face CMU	"Empire Gray"	4" x 8" x 8"
Split-face CMU	"Dover White"	4" x 8" x 8"
Split-face CMU	"Butter Cream"	4" x 8" x 8"
Split-face CMU	"Sandstone"	4" x 8" x 8"
Split-face CMU	"Burnt Sienna"	4" x 8" x 8"
Split-face CMU	"Chamois"	4" x 8" x 8"
Split-face CMU	"Peach"	4" x 8" x 8"
Split-face CMU	"Aspen Brown"	4" x 8" x 8"
Split-face CMU	"Wild Cherry"	4" x 8" x 8"
Split-face CMU	"Slate"	4" x 8" x 8"
Split-face CMU	"Peanut"	4" x 8" x 8"
Split-face CMU	"Cocoa"	4" x 8" x 8"
Split-face CMU	"Soft Pink"	4" x 8" x 8"
Split-face CMU	"Charcoal"	4" x 8" x 8"
Split-face CMU	"Sierra Buff"	4" x 8" x 8"
Split-face CMU	"Indy Red"	4" x 8" x 8"
Split-face CMU	"Natural Gray"	4" x 8" x 8"
Split-face CMU	"Harvest"	4" x 8" x 8"
Smooth-face CMU	"Empire Gray"	4" x 8" x 8"
Smooth-face CMU	"Dover White"	4" x 8" x 8"
Smooth-face CMU	"Butter Cream"	4" x 8" x 8"
Smooth-face CMU	"Sandstone"	4" x 8" x 8"
Smooth-face CMU	"Burnt Sienna"	4" x 8" x 8"



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PROSOCO, Inc.

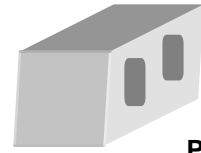
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Smooth-face CMU	"Chamois"	4" x 8" x 8"
Smooth-face CMU	"Peach"	4" x 8" x 8"
Smooth-face CMU	"Aspen Brown"	4" x 8" x 8"
Smooth-face CMU	"Wild Cherry"	4" x 8" x 8"
Smooth-face CMU	"Slate"	4" x 8" x 8"
Smooth-face CMU	"Peanut"	4" x 8" x 8"
Smooth-face CMU	"Cocoa"	4" x 8" x 8"
Smooth-face CMU	"Soft Pink"	4" x 8" x 8"
Smooth-face CMU	"Charcoal"	4" x 8" x 8"
Smooth-face CMU	"Sierra Buff"	4" x 8" x 8"
Smooth-face CMU	"Indy Red"	4" x 8" x 8"
Smooth-face CMU	"Natural Gray"	4" x 8" x 8"
Smooth-face CMU	"Harvest"	4" x 8" x 8"
Smooth-face lightweight (Haydite) CMU	"Gray"	8" x 8" x 16"
Split-face medium weight CMU	"Gray"	8" x 8" x 16"
Smooth-face medium weight CMU	"Gray"	8" x 8" x 16"
Celtik wall CMU	"Sheffield"	4" x 9" x 13"
Celtik wall CMU	"Essex"	4" x 9" x 17"
Celtik wall CMU	"Oxford"	4" x 9" x 13"
Keystone retaining wall CMU	"Gray"	4" x 11" x 17"
Keystone retaining wall CMU	"Beige"	4" x 11" x 17"
Keystone retaining wall CMU	"Brown"	4" x 11" x 17"

Submitted by: Mike Dickey



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

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## PURPOSE OF TESTING

19 different colors of concrete split-face CMUs, 20 different colors of concrete smooth-face CMUs, three different colors of celtik wall CMUs, and three different colors of keystone retaining wall CMUs were submitted for testing using PROSOCO, Inc.'s new construction cleaning and water repellent products.

**A. Cleaning Concrete Masonry Units** – Sure Klean<sup>®</sup> Custom Masonry Cleaner was tested at various dilutions for the removal of laboratory applied mortar from the CMUs.

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 Ash Grove<sup>®</sup> 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 Ash Grove<sup>®</sup> Type S mortar staining after 7 days of curing.

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

**B. Surface Alteration Testing** – Sure Klean<sup>®</sup> 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.**

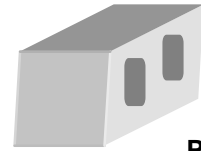
Integrally colored concrete masonry units (CMUs) frequently have high amounts of pigments concentrated on the surface of the cured concrete unit. Variation of surface pigment concentrations from one CMU to the next creates a blotchy appearance in the completed wall. Allowed to remain on the surface of 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<sup>®</sup> Custom Masonry Sealer and Sure Klean<sup>®</sup> Weather Seal Siloxane WB Concentrate was evaluated for their ability to provide water repellency to the submitted samples.



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PROSOCO, Inc.

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## CLEANING PRODUCTS EVALUATED

SAMPLE	Sure Klean <sup>®</sup> Custom Masonry Cleaner
All colors of split-face and smooth-face CMUs, celtik wall CMUs, and keystone retaining wall CMUs	1:2
	1:4
	1:6

## SURFACE ALTERATION PRODUCTS EVALUATED

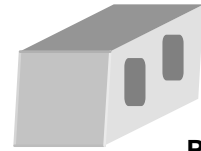
SAMPLE	Sure Klean <sup>®</sup> Custom Masonry Cleaner
All colors of split-face and smooth-face CMUs, celtik wall CMUs, and keystone retaining wall CMUs	1:2
	1:4
	1:6

## WATER REPELLENT PRODUCTS EVALUATED

SAMPLE	PRODUCT	DILUTION
All colors of split-face and smooth-face CMUs, celtik wall CMUs, and keystone retaining wall CMUs	Sure Klean <sup>®</sup> Custom Masonry Sealer	Concentrate
	Sure Klean <sup>®</sup> Weather Seal Siloxane WB Concentrate	1:9



# BLOCK PROGRAM LABORATORY REPORT



## SECTION A – CLEANING INTEGRALLY COLORED CMUs

### DESCRIPTION OF PRODUCTS EVALUATED – Cleaning

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

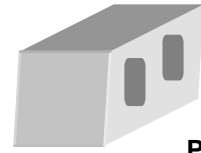
Dilution ratios refer to mixtures of parts concentrated cleaner : parts fresh water. Chemical cleaners were evaluated using the following procedure:

1. Prewet the surface with water.
2. Apply the cleaner at the appropriate dilutions.
3. Allow appropriate exposure time:  
Custom Masonry Cleaner ..... 3 minutes
4. Reapply the product 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.



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## Test Results – Cleaning

Sample	Cleaner	Dilution	Cure	Effectiveness*
All colors of split-face and smooth-face CMUs, celtik wall CMUs, and keystone retaining wall CMUs	Custom Masonry Cleaner	1:2	7 day	100%
		1:4		100%
		1:6		100%

\* % removal of mortar soiling

## CONCLUSIONS – Cleaning

Based on the test data, all of the submitted CMUs were efficiently cleaned with each dilution of Sure Klean<sup>®</sup> Custom Masonry Cleaner. 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<sup>®</sup> Custom Masonry Cleaner tested affected the substrate in a similar manner, removing heavy concentrations of pigmented matrix from the CMUs, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit. The surface pigment removal on the smooth-face lightweight (Haydite) CMU was very severe, to the point of changing its color from light gray to dark gray.

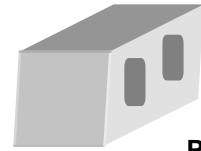
## RECOMMENDED PRODUCTS AND DILUTIONS – Cleaning

Based on these evaluations, all dilutions of Sure Klean<sup>®</sup> Custom Masonry Cleaner tested can be recommended for job-site testing on all of the submitted samples except for the smooth-face lightweight (Haydite) CMU submitted by Schuster's Building Products, Indianapolis, IN. They all are effective in removing excess mortar, and they all assist in improving the color and uniformity of these CMUs. 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 Sure Klean<sup>®</sup> Custom Masonry Cleaner diluted with 6 parts fresh water.



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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 Alterations

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

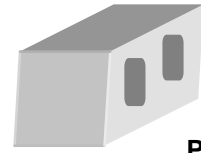
1. Prewet the surface with water.
2. Apply the cleaner at the appropriate dilutions.
3. Allow appropriate exposure time:  
Custom Masonry Cleaner .....3 minutes
4. Reapply the products and moderately agitate with a brush.
5. Pressure rinse thoroughly.\*
6. Allow the surface to dry for at least 18 hours and visually examine.

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





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## TEST RESULTS – Surface Alterations

<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> “Empire Gray”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> “Dover 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
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> “Butter Cream”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> “Sandstone”			
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	1	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> “Burnt Sienna”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	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

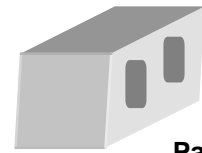
2 – moderate

3 – heavy

4 – excessive



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## TEST RESULTS – Surface Alterations Continued

<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Chamois"			
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
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Peach"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	1	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Aspen Brown"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	1	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Wild Cherry"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	3	2	0
Custom Masonry Cleaner	1:4	2	3	2	0
Custom Masonry Cleaner	1:6	1	2	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Slate"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	1	2	0
Custom Masonry Cleaner	1:6	1	1	1	0

Scale used for reporting results of all categories

0 – no change

1 – slight

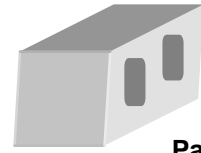
2 – moderate

3 – heavy

4 – excessive



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## TEST RESULTS – Surface Alterations Continued

<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Peanut"			
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	2	1	0
Custom Masonry Cleaner	1:6	1	2	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Cocoa"			
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	2	1	0
Custom Masonry Cleaner	1:6	1	2	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Soft Pink"			
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	1	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Charcoal"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	2	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Sierra Buff"			
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

Scale used for reporting results of all categories

0 – no change

1 – slight

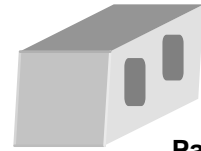
2 – moderate

3 – heavy

4 – excessive



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**TEST RESULTS – Surface Alterations Continued**

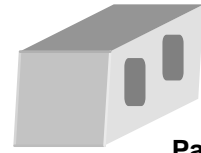
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> “Indy Red”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	2	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	2	2	2	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> “Natural Gray”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	2	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> “Harvest”			
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	1	1	1	0
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> “Empire Gray”			
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	2	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> “Dover 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

Scale used for reporting results of all categories

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



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**TEST RESULTS – Surface Alterations Continued**

<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> “Butter Cream”			
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
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> “Sandstone”			
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	2	1	0
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> “Burnt Sienna”			
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
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> “Chamois”			
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
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> “Peach”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	3	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

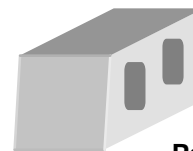
2 – moderate

3 – heavy

4 – excessive



# BLOCK PROGRAM LABORATORY REPORT



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## TEST RESULTS – Surface Alterations Continued

<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> "Aspen Brown"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	1	2	0
Custom Masonry Cleaner	1:4	2	1	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> "Wild Cherry"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	3	2	0
Custom Masonry Cleaner	1:4	2	3	2	0
Custom Masonry Cleaner	1:6	1	2	1	0
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> "Slate"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	1	2	1	0
Custom Masonry Cleaner	1:4	1	1	1	0
Custom Masonry Cleaner	1:6	0	1	0	0
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> "Peanut"			
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
<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> "Cocoa"			
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

Scale used for reporting results of all categories

0 – no change

1 – slight

2 – moderate

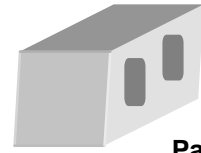
3 – heavy

4 – excessive





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## TEST RESULTS – Surface Alterations Continued

<b>Substrate:</b> Smooth-face CMU		<b>Pigment Color:</b> "Harvest"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	3	2	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Smooth-face lightweight (Haydite) CMU		<b>Pigment Color:</b> "Gray"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	4	2	0
Custom Masonry Cleaner	1:4	2	4	2	0
Custom Masonry Cleaner	1:6	2	4	2	0
<b>Substrate:</b> Split-face medium weight CMU		<b>Pigment Color:</b> "Gray"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	2	1	2	0
Custom Masonry Cleaner	1:4	2	1	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Smooth-face medium weight CMU		<b>Pigment Color:</b> "Gray"			
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
<b>Substrate:</b> Celtik wall CMU		<b>Pigment Color:</b> "Sheffield"			
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

Scale used for reporting results of all categories

0 – no change

1 – slight

2 – moderate

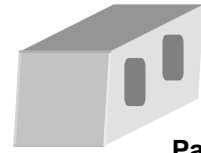
3 – heavy

4 – excessive





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## TEST RESULTS – Surface Alterations Continued

<b>Substrate:</b> Celtik wall CMU		<b>Pigment Color:</b> “Essex”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	2	2	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Celtik wall CMU		<b>Pigment Color:</b> “Oxford”			
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
<b>Substrate:</b> Keystone retaining wall CMU		<b>Pigment Color:</b> “Gray”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	1	2	0
Custom Masonry Cleaner	1:6	2	1	2	0
<b>Substrate:</b> Keystone retaining wall CMU		<b>Pigment Color:</b> “Beige”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	1	2	0
Custom Masonry Cleaner	1:6	2	1	2	0
<b>Substrate:</b> Keystone retaining wall CMU		<b>Pigment Color:</b> “Brown”			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner	1:4	2	1	2	0
Custom Masonry Cleaner	1:6	2	1	2	0

Scale used for reporting results of all categories

0 – no change

1 – slight

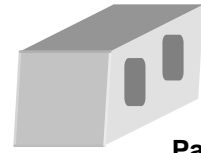
2 – moderate

3 – heavy

4 – excessive



# BLOCK PROGRAM LABORATORY REPORT



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## CONCLUSIONS – Surface Alterations

Based on test data, all dilutions of Sure Klean<sup>®</sup> Custom Masonry Cleaner tested affected the substrate in a similar manner, removing heavy concentrations of pigmented matrix from all of the CMUs, exposing small and large aggregate, and enhancing the natural appearance. The surface pigment removal on the smooth-face lightweight (Haydite) CMU was very severe, to the point of changing its color from light gray to dark gray.

**NOTE:** See Attachment #1 “PHOTO A & B” for visual surface alterations.

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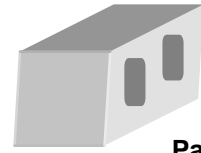
## RECOMMENDED PRODUCTS AND DILUTIONS – Surface Alterations

Based on these evaluations, all dilutions of Sure Klean<sup>®</sup> Custom Masonry Cleaner tested can be recommended for job-site testing on all of the samples except for the smooth-face lightweight (Haydite) CMU submitted by Schuster’s Building Products, Indianapolis, IN. They all are effective in removing excess mortar and assist in improving the color and uniformity of these CMUs. 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 Sure Klean<sup>®</sup> Custom Masonry Cleaner diluted with 6 parts fresh water.



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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

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### **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 job site. This solvent-free blend of silanes and oligomeric alkoxy siloxanes mixes easily with water to produce a penetrating water-repellent ideal for application to dense or porous masonry surfaces.

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### **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. Those CMUs requiring a second application were treated with the same procedure as above and then a second application was applied 1 hour later. All treatments were allowed to cure at least 72 hours prior to testing.

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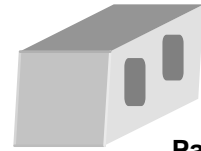
### **TEST METHODS – Protective Water Repellents**

#### **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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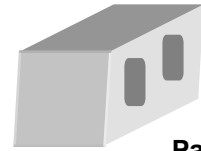
## TEST RESULTS – Protective Water Repellents

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

	RESULTS
<b>Split-face CMU "Empire Gray"</b>	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
<b>Split-face CMU "Dover White"</b>	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
<b>Split-face CMU "Butter Cream"</b>	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	56 mph
<b>Split-face CMU "Sandstone"</b>	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	58 mph
<b>Split-face CMU "Burnt Sienna"</b>	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
<b>Split-face CMU "Chamois"</b>	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
<b>Split-face CMU "Peach"</b>	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph



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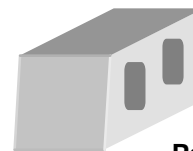
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## TEST RESULTS – Protective Water Repellents Continued

Split-face CMU “Aspen Brown”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Split-face CMU “Wild Cherry”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Split-face CMU “Slate”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Split-face CMU “Peanut”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Split-face CMU “Cocoa”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	54 mph
Split-face CMU “Soft Pink”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Split-face CMU “Charcoal”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Split-face CMU “Sierra Buff”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph



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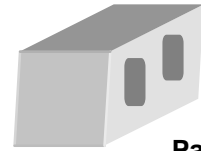
Page 22

## TEST RESULTS – Protective Water Repellents Continued

Split-face CMU “Indy Red”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Split-face CMU “Natural Gray”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Split-face CMU “Harvest”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Empire Gray”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Dover White”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Butter Cream”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Sandstone”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Burnt Sienna”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph



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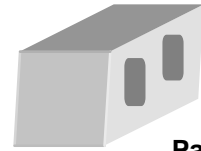
Page 23

## TEST RESULTS – Protective Water Repellents Continued

Smooth-face CMU “Chamois”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Peach”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Aspen Brown”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Wild Cherry”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Slate”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Peanut”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Cocoa”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU “Soft Pink”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph



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## TEST RESULTS – Protective Water Repellents Continued

Smooth-face CMU "Charcoal"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU "Sierra Buff"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU "Indy Red"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU "Natural Gray"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Smooth-face CMU "Harvest"	
Untreated Control	<40 mph
Custom Masonry Sealer	58 mph
Siloxane WB Concentrate (1:9)	51 mph
Smooth-face lightweight (Haydite) CMU "Gray"	
Untreated Control	<40 mph
Custom Masonry Sealer	59 mph
Siloxane WB Concentrate (1:9)	58 mph
Split-face medium weight CMU "Gray"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph





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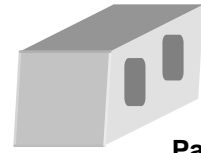
Page 25

## TEST RESULTS – Protective Water Repellents Continued

Smooth-face medium weight CMU “Gray”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Celtik wall CMU “Sheffield”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Celtik wall CMU “Essex”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Celtik wall CMU “Oxford”	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Keystone retaining wall CMU “Gray”	
Untreated Control	<40 mph
Custom Masonry Sealer	<40 mph
Custom Masonry Sealer (2 apps.)	<40 mph
Siloxane WB Concentrate (1:9)	<40 mph
Keystone retaining wall CMU “Beige”	
Untreated Control	<40 mph
Custom Masonry Sealer	<40 mph
Custom Masonry Sealer (2 apps.)	<40 mph
Siloxane WB Concentrate (1:9)	<40 mph
Keystone retaining wall CMU “Brown”	
Untreated Control	<40 mph
Custom Masonry Sealer	<40 mph
Custom Masonry Sealer (2 apps.)	<40 mph
Siloxane WB Concentrate (1:9)	<40 mph



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## CONCLUSIONS – Protective Water Repellents

Based upon laboratory evaluations, nearly all of the submitted samples exhibited above average water repellency when treated with Sure Klean<sup>®</sup> Custom Masonry Sealer or Sure Klean<sup>®</sup> Weather Seal Siloxane WB Concentrate diluted with nine parts fresh water. Adequate water repellency was not achieved on the three keystone retaining wall CMU samples. Sure Klean<sup>®</sup> Custom Masonry Sealer also enhanced the natural color of the submitted samples, while Sure Klean<sup>®</sup> Weather Seal Siloxane WB (1:9) did not change the appearance of the CMU.

**NOTE:** See Attachment #2 "PHOTO C" for visual color enhancement.

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## RECOMMENDATIONS – Protective Water Repellents

Based on evaluations, Sure Klean<sup>®</sup> Custom Masonry Sealer and Sure Klean<sup>®</sup> Weather Seal Siloxane WB Concentrate diluted with nine parts water can be recommended for job-site testing on all of the CMUs except for the gray, beige, and brown keystone retaining wall CMUs submitted by Schuster's Building Products, Indianapolis, IN.

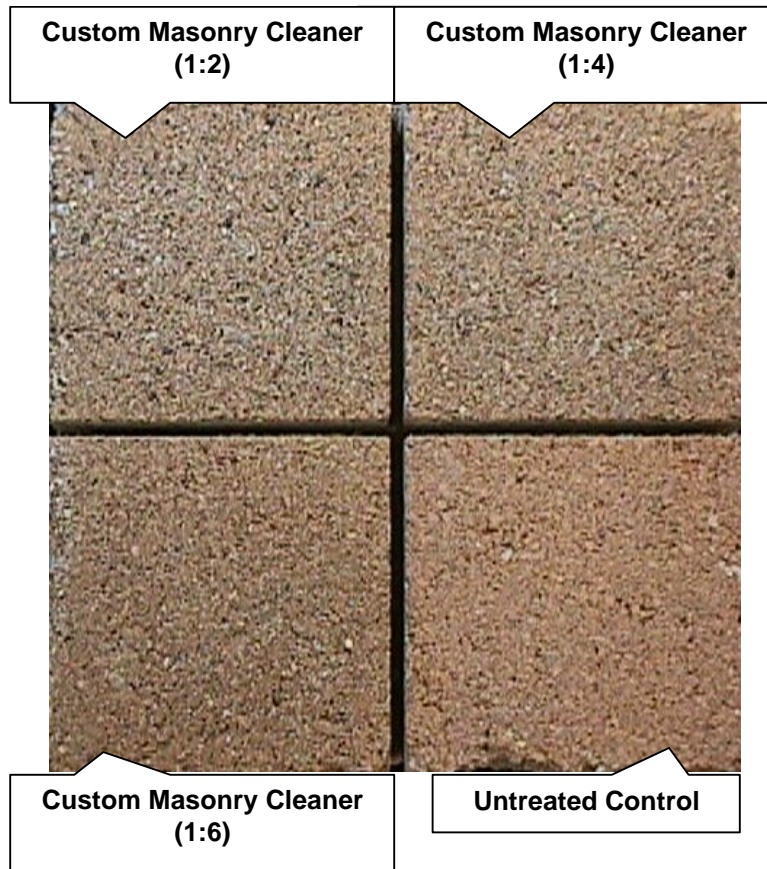
Apply all products in accordance with the manufacturer's recommendation provided on container labels and product data sheets. On-site testing should be conducted to determine the most appropriate water-repellent product and procedures for a particular project. See product literature for additional application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

Jason L. Anderson  
Materials Testing Technician

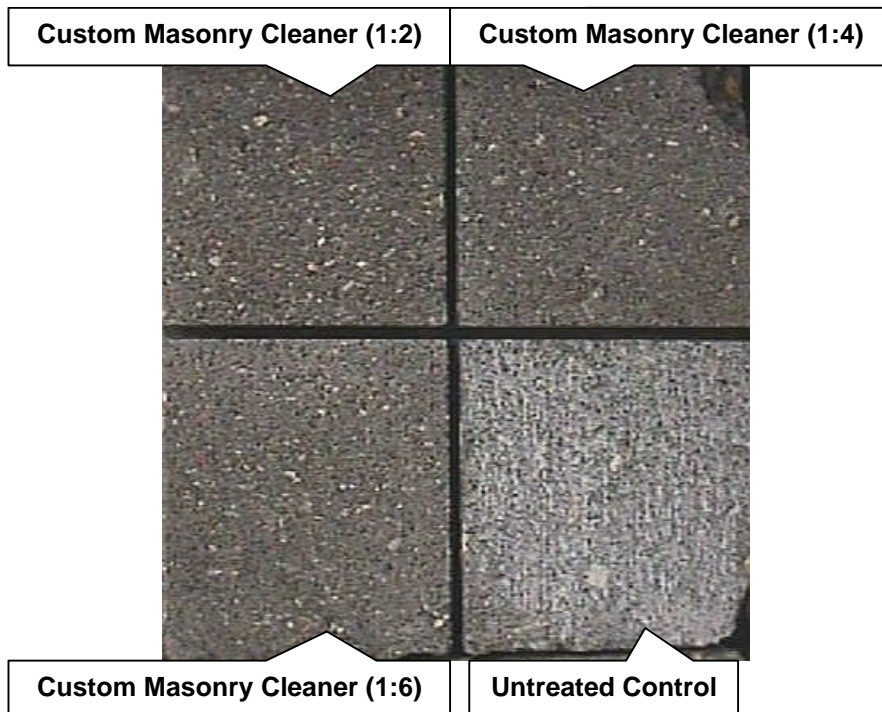
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**Attachment #1**

**PHOTO A** – “Peanut” after cleaning



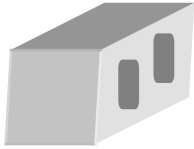
**PHOTO B** – Lightweight (Haydite) CMU after cleaning



**Attachment #2**

**PHOTO C – “Natural Gray” with water repellents**





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***Laboratory Report***

**Block Program Evaluation**

**Schuster's Building Products  
Indianapolis, IN**

***Project No. 0107-10 BP***

***Prepared For:***

**Mike Brankamp  
Schuster's Building Products  
901 E. Troy Ave.  
Indianapolis, IN 46203**

***Prepared By:***



***PROSOCO, Inc.  
September 2001***