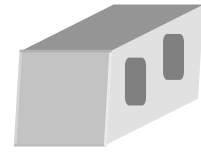




# BLOCK PROGRAM LABORATORY REPORT



**PROSOCO, Inc.**

Page 1

## TABLE OF CONTENTS

SAMPLES SUBMITTED ..... 3-4

PURPOSE OF TEST ..... 5-6

PRODUCTS EVALUATED..... 7

**SECTION A – CLEANING INTEGRALLY COLORED CMUs**

DESCRIPTION OF PRODUCTS EVALUATED..... 8

TEST METHOD ..... 8

TEST RESULTS ..... 9

CONCLUSIONS..... 9

RECOMMENDATIONS..... 9

**SECTION B – SURFACE ALTERATIONS**

DESCRIPTION OF PRODUCTS EVALUATED..... 10

TEST METHOD ..... 10

TEST RESULTS ..... 11-17

PHOTOGRAPHS (Surface Alterations) ..... 18

CONCLUSIONS..... 18

RECOMMENDATIONS..... 18

**SECTION C - PROTECTIVE WATER REPELLENTS**

DESCRIPTION OF PRODUCTS EVALUATED..... 19

TEST METHODS ..... 19

TEST RESULTS ..... 20-22

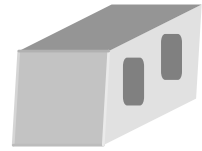
PHOTOGRAPHS (Water Repellents) ..... 22

CONCLUSIONS..... 23

RECOMMENDATIONS..... 23



# BLOCK PROGRAM LABORATORY REPORT



**PROSOCO, Inc.**

**Page 2**

---

## **ATTACHMENTS**

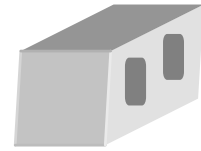
Technical Services TECH Note RILEM Test Method No. II.4

Product Data literature for all products evaluated

Material Safety Data Sheets for all products evaluated



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 3

**FOR:** Steve Lauer  
**cc:** Steve Long  
Tom Yager  
John Bourne

**SUBJECT:** Trenwyth Industries  
Emigsville, PA

**DATE:** May 24, 2001

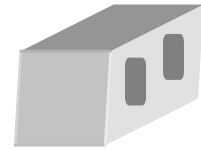
**PROJECT:** 0104-08 BP

**SAMPLES SUBMITTED:** 10 colors of rough-face, ground-face, burnished, and split-face CMUs, 4 of each

<u>Block</u>	<u>Color</u>	<u>Size</u>
Rough-face CMU	"Natural"	8" x 16" x 4"
Rough-face CMU	"Cambridge"	8" x 16" x 4"
Rough-face CMU	"PM"	8" x 16" x 4"
Rough-face CMU	"D"	8" x 16" x 4"
Rough-face CMU	"Graystone"	8" x 16" x 4"
Rough-face CMU	"RW"	8" x 16" x 4"
Rough-face CMU	"WG"	8" x 16" x 4"
Rough-face CMU	"Colonial Red"	8" x 16" x 4"
Rough-face CMU	"Rutherford"	8" x 16" x 4"
Rough-face CMU	"FF"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"Natural"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"Cambridge"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"PM"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"D"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"Graystone"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"RW"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"WG"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"Colonial Red"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"Rutherford"	8" x 16" x 4"
Ground-face CMU w/in-plant acrylic	"FF"	8" x 16" x 4"



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

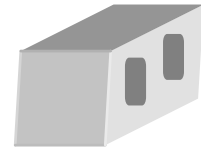
Page 4

<b><u>Block</u></b>	<b><u>Color</u></b>	<b><u>Size</u></b>
Burnished CMU	"Natural"	8" x 16" x 4"
Burnished CMU	"Cambridge"	8" x 16" x 4"
Burnished CMU	"PM"	8" x 16" x 4"
Burnished CMU	"D"	8" x 16" x 4"
Burnished CMU	"Graystone"	8" x 16" x 4"
Burnished CMU	"RW"	8" x 16" x 4"
Burnished CMU	"WG"	8" x 16" x 4"
Burnished CMU	"Colonial Red"	8" x 16" x 4"
Burnished CMU	"Rutherford"	8" x 16" x 4"
Burnished CMU	"FF"	8" x 16" x 4"
Split-face CMU	"Natural"	8" x 16" x 4"
Split-face CMU	"Cambridge"	8" x 16" x 4"
Split-face CMU	"PM"	8" x 16" x 4"
Split-face CMU	"D"	8" x 16" x 4"
Split-face CMU	"Graystone"	8" x 16" x 4"
Split-face CMU	"RW"	8" x 16" x 4"
Split-face CMU	"WG"	8" x 16" x 4"
Split-face CMU	"Colonial Red"	8" x 16" x 4"
Split-face CMU	"Rutherford"	8" x 16" x 4"
Split-face CMU	"FF"	8" x 16" x 4"

**Submitted by:** Steve Lauer  
Trenwyth Industries  
Emigsville, PA



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 5

## PURPOSE OF TESTING:

Ten colors of integrally colored rough-face, ground-face, burnished, and split-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<sup>®</sup> Custom Masonry Cleaner at various dilutions was evaluated for removal of laboratory applied mortar from the rough and split-face CMUs. Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner at various dilutions was evaluated for removal of laboratory applied mortar from the ground and burnished 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 3 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<sup>®</sup> Custom Masonry Cleaner was tested at various dilutions on the rough and split-face CMUs and Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner was tested at various dilutions on the ground and burnished CMUs 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:

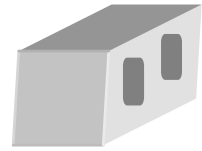
0 – no change	3 – heavy
1 – slight	4 – excessive
2 – moderate	

**\* 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.



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 6

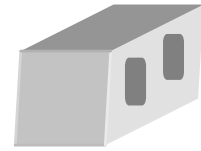
---

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 were evaluated for their ability to provide water repellency to the rough and split-face CMUs. The ground-face and burnished CMUs were not evaluated for water repellency due to in-plant surface treatments.



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 7

## CLEANING PRODUCTS EVALUATED

BLOCK TYPE	Custom Masonry Cleaner
All Colors of Rough-face and Split-face CMUs	1:2
	1:4
	1:6
BLOCK TYPE	Burnished Custom Masonry Cleaner
All Colors of Ground-face and Burnished CMUs	1:2
	1:3

## SURFACE ALTERATION PRODUCTS EVALUATED

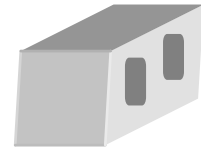
BLOCK TYPE	Custom Masonry Cleaner
All Colors of Rough-face and Split-face CMUs	1:2
	1:4
	1:6
BLOCK TYPE	Burnished Custom Masonry Cleaner
All Colors of Ground-face and Burnished CMUs	1:2
	1:3

## WATER REPELLENT PRODUCTS EVALUATED

Block Type	Product	Dilution
All Colors of Rough-face and Split-face CMUs	Custom Masonry Sealer	Concentrate
	Siloxane WB Concentrate	1:9



# BLOCK PROGRAM LABORATORY REPORT



## 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.

**Sure Klean® Burnished Custom Masonry Cleaner** – A general purpose, nonetching acidic cleaner for custom masonry and colored concrete. Removes rust, mud, oil, atmospheric dirt, and other stains without altering the surface texture. Liquid concentrate for dilution with 2-3 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 appropriate exposure time.
 

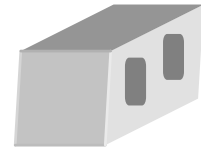
Custom Masonry Cleaner .....	3 minutes
Burnished Custom Masonry Cleaner .....	5 minutes
4. Reapply the products and moderately agitate with a brush.
5. Pressure rinse thoroughly.\*
6. Allow the surface to dry for at least 18 hours and visually examine.

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





# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 9

## Test Results - Cleaning

Block Type	Cleaner	Dilution	Cure	Effectiveness
All Colors of Rough-face and Split-face CMUs	Custom Masonry Cleaner	1:2	3 day	100%
		1:4		100%
		1:6		100%
		1:2	14 day	100%
		1:4		100%
		1:6		100%
All Colors of Ground-face and Burnished CMUs	Burnished Custom Masonry Cleaner	1:2	3 day	100%
		1:3		100%
		1:2	14 day	100%
		1:3		100%

## 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<sup>®</sup> Custom Masonry Cleaner tested affected the substrate in a similar manner, removing heavy concentrations of pigmented matrix from the rough-face and split-face CMUs, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit. All dilutions of Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner tested affected the substrate in a similar manner, causing very few if any surface alterations on the ground-face and burnished CMUs.

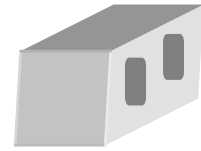
## RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING:

Based on these evaluations, all of the dilutions of Sure Klean<sup>®</sup> Custom Masonry Cleaner tested can be recommended for job site testing on the submitted rough-face and split-face CMUs. Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner tested can be recommended for job site testing on the ground-face and burnished CMUs submitted by Trenwyth Industries, Emigsville, PA. 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 or Burnished Custom Masonry diluted with 3 parts fresh water.



# BLOCK PROGRAM LABORATORY REPORT



## **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.

**Sure Klean® Burnished Custom Masonry Cleaner** – A general purpose, nonetching acidic cleaner for custom masonry and colored concrete. Removes rust, mud, oil, atmospheric dirt, and other stains without altering the surface texture. Liquid concentrate for dilution with 2-3 parts water. Apply by brush or low-pressure spray.

### **TEST METHOD – Surface Alteration Testing:**

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

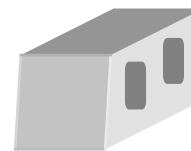
1. Prewet the surface with water.
2. Apply each cleaner at the appropriate dilutions.
3. Allow appropriate exposure time.
 

Custom Masonry Cleaner .....	3 minutes
Burnished Custom Masonry Cleaner .....	5 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.



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 11

**Surface Alteration Results:**

<b>Substrate:</b> Rough-face CMU		<b>Pigment Color:</b> "Natural"			
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> Rough-face CMU		<b>Pigment Color:</b> "Cambridge"			
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> Rough-face CMU		<b>Pigment Color:</b> "PM"			
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> Rough-face CMU		<b>Pigment Color:</b> "D"			
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> Rough-face CMU		<b>Pigment Color:</b> "Graystone"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	0	0	0	0
Custom Masonry Cleaner	1:4	0	0	0	0
Custom Masonry Cleaner	1:6	0	0	0	0

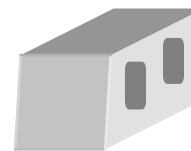
Scale used for reporting results of all categories

0 – no change  
1 – slight  
2 – moderate

3 – heavy  
4 – excessive



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 12

**Surface Alteration Results Continued:**

<b>Substrate:</b> Rough-face CMU		<b>Pigment Color:</b> "RW"			
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> Rough-face CMU		<b>Pigment Color:</b> "WG"			
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> Rough-face CMU		<b>Pigment Color:</b> "Colonial Red"			
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> Rough-face CMU		<b>Pigment Color:</b> "Rutherford"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	0	0	0	0
Custom Masonry Cleaner	1:4	0	0	0	0
Custom Masonry Cleaner	1:6	0	0	0	0
<b>Substrate:</b> Rough-face CMU		<b>Pigment Color:</b> "FF"			
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

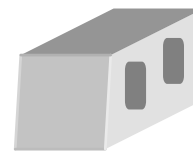
Scale used for reporting results of all categories

0 – no change  
1 – slight  
2 – moderate

3 – heavy  
4 – excessive



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 13

**Surface Alteration Results Continued:**

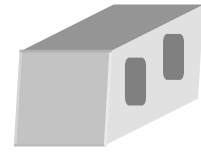
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "Natural"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "Cambridge"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "PM"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "D"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "Graystone"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "RW"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "WG"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0

Scale used for reporting results of all categories

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



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 14

**Surface Alteration Results Continued:**

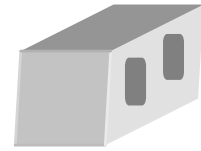
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "Colonial Red"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "Rutherford"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Ground-face CMU		<b>Pigment Color:</b> "FF"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "Natural"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "Cambridge"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "PM"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "D"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0

Scale used for reporting results of all categories

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



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 15

**Surface Alteration Results Continued:**

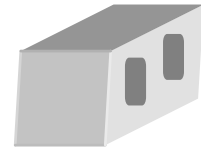
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "Graystone"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "RW"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "WG"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "Colonial Red"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "Rutherford"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0
<b>Substrate:</b> Burnished CMU		<b>Pigment Color:</b> "FF"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Burnished Custom Masonry Clnr	1:2	0	0	0	0
Burnished Custom Masonry Clnr	1:3	0	0	0	0

Scale used for reporting results of all categories

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



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 16

**Surface Alteration Results Continued:**

<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Natural"			
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	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Cambridge"			
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> "PM"			
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	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "D"			
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	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Graystone"			
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

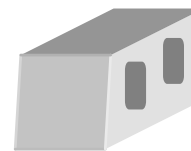
Scale used for reporting results of all categories

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





# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 17

**Surface Alteration Results Continued:**

<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "RW"			
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> "WG"			
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	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Colonial Red"			
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	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "Rutherford"			
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	1	1	1	0
Custom Masonry Cleaner	1:6	1	1	1	0
<b>Substrate:</b> Split-face CMU		<b>Pigment Color:</b> "FF"			
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

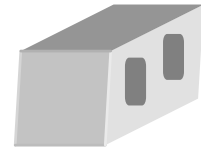
Scale used for reporting results of all categories

0 – no change  
1 – slight  
2 – moderate

3 – heavy  
4 – excessive



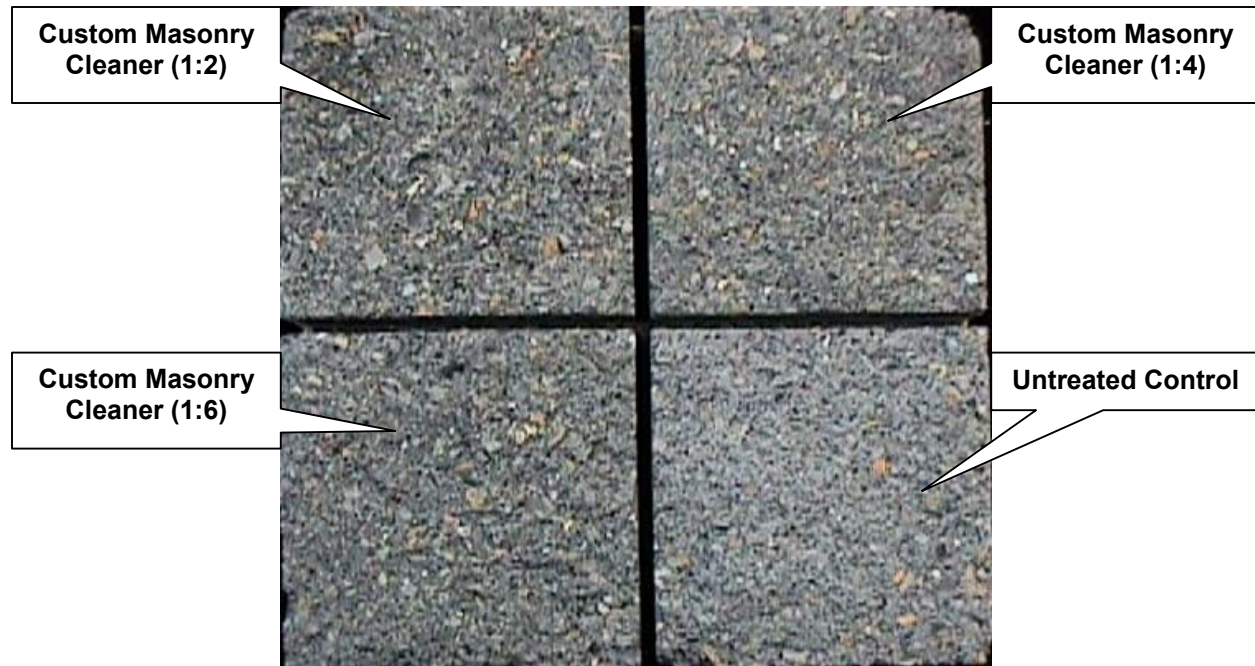
# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 18

Photo of split-face "D" after 14 day cleaning:



## CONCLUSIONS – Surface Alterations:

Based on the 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 the rough-face and split-face CMUs, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit. All dilutions of Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner tested affected the substrate in a similar manner, causing very few if any surface alterations on the ground-face and burnished CMUs.

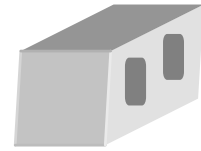
## RECOMMENDED PRODUCTS AND DILUTIONS – SURFACE ALTERATIONS:

Based on these evaluations, all of the dilutions of Sure Klean<sup>®</sup> Custom Masonry Cleaner tested can be recommended for job site testing on the submitted rough-face and split-face CMUs. Both dilutions of Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner tested can be recommended for job site testing on the ground-face and burnished CMUs submitted by Trenwyth Industries, Emigsville, PA. They all are effective in removing excess mortar and 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 or Burnished Custom Masonry diluted with 3 parts fresh water.



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 19

---

## **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 alkoxy siloxanes 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. Rough-face CMU type “D” received a second coat of Sure Klean® Custom Masonry Sealer one week after the first coat. All treatments were allowed to cure at least 72 hours prior to testing.

---

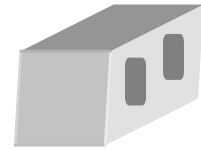
## **TEST METHODS - Protective Water Repellents:**

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

The water absorption tube test simulating wind driven rain conditions was performed. This test simulates 60 mile per hour wind driven rain conditions for a period of 20 minutes.



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 20

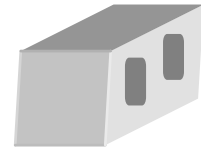
## TEST RESULTS - Protective Water Repellents:

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

RESULTS	
Rough-face "Natural"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Rough-face "Cambridge"	
Untreated Control	43 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Rough-face "PM"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Rough-face "D"	
Untreated Control	<40 mph
Custom Masonry Sealer	<40 mph
Custom Masonry Sealer (2 coats)	<40 mph
Siloxane WB (1:9)	<40 mph
Rough-face "Graystone"	
Untreated Control	57 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Rough-face "RW"	
Untreated Control	45 mph
Custom Masonry Sealer	59 mph
Siloxane WB (1:9)	57 mph
Rough-face "WG"	
Untreated Control	42 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph



# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

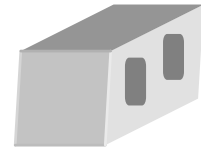
Page 21

**Water Repellent Results Continued:**

Rough-face "Colonial Red"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Rough-face "Rutherford"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Rough-face "FF"	
Untreated Control	50 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Split-face "Natural"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Split-face "Cambridge"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Split-face "PM"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	59 mph
Split-face "D"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Split-face "Graystone"	
Untreated Control	57 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	58 mph



# BLOCK PROGRAM LABORATORY REPORT

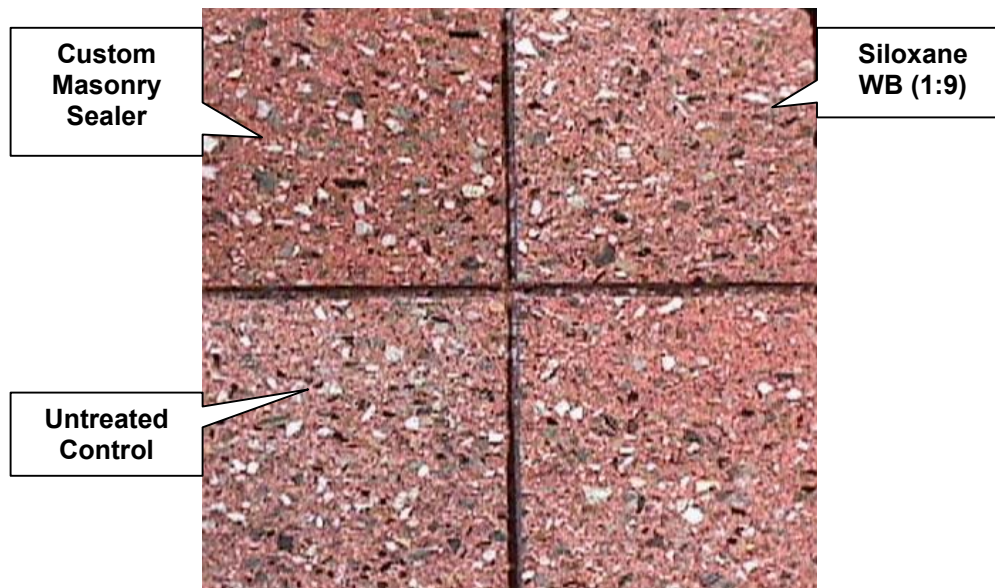


PROSOCO, Inc.

Page 22

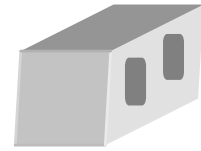
Split-face "RW"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Split-face "WG"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Split-face "Colonial Red"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Split-face "Rutherford"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	60 mph
Split-face "FF"	
Untreated Control	<40 mph
Custom Masonry Sealer	60 mph
Siloxane WB (1:9)	59 mph

Photo of rough-face "Colonial Red" after treatment:





# BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 23

---

## CONCLUSIONS - Protective Water Repellents:

Based upon laboratory evaluations, nearly all colors of the rough-face and split-face CMUs 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. The rough-face CMU, color "D", exhibited below average water repellency due to its high porosity. 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.

---

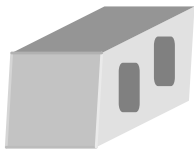
## RECOMMENDATIONS - Protective Water Repellents:

Based on evaluations, Sure Klean<sup>®</sup> Custom Masonry Sealer and Sure Klean<sup>®</sup> Weather Seal Siloxane WB diluted with nine parts fresh water can be recommended for job site testing on all rough-face and split-face types except for rough-face, color "D", submitted by Trenwyth Industries, Emigsville, PA.

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

JLA/



---

***Laboratory Report***

**Block Program Evaluation**

**Trenwyth Industries  
Emigsville, PA**

***Project No. 0104-08 BP***

***Prepared For:***

**Steve Lauer  
Trenwyth Industries  
P.O. Box 438  
One Connelly Road  
Emigsville, PA 17318**

***Prepared By:***



***PROSOCO, Inc.  
May 2001***