

Laboratory Report

Pallet Tag Program Evaluation

Anchor Block Company North St. Paul, MN

Project No. 0211-15 PTP

Prepared For:

Mark Severson

Anchor Block Company 2300 McKnight Road North St. Paul, MN

Prepared By:



PROSOCO, Inc. March 2003



PROSOCO, Inc.



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ATTACHMENTS

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



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FOR: cc:	Mark Severson Kevin Gwinn John Bourne Stephen Dean
SUBJECT:	Anchor Block Company North St. Paul, MN
DATE:	March 20, 2003

PROJECT: 0211-15 PTP

SAMPLES SUBMITTED: 36 types of integrally colored CMU's.

<u>Block</u>	<u>Color</u>	Size
Burnished Block W/TK Bright Seal	"Parchment"	15½" x 7½" x 1"
Burnished Block W/TK Bright Seal	"Midnight"	15½" x 7½" x 1"
Burnished Block W/TK Bright Seal	"Santana"	15½" x 7½" x 1"
Burnished Block W/TK Bright Seal	"Warmtone"	15½" x 7½" x 1"
Burnished Block W/TK Bright Seal	"Antique White"	15½" x 7½" x 1"
Burnished Block W/TK Bright Seal	"Cedar"	15½" x 7½" x 1"
Concrete Brick Rock-face	"Mesabi"	11½" x 3½" x 1"
Concrete Brick Smooth-face	"Mesabi"	11½" x 3½" x 1"
Concrete Brick Burnished W/TK Bright Seal	"Mesabi"	11½" x 3½" x 1"
Concrete Brick Rock-face	"North Oaks"	11½" x 3½" x 1"
Concrete Brick Smooth-face	"North Oaks"	11½" x 3½" x 1"
Concrete Brick Burnished W/TK Bright Seal	"North Oaks"	11½" x 3½" x 1"
Rock-face Block	"Granite # 529"	15½" x 7½" x 1"
Smooth-face Block	"Granite # 529"	15½" x 7½" x 1"
Rock-face Block	"Hickory # 538"	15½" x 7½" x 1"
Smooth-face Block	"Hickory # 538"	15½" x 7½" x 1"
Rock-face Block	"Kasota # 707"	15½" x 7½" x 1"
Smooth-face Block	"Kasota # 707"	15½" x 7½" x 1"
Rock-face Block	"Adobe # 276"	15½" x 7½" x 1"
Smooth-face Block	"Adobe # 276"	15½" x 7½" x 1"
Rock-face Block	"October Yellow # 281"	15½" x 7½" x 1"
Smooth-face Block	"October Yellow # 281"	15½" x 7½" x 1"
Rock-face Block	"Toffee # 293"	15½" x 7½" x 1"
Smooth-face Block	"Toffee # 293"	15½" x 7½" x 1"
Rock-face Block	"Mojave # 287"	15½" x 7½" x 1"
Smooth-face Block	"Mojave # 287"	15½" x 7½" x 1"
Rock-face Block	"Sedona # 436"	15½" x 7½" x 1"
Smooth-face Block	"Sedona # 436"	15½" x 7½" x 1"
Rock-face Block	"Sahara # 296"	15½" x 7½" x 1"
Smooth-face Block	"Sahara # 296"	15½" x 7½" x 1"
Rock-face Block	"Isanti Blend # 340"	15½" x 7½" x 1"
Smooth-face Block	"Isanti Blend # 340"	15½" x 7½" x 1"
Rock-face Block	"Winter White # 301"	15½" x 7½" x 1"
Smooth-face Block	"Winter White # 301"	15½" x 7½" x 1"
Rock-face Block	"Parchment # 300"	15½" x 7½" x 1"
Smooth-face Block	"Parchment # 300"	15½" x 7½" x 1"

Submitted By: Mark Severson







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PURPOSE OF TESTING:

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Thirty-six integrally colored concrete bricks, concrete blocks, and integrally colored burnished blocks 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[®] Custom Masonry Cleaner, Sure Klean[®] Burnished Custom Masonry Cleaner and Sure Klean[®] Concrete Brick Cleaner* were evaluated for removal of laboratory applied mortar.

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

Heavy deposits of mortar are removed with dry scraping after 24 hours. Prepared cleaning solutions are then evaluated for their effectiveness in removing residual Ash Grove[®] Type S mortar staining after 3 days, 7 days, and 14 days of curing.

B. Color Uniformity Testing - Sure Klean[®] Custom Masonry Cleaner, Sure Klean[®] Burnished Custom Masonry Cleaner and Sure Klean[®] Concrete Brick Cleaner were evaluated at various dilutions to determine the optimal concentration of cleaner that leaves the external surface looking most like the natural through-body color of the CMU. Color uniformity was evaluated by comparing aggregate exposure and surface pigment alternation/removal of each cleaned surface compared to the natural through-body color of the CMU.

<u>Aggregate Exposure</u> is the visual examination comparing aggregate exposure of the interior, through-body section of CMU to surfaces cleaned with selected product(s) at given dilutions.

<u>Surface Pigment Alteration/Removal*</u> is the visual examination comparing the pigmentation of the interior, through-body section of the CMU to surfaces cleaned with selected product(s) at given dilutions.

- The following is the scale used for reporting results of both categories:
- 0 Worst match to through-body 3 Good match to through-body
- 1 **Poor** match to through-body 4 **Best** match to through-body
- 2 Fair match to through-body

NOTE: When cleaning integrally colored CMU.

Integrally colored concrete masonry units (CMU's) frequently have high amounts of pigments concentrated on the surface of the cured concrete unit. Variation of surface pigment concentrations from one CMU to the next creates a blotchy appearance in the completed wall. Allowed to remain on the surface of the CMU, the weakly bound pigment will weather and streak, further detracting from the appearance of the completed CMU wall.

In addition to removing excess mortar and construction related soiling, the goal of any cleaning operation undertaken on 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.

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

*In the original report, this product was called Sure Klean[®] Burnished Custom Masonry Cleaner. This report was revised when the product name was changed.





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PRODUCTS EVALUATED FOR CLEANING AND COLOR UNIFORMITY

Sample	Product	Dilution
All Submitted CMU's	Sure Klean [®] Custom Masonry Cleaner	1:2, 1:4, 1:6
	Sure Klean [®] Burnished Custom Masonry Cleaner	1:2, 1:3
All Submitted Concrete Brick	Sure Klean [®] Custom Masonry Cleaner	1:2, 1:4, 1:6
All Submitted Concrete Brick	Sure Klean [®] Concrete Brick Cleaner	1:2, 1:3

WATER REPELLENT PRODUCTS EVALUATED

Sample	Product Diluti	
All Submitted Ground-face CMU's	Sure Klean [®] Custom Masonry Sealer	Concentrate
All Submitted Concrete Brick, Rock-face, and Smooth-face CMU's	Sure Klean [®] Weather Seal Siloxane WB Concentrate	1:9, 1:14



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SECTION A - CLEANING INTEGRALLY COLORED CMU's

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, non-etching 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.

Sure Klean® Concrete Brick Cleaner – Removes common construction and atmospheric staining from concrete brick and other architectural concrete surfaces. This general-purpose, non-etching acidic cleaner removes mortar smears, rust, mud, atmospheric dirt and other stains without altering the surface texture. Concrete Brick Cleaner adds depth to colors and brightens white matrices and exposed aggregate. Liquid concentrate for dilution with 1-3 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 dwell time for each cleaner:

Sure Klean [®] Custom Masonry Cleaner	3 minutes
Sure Klean [®] Burnished Custom Masonry Cleaner	3-5 Minutes
Sure Klean [®] Concrete Brick Cleaner	3-5 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.





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TEST RESULTS - Cleaning

<u>% removal</u>

6	'Parchment" Burnis	hed	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	"Midnight" Burnish	hed	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	"Sahara" Burnish	ed	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	"Warmtone" Burnis	hed	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	ntique White" Burn	ished	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%







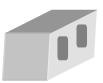
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TEST RESULTS – Cleaning Continued

<u>% removal</u>

	"Cedar" Burnishe	d	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
"Mesa	bi" Rock-face Conc	rete Brick	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Concrete Brick Cleaner	1:2	100%	100%
Concrete Brick Cleaner	1:3	100%	100%
<i></i>			
	i" Smooth-face Con		
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Concrete Brick Cleaner	1:2 1:3	<u> 100% </u>	100%
Concrete Brick Cleaner	1.3	100%	100%
"Mesal	bi" Burnished Conc	rete Brick	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Concrete Brick Cleaner	1:2	100%	100%
Concrete Brick Cleaner	1:3	100%	100%
"North O	aks" Rock-face Co	ncrete Brick	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Concrete Brick Cleaner	1:2	100%	100%
Concrete Brick Cleaner	1:3	100%	100%





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TEST RESULTS – Cleaning Continued

<u>% removal</u>

"North Oa	ks" Smooth-face C	oncrete Brick	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Concrete Brick Cleaner	1:2	100%	100%
Concrete Brick Cleaner	1:3	100%	100%
"North O	aks" Burnished Co	ncrete Brick	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Concrete Brick Cleaner	1:2	100%	100%
Concrete Brick Cleaner	1:3	100%	100%
	Granite #529" Rock	faaa	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2		100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
"6	ranite #529" Smoot	h-faca	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
			10070
	lickory #538" Rock		
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%





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TEST RESULTS – Cleaning Continued

	ickory #538" Smoot		
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
"	Kasota #707" Rock-	face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	asota #707" Smootl	6000	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	<u> </u>	14 day
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	1.0	10070	10070
"	Adobe #276" Rock-	face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
" 🛆	dobe #276" Smooth	n-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%





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TEST RESULTS – Cleaning Continued

	ober Yellow #281" R	ock-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
"Octob	per Yellow #281" Sm	nooth-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
66	Toffee #293" Rock-	faco	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
" T	offee #293" Smooth	n-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	Mojave #287" Rock	-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%





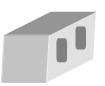
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TEST RESULTS - Cleaning

" M	lojave #287" Smoot	h-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	Sedona #436" Rock	-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
"•			
	edona #436" Smoot		
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
"	Sahara #296" Rock-	face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
"S	ahara #296" Smoot	h-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%





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TEST RESULTS - Cleaning

"Isa	anti Blend #340"	Rock-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
,			1
"Isar	nti Blend #340" \$	Smooth-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
Burnished Custoff Masoffy Cleaner	1.5	10078	10078
"Wi	nter White #301	' Rock-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
y			
"Wint	ter White #301"	Smooth-face	
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
· · · · ·			•
	archment #300"		-
Product	Dilution	3 day	14 day
Custom Masonry Cleaner	1:2	100%	100%
Custom Masonry Cleaner	1:4	100%	100%
Custom Masonry Cleaner	1:6	100%	100%
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%
	ahmant #200" 0	mooth food	
Product	chment #300" S	mooth-face 3 day	14 day
Custom Masonry Cleaner	1:2	100%	14 day
Custom Masonry Cleaner	1:4	100%	100%
· · · · · · · · · · · · · · · · · · ·	1:6	100%	100%
Custom Masonry Cleaner			
Burnished Custom Masonry Cleaner	1:2	100%	100%
Burnished Custom Masonry Cleaner	1:3	100%	100%



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CONCLUSIONS - CLEANING

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

All dilutions of Sure Klean[®] Custom Masonry Cleaner, Sure Klean[®] Burnished Custom Masonry Cleaner, and Sure Klean[®] Concrete Brick Cleaner and tested affected the substrate in a similar manner, removing slight to heavy concentrations of pigmented matrix from the rough and smooth block faces, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit.

RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING

Recommendations for cleaning for each type of CMU submitted by Anchor Block, North St. Paul, MN are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar.

Block	Color	New Construction Cleaning (Type S mortar, 14 day)
		Burnished CMU's
Burnished	"Parchment"	
Burnished	"Midnight"	Sure Klean [®] Custom Masonry Cleaner (1:6)
Burnished	"Sahara"	OR
Burnished	"Warmtone"	Sure Klean [®] Burnished Custom Masonry Cleaner (1:3)
Burnished	"Antique White"	Sure Riean Burnished Custom Masonly Cleaner (1.3)
Burnished	"Cedar"	
		Concrete Brick
Rock-face	"Mesabi"	
Smooth-face	"Mesabi"	Sure Klean [®] Custom Masonry Cleaner (1:6)
Burnished	"Mesabi"	OR
Rock-face	"North Oaks"	Sure Klean [®] Concrete Brick Cleaner (1:3)
Smooth-face	"North Oaks"	Sure Riean Concrete Blick Cleaner (1.3)
Burnished	"North Oaks"	





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RECOMMENDED PRODUCTS AND DILUTIONS – CLEANING (continued)

Block	Color	New Construction Cleaning (Type S mortar, 14 day)	
Rock-Face and Smooth-Face CMU's			
Rock-face Smooth-face Rock-face Smooth-face Rock-face Smooth-face Rock-face Smooth-face Rock-face Smooth-face Rock-face Smooth-face Rock-face Smooth-face Smooth-face Smooth-face	Rock-Face a "Granite # 529" "Granite # 529" "Hickory # 538" "Hickory # 538" "Kasota # 707" "Kasota # 707" "Kasota # 707" "Kasota # 707" "Adobe # 276" "October Yellow # 281" "Toffee # 293" "Toffee # 293" "Mojave # 287" "Sedona # 436" "Sedona # 436"		
Rock-face	"Island Blend # 340"		
Smooth-face Rock-face Smooth-face	"Island Blend # 340" "Winter White # 301" "Winter White # 301"		
Rock-face Smooth-face	"Parchment # 300" "Parchment # 300"		

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. Pressure rinsing equipment providing at least 400 psi at 4-6 gpm delivered though a 15-40 degree fan spray often produces best cleaning results.

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



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SECTION B – COLOR UNIFORMITY:

DESCRIPTION OF PRODUCTS EVALUATED – Color Uniformity:

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, non-etching 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.

Sure Klean® Concrete Brick Cleaner – Removes common construction and atmospheric staining from concrete brick and other architectural concrete surfaces. This general-purpose, non-etching acidic cleaner removes mortar smears, rust, mud, atmospheric dirt and other stains without altering the surface texture. Concrete Brick Cleaner adds depth to colors and brightens white matrices and exposed aggregate. Liquid concentrate for dilution with 1-3 parts water. Apply by brush or low-pressure spray.

TEST METHOD – Color Uniformity Testing:

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

- 1. Prewet the surface with water.
- 2. Apply each cleaner at the appropriate dilutions.
- 4. Reapply the products and moderately agitate with a brush.
- 5. Pressure rinse thoroughly.*
- 6. Allow the sample to dry for at least 18 hours and visually examine.
- 7. Break the sample in half and compare the through-body surfaces to the cleaned surfaces for the best match.

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





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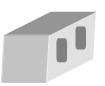
TEST RESULTS – Color Uniformity

Substrate: Burnished	Pigment Col	or: "Parchment"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	4	4
Custom Masonry Cleaner	1:6	4	4
Burnished Custom Masonry Cleaner	1:2	4	4
Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Burnished	Pigment Col	or: "Midnight"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	4	4
Custom Masonry Cleaner	1:6	4	4
Burnished Custom Masonry Cleaner	1:2	4	4
Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Burnished	Pigment Col	or: "Sahara"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	4	4
Custom Masonry Cleaner	1:6	4	4
Burnished Custom Masonry Cleaner	1:2	4	4
Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Burnished	Pigment Col	or: "Warmtone"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	4	4
	1:6	4	4
Custom Masonry Cleaner	1.0		
Custom Masonry Cleaner Burnished Custom Masonry Cleaner	1:2	4	4

Scale used for reporting results of both categories

- 0 **Worst** match to through-body
- 1 **Poor** match to through-body
- 2 **Fair** match to through-body
- 3 **Good** match to through-body
- 4 Best match to through-body





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TEST RESULTS – Color Uniformity Continued

Substrate: Burnished	Pigment Col	or: "Antique White"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	4	4
Custom Masonry Cleaner	1:6	4	4
Burnished Custom Masonry Cleaner	1:2	4	4
Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Burnished	Pigment Col	or: "Cedar"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	4	4
Custom Masonry Cleaner	1:6	4	4
Burnished Custom Masonry Cleaner	1:2	4	4
Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Rock-face Brick	Pigment Col	or: "Mesabi"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	0
Custom Masonry Cleaner	1:4	3	4
Custom Masonry Cleaner	1:6	2	3
Concrete Brick Cleaner	1:2	1	2
Concrete Brick Cleaner	1:3	0	1
Substrate: Smooth-face Brick	Pigment Col	or: "Mesabi"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	3	3
Custom Masonry Cleaner	1:6	2	2
, , , , , , , , , , , , , , , , , , ,	+		
Concrete Brick Cleaner	1:2	1	1

Scale used for reporting results of both categories

- 0 **Worst** match to through-body
- 3 **Good** match to through-body
- 1 **Poor** match to through-body
- 4 **Best** match to through body
- 2 Fair match to through-body
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TEST RESULTS – Color Uniformity Continued

Substrate: Burnished Brick	Pigment Col	or: "Mesabi"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	4	4
Custom Masonry Cleaner	1:6	4	4
Concrete Brick Cleaner	1:2	4	4
Concrete Brick Cleaner	1:3	4	4
Substrate: Rock-face Brick	Pigment Col	or: "North Oaks"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	1
Custom Masonry Cleaner	1:4	4	2
Custom Masonry Cleaner	1:6	3	4
Concrete Brick Cleaner	1:2	2	3
Concrete Brick Cleaner	1:3	2	3
Order (m. Construction Construction			
Substrate: Smooth-face Brick	Pigment Col	or: "North Oaks"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	0
Custom Masonry Cleaner	1:4	3	2
Custom Masonry Cleaner	1:6	2	1
Concrete Brick Cleaner	1:2	1	2
Concrete Brick Cleaner	1:3	1	2
Substrate: Burnished Brick	Pigment Col	or: "North Oaks"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	4
Custom Masonry Cleaner	1:4	4	4
Custom Masonry Cleaner	1:6	4	4
Concrete Brick Cleaner	1:2	4	4
Concrete Brick Cleaner	1:3	4	4

Scale used for reporting results of both categories

0 – **Worst** match to through-body

- 3 **Good** match to through-body
- 1 Poor match to through-body
- 4 **Best** match to through-body

2 - Fair match to through-body

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TEST RESULTS – Color Uniformity Continued

Substrate: Rock-face	Pigment Col	or: "Granite #529"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	2
Custom Masonry Cleaner	1:4	4	2
Custom Masonry Cleaner	1:6	4	2
Burnished Custom Masonry Cleaner	1:2	3	4
Burnished Custom Masonry Cleaner	1:3	3	3
Substrate: Smooth-face	Pigment Col	or: "Granite #529"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	3	2
Custom Masonry Cleaner	1:4	3	4
Custom Masonry Cleaner	1:6	3	3
Burnished Custom Masonry Cleaner	1:2	3	3
Burnished Custom Masonry Cleaner	1:3	3	3
Substrate: Rock-face	Pigment Col	or: "Hickory #538"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	3	2
Custom Masonry Cleaner	1:4	3	2
Custom Masonry Cleaner	1:6	3	3
Burnished Custom Masonry Cleaner	1:2	2	3
Burnished Custom Masonry Cleaner	1:3	2	3
Substrate: Smooth-face	Pigment Col	or: "Hickory #538"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
	1:2	4	3
Custom Masonry Cleaner			3
-	1:4	3	5
Custom Masonry Cleaner	1:4 1:6	2	3
Custom Masonry Cleaner Custom Masonry Cleaner Custom Masonry Cleaner Burnished Custom Masonry Cleaner	1		

Scale used for reporting results of both categories

0 – **Worst** match to through-body

- 3 **Good** match to through-body
- 1 Poor match to through-body
- 4 **Best** match to through-body

2 – Fair match to through-body

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TEST RESULTS – Color Uniformity Continued

Substrate: Rock-face	Pigment Col	or: "Kasota #707"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	3
Custom Masonry Cleaner	1:4	4	3
Custom Masonry Cleaner	1:6	3	4
Burnished Custom Masonry Cleaner	1:2	4	4
Burnished Custom Masonry Cleaner	1:3	3	3
Substrate: Smooth-face	Pigment Col	or: "Kasota #707"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	3	2
Custom Masonry Cleaner	1:4	3	3
Custom Masonry Cleaner	1:6	2	2
Burnished Custom Masonry Cleaner	1:2	1	3
Burnished Custom Masonry Cleaner	1:3	1	3
Substrate: Rock-face	Pigment Col	or: "Adobe #276"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	0
Custom Masonry Cleaner	1:4	4	3
Custom Masonry Cleaner	1:6	4	2
Burnished Custom Masonry Cleaner	1:2	2	1
Burnished Custom Masonry Cleaner	1:3	2	1
Substrate: Smooth-face	Pigment Col	or: "Adobe #276"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	0
Custom Masonry Cleaner	1:4	3	3
Custom Masonry Cleaner	1:6	3	2
			ł
Burnished Custom Masonry Cleaner	1:2	2	1

Scale used for reporting results of both categories

0 – **Worst** match to through-body

- 3 **Good** match to through-body
- 1 **Poor** match to through-body
 - 4 **Best** match to through-body

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2 – Fair match to through-body





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TEST RESULTS – Color Uniformity Continued

Substrate: Rock-face	Pigment Col	or: "October Yellow #281"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	2
Custom Masonry Cleaner	1:4	4	4
Custom Masonry Cleaner	1:6	3	4
Burnished Custom Masonry Cleaner	1:2	3	3
Burnished Custom Masonry Cleaner	1:3	3	2
Substrate: Smooth-face	Pigment Col	or: "October Yellow #281"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	2	3
Custom Masonry Cleaner	1:4	4	3
Custom Masonry Cleaner	1:6	3	3
Burnished Custom Masonry Cleaner	1:2	1	3
Burnished Custom Masonry Cleaner	1:3	1	3
Substrate: Rock-face	Pigment Col	or: "Toffee #293"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	3
Custom Masonry Cleaner	1:4	3	2
Custom Masonry Cleaner	1:6	2	2
Burnished Custom Masonry Cleaner	1:2	1	3
Burnished Custom Masonry Cleaner	1:3	1	3
Substrate: Smooth-face	Pigment Col	or: "Toffee #293"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	3
Custom Masonry Cleaner	1:4	3	2
Custom Masonry Cleaner	1:6	2	2
Burnished Custom Masonry Cleaner	1:2	1	3
Durnished Custorn Masonly Cleaner	1.2		•

Scale used for reporting results of both categories

0 – **Worst** match to through-body

- 3 **Good** match to through-body
- 1 **Poor** match to through-body
- 4 **Best** match to through-body

2 - Fair match to through-body

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TEST RESULTS – Color Uniformity Continued

Substrate: Rock-face	Pigment Col	or: "Mojave #287"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	3
Custom Masonry Cleaner	1:4	3	2
Custom Masonry Cleaner	1:6	3	2
Burnished Custom Masonry Cleaner	1:2	1	2
Burnished Custom Masonry Cleaner	1:3	1	2
Substrate: Smooth-face	Pigment Col	or: "Mojave #287"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	3	3
Custom Masonry Cleaner	1:4	2	3
Custom Masonry Cleaner	1:6	2	2
Burnished Custom Masonry Cleaner	1:2	1	1
Burnished Custom Masonry Cleaner	1:3	1	1
Substrate: Rock-face	Pigment Col	or: "Sedona #436"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	3
Custom Masonry Cleaner	1:4	2	3
Custom Masonry Cleaner	1:6	2	3
Burnished Custom Masonry Cleaner	1:2	2	1
Burnished Custom Masonry Cleaner	1:3	2	1
Substrate: Smooth-face	Pigment Col	or: "Sedona #436"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	3	3
Custom Masonry Cleaner	1:4	3	2
	1.6	2	2
Custom Masonry Cleaner	1:6	-	
Custom Masonry Cleaner Burnished Custom Masonry Cleaner	1.6	1	0

Scale used for reporting results of both categories

0 – **Worst** match to through-body

- 3 Good match to through-body
- 1 **Poor** match to through-body
- 4 **Best** match to through-body

2 – Fair match to through-body

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TEST RESULTS – Color Uniformity Continued

Dilution 1:2 1:4 1:6 1:2	or: "Sahara #296" Aggregate Exposure 4 4 3	Surface Pigment Alteration/Removal 2 3
1:4 1:6	4	
1:6		3
	3	
1.2	J	2
1.4	1	2
1:3	1	2
Pigment Cold	or: "Sahara #296"	
Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
1:2	3	3
1:4	4	4
1:6	2	2
1:2	1	1
1:3	1	1
vigment Colo	or: "Isanti Blend #340"	
Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
1:2	4	3
1:4	4	2
1:6	3	2
1:2	1	1
1:3	1	1
Pigment Cold	or: "Isanti Blend #340"	
Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
1:2	4	3
1:4	3	3
ł		
1:6	3	2
1:6 1:2	3 2	2 1
	Dilution 1:2 1:4 1:6 1:2 1:3 Pigment Color Dilution 1:2 1:4 1:5 Dilution 1:2 1:4 1:6 1:2 1:3	1:2 3 1:4 4 1:6 2 1:2 1 1:3 1 Pigment Color: "Isanti Blend #340" Dilution Aggregate Exposure 1:2 4 1:6 3 1:2 1 1:3 1

Scale used for reporting results of both categories

0 – **Worst** match to through-body

- 3 **Good** match to through-body
- 1 Poor match to through-body
 - rough-body 4 –
- 4 **Best** match to through-body
- 2 Fair match to through-body





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TEST RESULTS – Color Uniformity Continued

Substrate: Rock-face	Pigment Col	or: "Winter White #301"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	3	3
Custom Masonry Cleaner	1:4	3	2
Custom Masonry Cleaner	1:6	3	2
Burnished Custom Masonry Cleaner	1:2	2	2
Burnished Custom Masonry Cleaner	1:3	2	2
Substrate: Smooth-face	Pigment Cole	or: "Winter White #301"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	2
Custom Masonry Cleaner	1:4	3	2
Custom Masonry Cleaner	1:6	2	4
Burnished Custom Masonry Cleaner	1:2	1	3
Burnished Custom Masonry Cleaner	1:3	0	3
Substrate: Rock-face	Pigment Col	or: "Parchment #300"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	4	3
Custom Masonry Cleaner	1:4	3	3
Custom Masonry Cleaner	1:6	2	3
Burnished Custom Masonry Cleaner	1:2	2	1
Burnished Custom Masonry Cleaner	1:3	2	1
Substrate: Smooth-face	Pigment Col	or: "Parchment #300"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Product	Dilution 1:2	Aggregate Exposure	
Product Custom Masonry Cleaner			Alteration/Removal
Product Custom Masonry Cleaner Custom Masonry Cleaner	1:2	4	Alteration/Removal
	1:2 1:4	4 3	Alteration/Removal 3 3

Scale used for reporting results of both categories

0 – **Worst** match to through-body

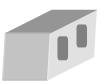
3 – **Good** match to through-body

1 - Poor match to through-body

2 – Fair match to through-body

4 – Best match to through-body





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PHOTOGRAPHS – Color Uniformity



"Sahara # 296" Rock-face Block Color Uniformity





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CONCLUSIONS - COLOR UNIFORMITY:

All dilutions of Sure Klean[®] Custom Masonry Cleaner and Sure Klean[®] Concrete Brick Cleaner and tested affected the substrate in a similar manner. Higher concentrations of cleaner removed moderate to heavy concentrations of pigmented matrix, exposing small and large aggregate. Lower concentrations of cleaner removed slight to moderate concentrations of pigmented matrix, exposing small and large aggregate. All dilutions enhanced the natural appearance of the integrally colored CMU.

RECOMMENDATIONS - COLOR UNIFORMITY

Recommendations for color uniformity for each type of CMU submitted by Anchor Block Company, North St. Paul, MN are provided in the chart below. Recommendations are based on the optimum dilution that provides the best color uniformity and the complete removal of mortar.

Block	Color	Color Uniformity	
Burnished Block		Burnished Block	
Burnished	"Parchment"		
Burnished	"Midnight"		
Burnished	"Sahara"	Sure Klean [®] Burnished Custom Masonry Cleaner (1:3)	
Burnished	"Warmtone"	Sure Riean Burnished Custom Masonly Cleaner (1.5)	
Burnished	"Antique White"		
Burnished	"Cedar"		
	Concrete Brick		
Rock-face	"Mesabi"		
Smooth-face	"Mesabi"		
Burnished	"Mesabi"	Sure Klean [®] Custom Masonry Cleaner (1:6)	
Rock-face	"North Oaks"	Sule Riean Custom Masonry Cleaner (1.0)	
Smooth-face	"North Oaks"		
Burnished	"North Oaks"		



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RECOMMENDATIONS - COLOR UNIFORMITY Continued

Block	Color	Color Uniformity	
	Rock-Face and Smooth-Face CMU		
Rock-face	"Granite # 529"		
Smooth-face	"Granite # 529"		
Rock-face	"Hickory # 538"		
Smooth-face	"Hickory # 538"		
Rock-face	"Kasota # 707"		
Smooth-face	"Kasota # 707"		
Rock-face	"Adobe # 276"		
Smooth-face	"Adobe # 276"		
Rock-face	"October Yellow # 281"		
Smooth-face	"October Yellow # 281"		
Rock-face	"Toffee # 293"		
Smooth-face	"Toffee # 293"	Sure Klean [®] Custom Masonry Cleaner (1:6)	
Rock-face	"Mojave # 287"		
Smooth-face	"Mojave # 287"		
Rock-face	"Sedona # 436"		
Smooth-face	"Sedona # 436"		
Rock-face	"Island Blend # 340"		
Smooth-face	"Island Blend # 340"		
Rock-face	"Winter White # 301"		
Smooth-face	"Winter White # 301"		
Rock-face	"Parchment # 300"		
Smooth-face	"Parchment # 300"		

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. Pressure rinsing equipment providing at least 400 psi at 4-6 gpm delivered though a 15-40 degree fan spray often produces best cleaning results.

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



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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, architectural concrete block, precast concrete, wood and porous masonry. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering.

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

SAMPLE PREPARATION - Protective Water Repellents:

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

TEST METHODS - Protective Water Repellents:

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

The water absorption tube test simulating wind driven rain conditions was performed. This test simulates 60 mile per hour wind driven rain conditions for a period of 20 minutes. See Technical Services TECH Note RILEM Tube Test Procedures.



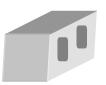


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TEST RESULTS - Protective Water Repellents

	RESULTS
"Parchment"	
Untreated Control	< 40 mph
Custom Masonry Sealer	60 mph
"Midnight"	
Untreated Control	45 mph
Custom Masonry Sealer	60 mph
"Sahara"	
Untreated Control	52 mph
Custom Masonry Sealer	60 mph
"Warmtone"	
Untreated Control	< 40 mph
Custom Masonry Sealer	60 mph
"Antique White"	
Untreated Control	52 mph
Custom Masonry Sealer	60 mph
"Cedar"	
Untreated Control	< 40 mph
Custom Masonry Sealer	60 mph
"Mesabi" Rock-face Brid	ck
Untreated Control	< 40 mph
Custom Masonry Sealer	57 mph
Siloxane WB Concentrate (1:9)	54 mph
Siloxane WB Concentrate (1:14)	58 mph





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TEST RESULTS - Protective Water Repellents

	RESULTS
"Mesabi" Smooth-face Brick	
Untreated Control	< 40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	60 mph
Siloxane WB Concentrate (1:14)	60 mph
"Mesabi" Burnished Brick	
Untreated Control	< 40 mph
Custom Masonry Sealer	57 mph
Siloxane WB Concentrate (1:9)	60 mph
Siloxane WB Concentrate (1:14)	60 mph
"North Oaks" Rock-face Brick	
Untreated Control	< 40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	56 mph
Siloxane WB Concentrate (1:14)	58 mph
"North Oaks" Smooth-face Brick	
Untreated Control	< 40 mph
Custom Masonry Sealer	59 mph
Siloxane WB Concentrate (1:9)	58 mph
Siloxane WB Concentrate (1:14)	57 mph
"North Oaks" Burnished Brick	
Untreated Control	< 40 mph
Custom Masonry Sealer	60 mph
Siloxane WB Concentrate (1:9)	58 mph
Siloxane WB Concentrate (1:14)	59 mph







TEST RESULTS - Protective Water Repellents Continued

	RESULTS
"Granite #529" Rock-face)
Untreated Control	< 40 mph
Custom Masonry Sealer	58 mph
Siloxane WB Concentrate (1:9)	58 mph
Siloxane WB Concentrate (1:14)	57 mph
"Granite #529" Smooth-fac	ce
Untreated Control	< 40 mph
Custom Masonry Sealer	58 mph
Siloxane WB Concentrate (1:9)	60 mph
Siloxane WB Concentrate (1:14)	60 mph
"Hickory #538" Rock-face	9
Untreated Control	< 40 mph
Custom Masonry Sealer	50 mph
Siloxane WB Concentrate (1:9)	58 mph
Siloxane WB Concentrate (1:14)	58 mph
"Hickory #538" Smooth-fac	ce
Untreated Control	< 40 mph
Custom Masonry Sealer	58 mph
Siloxane WB Concentrate (1:9)	60 mph
Siloxane WB Concentrate (1:14)	60 mph





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TEST RESULTS - Protective Water Repellents Continued

	RESULTS	
"Kasota #707" Rock-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	59 mph	
Siloxane WB Concentrate (1:9)	59 mph	
Siloxane WB Concentrate (1:14)	58 mph	
"Kasota #707" Smooth-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	60 mph	
Siloxane WB Concentrate (1:9)	60 mph	
Siloxane WB Concentrate (1:14)	60 mph	
"Adobe #276" Rock-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	56 mph	
Siloxane WB Concentrate (1:9)	58 mph	
Siloxane WB Concentrate (1:14)	57 mph	
"Adobe #276" Smooth-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	60 mph	
Siloxane WB Concentrate (1:9)	60 mph	
Siloxane WB Concentrate (1:14)	60 mph	





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TEST RESULTS - Protective Water Repellents Continued

	RESULTS		
"October Yellow #281" Rock-fa	ace		
Untreated Control	< 40 mph		
Custom Masonry Sealer	59 mph		
Siloxane WB Concentrate (1:9)	60 mph		
Siloxane WB Concentrate (1:14)	60 mph		
"October Yellow #281" Smooth-	face		
Untreated Control	< 40 mph		
Custom Masonry Sealer	60 mph		
Siloxane WB Concentrate (1:9)	60 mph		
Siloxane WB Concentrate (1:14)	60 mph		
"Toffee #293" Rock-face	"Toffee #293" Rock-face		
Untreated Control	< 40 mph		
Custom Masonry Sealer	60 mph		
Siloxane WB Concentrate (1:9)	60 mph		
Siloxane WB Concentrate (1:14)	60 mph		
"Toffee #293" Smooth-face			
Untreated Control	< 40 mph		
Custom Masonry Sealer	60 mph		
Siloxane WB Concentrate (1:9)	60 mph		
Siloxane WB Concentrate (1:14)	60 mph		



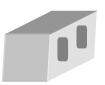




TEST RESULTS - Protective Water Repellents Continued

	RESULTS		
"Mojave #287" Rock-face			
Untreated Control	< 40 mph		
Custom Masonry Sealer	60 mph		
Siloxane WB Concentrate (1:9)	60 mph		
Siloxane WB Concentrate (1:14)	55 mph		
"Mojave #287" Smooth-face	2		
Untreated Control	< 40 mph		
Custom Masonry Sealer	58 mph		
Siloxane WB Concentrate (1:9)	60 mph		
Siloxane WB Concentrate (1:14)	58 mph		
"Sedona #436" Rock-face			
Untreated Control	< 40 mph		
Custom Masonry Sealer	57 mph		
Siloxane WB Concentrate (1:9)	59 mph		
Siloxane WB Concentrate (1:14)	59 mph		
"Sedona #436" Smooth-face	9		
Untreated Control	< 40 mph		
Custom Masonry Sealer	59 mph		
Siloxane WB Concentrate (1:9)	60 mph		
Siloxane WB Concentrate (1:14)	59 mph		





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TEST RESULTS - Protective Water Repellents Continued

	RESULTS	
"Sahara #296" Rock-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	60 mph	
Siloxane WB Concentrate (1:9)	60 mph	
Siloxane WB Concentrate (1:14)	60 mph	
"Sahara #296" Smooth-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	59 mph	
Siloxane WB Concentrate (1:9)	60 mph	
Siloxane WB Concentrate (1:14)	58 mph	
"least: Disud #240" Deals feed		
"Isanti Blend #340" Rock-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	50 mph	
Siloxane WB Concentrate (1:9)	57 mph	
Siloxane WB Concentrate (1:14)	53 mph	
"Isanti Blend #340" Smooth-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	60 mph	
Siloxane WB Concentrate (1:9)	60 mph	
Siloxane WB Concentrate (1:14)	60 mph	







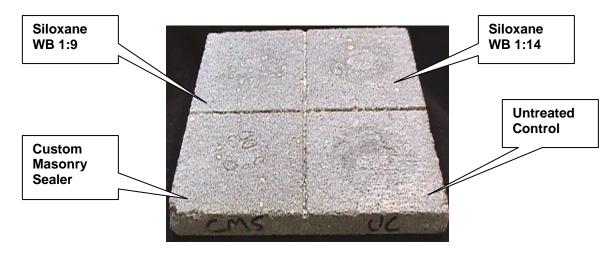
TEST RESULTS - Protective Water Repellents Continued

	RESULTS	
"Winter White #301" Rock-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	59 mph	
Siloxane WB Concentrate (1:9)	59 mph	
Siloxane WB Concentrate (1:14)	57 mph	
"Winter White #301" Smooth-fac	e	
Untreated Control	< 40 mph	
Custom Masonry Sealer	60 mph	
Siloxane WB Concentrate (1:9)	58 mph	
Siloxane WB Concentrate (1:14)	58 mph	
"Parchment #300" Rock-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	60 mph	
Siloxane WB Concentrate (1:9)	60 mph	
Siloxane WB Concentrate (1:14)	59 mph	
"Parchment #300" Smooth-face		
Untreated Control	< 40 mph	
Custom Masonry Sealer	60 mph	
Siloxane WB Concentrate (1:9)	60 mph	
Siloxane WB Concentrate (1:14)	59 mph	





PHOTOGRAPHS – Protective Water Repellents



"Granite # 529" Smooth-face block after water repellency treatment

"Winter White # 301" Rock-face block after water repellency treatment









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CONCLUSIONS - Protective Water Repellents

Based upon laboratory evaluations, Sure Klean[®] Custom Masonry Sealer and Sure Klean[®] Weather Seal Siloxane WB Concentrate diluted with nine parts fresh water and fourteen parts fresh water provided above average water repellency to all of the submitted samples tested. Sure Klean[®] Custom Masonry Sealer moderately enhanced the natural color of the CMU's and Sure Klean[®] Weather Seal Siloxane WB Concentrate slightly enhanced the natural color of the CMU's.

RECOMMENDATIONS - PROTECTIVE WATER REPELLENTS

Recommendations for water repellency treatment for each type of CMU submitted by Anchor Block Company, North St. Paul, MN, are provided in the chart below. Recommendations are based on the treatment that proved most effective and can provide water repellency on all types submitted.

Block	Water Repellents	
Burnished CMU		
"Parchment"		
"Midnight"		
"Sahara"	Sure Klean [®] Custom Masonry Sealer	
"Warmtone"	Sule Riean Custom Masonry Sealer	
"Antique White"		
"Cedar"		
Concrete Brick		
"Mesabi" Rock-face	R	
"Mesabi" Smooth-face	Sure Klean [®] Custom Masonry Sealer	
"Mesabi" Burnished	OR	
"North Oaks " Rock-face	Sure Klean [®] Weather Seal Siloxane WB	
"North Oaks" Smooth-face	(1:9, 1:14)	
"North Oaks" Burnished		







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RECOMMENDATIONS - PROTECTIVE WATER REPELLENTS continued

Block	Water Repellents	
Rock-Face and Smooth-Face CMU		
"Granite# 529" Rock-face		
"Granite # 529" Smooth-face		
"Hickory # 538" Rock-face		
"Hickory # 538" Smooth-face		
"Kasota # 707" Rock-face		
"Kasota # 707" Smooth-face		
"Adobe # 276" Rock-face		
"Adobe # 276" Smooth-face		
"October Yellow # 281" Rock-face		
"October Yellow # 281" Smooth- face	Sure Klean [®] Custom Masonry Sealer	
"Toffee# 293" Rock-face		
"Toffee# 293" Smooth-face	OR	
"Mojave# 287" Rock-face	Sure Klean [®] Weather Seal Siloxane WB	
"Mojave# 287" Smooth-face	(1:9, 1:14)	
"Sedona# 436" Rock-face		
"Sedona# 436" Smooth-face		
"Sahara# 296" Rock-face		
"Sahara# 296" Smooth-face		
"Isanti Blend# 340" Rock-face		
"Isanti Blend# 340" Smooth-face		
"Winter White# 301" Rock-face]	
"Winter White# 301" Smooth-face]	
"Parchment# 300" Rock-face		
"Parchment# 300" Smooth-face		

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 procedure for a particular project. See product literature for application and product information.

Michael Maflemme

Michael Meglemre Technical Analyst

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