



TABLE OF CONTENTS	
SAMPLES SUBMITTED	2
PURPOSE OF TEST	3-4
PRODUCTS EVALUATED	5
SECTION A – CLEANING INTEGRALLY COLORED CMUs	
DESCRIPTION OF PRODUCTS EVALUATED	6
TEST METHOD	6
TEST RESULTS	7
CONCLUSIONS	8
RECOMMENDATIONS	8
SECTION B – SURFACE ALTERATIONS	
DESCRIPTION OF PRODUCTS EVALUATED	9
TEST METHOD	9
TEST RESULTS	-12
PHOTOGRAPHS OF CMU BEFORE & AFTER SURFACE ALTERATION TESTING	13
CONCLUSIONS	14
RECOMMENDATIONS	14
SECTION C - PROTECTIVE WATER REPELLENTS	
DESCRIPTION OF PRODUCTS EVALUATED	15
TEST METHODS	15
TEST RESULTS	-17
PHOTOGRAPH OF CMU W/ WATER REPELLENTS	.18
CONCLUSIONS	19
RECOMMENDATIONS	19
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





FOR: Alan Frost Cc: Mark Williams

Perry Surber John Bourne

SUBJECT: Reading Rock

Cincinnati, OH

DATE: March 28, 2001

PROJECT: 0101-11 BP

SAMPLES SUBMITTED: 2 types of cast stone CMUs and 8 types of split-face CMUs (faces only)

Block	<u>Color</u>	<u>Size</u>
(2) Smooth Cast Stone CMU	"Tan"	7½" x 24" x 3½"
(2) Smooth Cast Stone CMU	"Gray"	7½" x 24" x 3½"
Split-face CMU	"Sandstone Buff"	7½" x 15½" x 2
Split-face CMU	"Camel Tan"	7½" x 15½" x 2
Split-face CMU	"Chocolate Brown"	7½" x 15½" x 2
Split-face CMU	"Purple Haze"	7½" x 15½" x 2
Split-face CMU	"Sunset Rose"	7½" x 15½" x 2
Split-face CMU	"Harvest"	7½" x 15½" x 2
Split-face CMU	"Crème Buff"	7½" x 15½" x 2
Split-face CMU	"Midnight Sky"	7½" x 15½" x 2

Submitted by: Mark Williams





PURPOSE OF TESTING:

Two types of smooth cast stone CMUs and eight types of 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[®] Vana Trol[®], Sure Klean[®] Burnished Custom Masonry Cleaner, Sure Klean[®] 600 Detergent, Sure Klean[®] Custom Masonry Cleaner were evaluated for removal of laboratory applied mortar from the cast stone CMUs. Sure Klean[®] Custom Masonry Cleaner and Sure Klean[®] Burnished Custom Masonry Cleaner were evaluated for removal of laboratory applied mortar from the split-face CMUs.

To simulate new construction soiling, all cast stone blocks and 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 cast stone cast stone block and CMU and filled with a wet mixture of Ash Grove[®] Type S cementitious mortar. The wet, mortar-filled cylinder is allowed to remain in contact with the CMU for 10 minutes before removal.

Soiled cast stone blocks and 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[®] 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[®] Vana Trol[®], Sure Klean[®] Burnished Custom Masonry Cleaner, Sure Klean[®] 600 Detergent, and Sure Klean[®] Custom Masonry Cleaner were tested at various dilutions on the cast stone 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. Sure Klean[®] Custom Masonry Cleaner and Sure Klean[®] Burnished Custom masonry cleaner were tested at various dilutions on the split-face CMUs. Surface Alteration was evaluated visually based upon perceived discoloration or erosion/etching of the masonry unit.

Aggregate Exposure is the visual examination of the cast stone and split-face CMUs comparing aggregate exposure of the untreated control surface to surfaces cleaned with selected product(s) at given dilutions.

<u>Surface Pigment Alteration/Removal*</u> is the visual examination of the cast stone and split-face CMUs comparing the surface pigmentation of the untreated control to surfaces cleaned with selected product(s) at given dilutions.

<u>Matrix Erosion</u> 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 cast stone and split-face CMUs.

<u>Staining</u> 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[®] Weather Seal Siloxane WB Concentrate, and Sure Klean[®] Custom Masonry Sealer were evaluated for their ability to provide water repellency to the submitted samples.





CLEANING PRODUCTS EVALUATED

BLOCK TYPE	Vana Trol [®]	Burnished Custom Masonry Cleaner	600 Detergent	Custom Masonry Cleaner
	1:6	1:2	1:6	1:2
All Colors of Smooth Cast Stone CMUs				1:4
545. 515.1 6 611.66	1:8	1:3	1:8	1:6

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

SURFACE ALTERATION PRODUCTS EVALUATED

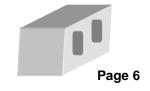
BLOCK TYPE	Vana Trol [®]	Burnished Custom Masonry Cleaner	600 Detergent	Custom Masonry Cleaner
	1:6	1:2	1:6	1:2
All Colors of Smooth Cast Stone CMUs	-		-	1:4
Cast Stoffe Civios	1:8	1:3	1:8	1:6

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

WATER REPELLENT PRODUCTS EVALUATED

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





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® Vana Trol® – A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, manganese and other metallic stains. Use on: gray, brown, white and most light-colored brick; natural stone; cast stone. Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 4-25 parts water. Apply by brush or low-pressure spray.

Sure Klean[®] **600 Detergent** – A general purpose, concentrated acidic cleaner for brick, tile and concrete surfaces. Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 4-25 parts water. Apply by brush or low-pressure spray.

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.

Vana Trol [®]	5 minutes
600 Detergent	
Custom Masonry Cleaner	
Burnished Custom Masonry Cleaner	

- 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.



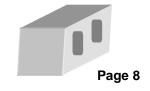


Test Results - Cleaning

Block Type	Cleaner	Dilution	Cure	Effectiveness
		1:6	0.155	99%
All Colors of	®	1:8	3 day	98%
Smooth Cast Stone CMUs	Vana Trol [®]	1:6	44.	98%
		1:8	14 day	98%
		1:2		99%
All Colors of	Burnished Custom	1:3	- 3 day	99%
Smooth Cast Stone CMUs	Masonry Cleaner	1:2		98%
	Cleaner	1:3	14 day	96%
		1:6		99%
All Colors of Smooth Cast Stone CMUs		1:8	3 day	99%
	600 Detergent	1:6		99%
		1:8	14 day	98%
		1:2		100%
		1:4	3 day	99%
All Colors of Smooth Cast Stone CMUs	Custom Masonry	1:6]	98%
	Cleaner	1:2		100%
	Olcario.	1:4	14 day	99%
		1:6		98%

		1:2		98%
		1:4	3 day	98%
All Colors of	Custom	1:6		98%
Split-face CMUs	Masonry Cleaner	1:2		98%
	O Garrer	1:4	14 day	97%
		1:6		95%
		1:2	2 day	97%
All Colors of	Burnished Custom	1:2	- 3 day	97% 95%
All Colors of Split-face CMUs			3 day	





CONCLUSIONS - Cleaning:

Based on the test data, all of the submitted smooth cast stone and split-face CMU 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 concentrations and surface agitation to minimize aggregate exposure.

All dilutions of Sure Klean[®] Vana Trol[®], Sure Klean[®] 600 Detergent, Sure Klean[®] Custom Masonry Cleaner, and Sure Klean[®] Burnished Custom Masonry Cleaner tested affected the smooth cast stone and split-face CMUs in a similar manner. They removed heavy concentrations of pigmented matrix from the cast stone blocks and CMUs, exposing small and large aggregate, and enhancing their natural appearance.

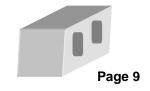
RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING:

Based on these evaluations, all of the dilutions of Sure Klean[®] Vana Trol, Sure Klean[®] Burnished Custom Masonry Cleaner, Sure Klean[®] 600 Detergent, and Sure Klean[®] Custom Masonry Cleaner tested can be recommended for job site testing on the smooth cast stone CMUs submitted by Reading Rock, Cincinnati, OH. All of the dilutions of Sure Klean[®] Custom Masonry Cleaner and Sure Klean[®] Burnished Custom Masonry Cleaner tested can be recommended for job site testing on the split-face CMUs submitted by Reading Rock, Cincinnati, OH. 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 the highest possible dilution of the recommended cleaner.

Cleaner	Recommended Dilution
Sure Klean [®] Vana Trol [®]	1:8
Sure Klean [®] 600 Detergent	1:8
Sure Klean [®] Custom Masonry Cleaner	1:6
Sure Klean [®] Burnished Custom Masonry Cleaner	1:3





SECTION B – Surface Alterations:

DESCRIPTION OF PRODUCTS EVALUATED – Surface Alterations:

Sure Klean® Vana Trol® – A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, manganese and other metallic stains. Use on: gray, brown, white and most light-colored brick; natural stone; cast stone. Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 4-25 parts water. Apply by brush or low-pressure spray.

Sure Klean[®] **600 Detergent** – A general purpose, concentrated acidic cleaner for brick, tile and concrete surfaces. Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 4-25 parts water. Apply by brush or low-pressure spray.

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:

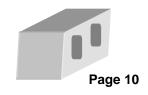
Dilution ratios refer to mixtures of parts concentrated cleaner: parts fresh water. Chemical cleaners were evaluated using the following procedure:

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

Vana Trol [®]	5 minutes
600 Detergent	5 minutes
Custom Masonry Cleaner	3 minutes
Burnished Custom Masonry Cleaner	

- 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.





Surface Alteration Results:

Substrate: Smooth Cast Stone	Pigment Co	olor: "Tan"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Vana Trol [®]	1:6	0	1	0	0
Vana Trol [®]	1:8	0	1	0	0
Burnished Custom Masonry Clnr	1:2	0	1	0	0
Burnished Custom Masonry Clnr	1:3	0	1	0	0
600 Detergent	1:6	0	1	0	0
600 Detergent	1:8	0	1	0	0
Custom Masonry Cleaner	1:2	0	1	0	0
Custom Masonry Cleaner	1:4	0	1	0	0
Custom Masonry Cleaner	1:6	0	1	0	0
Substrate: Smooth Cast Stone	Pigment Co	olor: "Gray"			
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Vana Trol [®]	1:6	0	1	0	0
Vana Trol [®]	1:8	0	1	0	0
Burnished Custom Masonry Clnr	1:2	0	1	0	0
Burnished Custom Masonry Clnr	1:3	0	1	0	0
600 Detergent	1:6	0	1	0	0
600 Detergent	1:8	0	1	0	0
Custom Masonry Cleaner	1:2	0	1	0	0
Custom Masonry Cleaner	1:4	0	1	0	0
Custom Masonry Cleaner	1:6	0	1	0	0

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

0 – no change

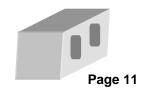
3 – heavy

1 – slight

4 – excessive

2 – moderate





Surface Alteration Results Continued:

Substrate: Split-face CMU	Pigment Color: "Sandstone Buff"				
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
Burnished Custom Masonry Clnr	1:2	1	1	1	0
Burnished Custom Masonry Clnr	1:3	1	1	1	0
Substrate: Split-face CMU	Pigment Co	lor: "Camel T			
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
Burnished Custom Masonry Clnr	1:2	1	1	1	0
Burnished Custom Masonry Clnr	1:3	1	1	1	0
Substrate: Split-face CMU	Pigment Color: "Chocolate 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	2	2	0
Custom Masonry Cleaner	1:6	1	2	1	0
Burnished Custom Masonry Clnr	1:2	1	1	1	0
Burnished Custom Masonry Clnr	1:3	1	1	1	0
Substrate: Split-face CMU	Pigment Color: "Purple Haze"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal	Matrix Erosion	Staining
Custom Masonry Cleaner	1:2	3	2	3	0
Custom Masonry Cleaner Custom Masonry Cleaner	1:2 1:4	3 2	2 2		0
•				3	
Custom Masonry Cleaner	1:4	2	2	3 2	0

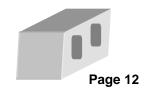
The following is the scale used for reporting results of all categories:

0 – no change 1 – slight 3 – heavy

2 - moderate

4 – excessive





Surface Alteration Results Continued:

Substrate: Split-face CMU	Pigment Co	olor: "Sunset R			
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
Burnished Custom Masonry Clnr	1:2	1	1	1	0
Burnished Custom Masonry Clnr	1:3	1	1	1	0
Substrate: Split-face CMU	Pigment Co	lor: "Harvest"			
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
Burnished Custom Masonry Clnr	1:2	1	1	1	0
Burnished Custom Masonry Clnr	1:3	1	1	1	0
Substrate: Split-face CMU	Pigment Color: "Crème Buff"				
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
Burnished Custom Masonry Clnr	1:2	1	1	1	0
Burnished Custom Masonry Clnr	1:3	1	1	1	0
Substrate: Split-face CMU	Pigment Color: "Midnight Sky"				
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
Burnished Custom Masonry Clnr	1:2	1	1	1	0
Burnished Custom Masonry Clnr	1:3	1	1	1	0

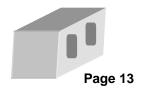
The following is the scale used for reporting results of all categories:

0 – no change 1 – slight 3 – heavy

2 – moderate

4 – excessive





Photos of "Crème Buff" split-face CMU before and after cleaning:









CONCLUSIONS - Surface Alterations:

Based upon laboratory evaluations none of the PROSOCO, Inc. cleaners evaluated produced any adverse effects on the surfaces of the substrates tested.

All dilutions of Sure Klean[®] Vana Trol[®], Sure Klean[®] 600 Detergent, Sure Klean[®] Custom Masonry Cleaner, and Sure Klean[®] Burnished Custom Masonry Cleaner tested affected the smooth cast stone CMUs in a similar manner: removing heavy concentrations of pigmented matrix and enhancing the natural appearance of the integrally colored concrete masonry unit.

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

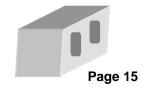
All dilutions of Sure Klean[®] Burnished Custom Masonry Cleaner tested affected the split-face CMUs in a similar manner, limiting the removal of surface finish, limiting the exposure of small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit.

RECOMMENDED PRODUCTS AND DILUTIONS - SURFACE ALTERATIONS:

Based on evaluations, Sure Klean[®] Vana Trol[®], Sure Klean[®] 600 Detergent, Sure Klean[®] Custom Masonry Cleaner, and Sure Klean[®] Burnished Custom Masonry Cleaner in all dilutions are recommended for job site testing on all types of the smooth cast stone CMUs. Sure Klean[®] Custom Masonry Cleaner and Sure Klean[®] Burnished Custom Masonry Cleaner in all dilutions are recommended for job site testing on all types of the submitted split-face CMUs from Reading Rock, Cincinnati, OH.

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





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 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.

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.

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 14 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.





TEST RESULTS - Protective Water Repellents:

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

"Tan" cast stone)
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Gray" cast ston	е
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Sandstone Buff" spli	t-face
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Camel Tan" split-f	ace
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Chocolate Brown" sp	lit-face
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Purple Haze" split-	face
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Sunset Rose" split-	face
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph





TEST RESULTS Continued- Protective Water Repellents:

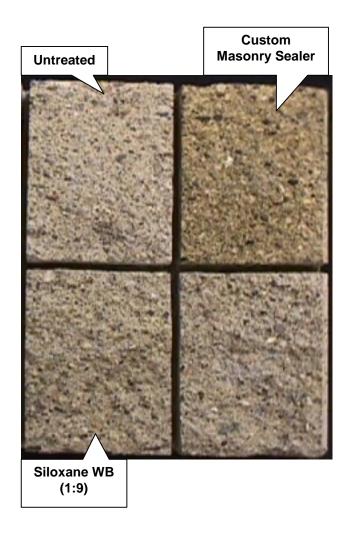
"Harvest" split-face	
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Crème Buff" split-face	
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Midnight Sky" split-face	
Untreated Control	<40 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph





Water Repellent Treatment Photos:

"Crème Buff"







CONCLUSIONS - Protective Water Repellents:

Based upon laboratory evaluations, all of the submitted cast stone and split-face CMUs exhibited above average water repellency when treated with Sure Klean[®] Weather Seal Siloxane WB Concentrate diluted one part cleaner to nine parts fresh water and Sure Klean[®] Custom Masonry Sealer. Sure Klean[®] Custom Masonry Sealer enhanced the natural appearance of the CMUs. There was no enhancement with any other treatment or on the smooth cast stone CMUs.

RECOMMENDATIONS - Protective Water Repellents:

Based on evaluations, Sure Klean[®] Weather Seal WB Concentrate diluted one part cleaner to nine parts fresh water and Sure Klean[®] Custom Masonry Sealer can be recommended for jobsite testing on all types of the smooth cast stone and split-face CMUs submitted by Reading Rock, Cincinnati, OH.

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 Technical Services Analyst

Jason La anderson

JLA/csm



Laboratory Report

Block Program Evaluation

Reading Rock Cincinnati, OH

Project No. 0101-11 BP

Prepared For:

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