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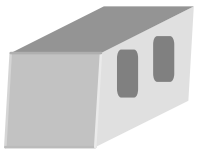


PROSOCO, Inc.

FOR: Frank Murphy
10800 S Rt. 83
Lemont, IL 60439

cc: Jim Lucas
Perry Surber
John Bourne

SUBJECT: Building Stone Products, Inc.
Lemont, IL

DATE: March 27, 2001

PROJECT: 0101-07 BP

SAMPLES SUBMITTED: 18 Renaissance® Calcium Silicate Units

Sample	Color	Size
Split Face CSU	"White"	12" x 24" x ¾"
Smooth Face CSU	"White"	12" x 24" x ¾"
Split Face CSU	"Wheat"	12" x 24" x ¾"
Smooth Face CSU	"Wheat"	12" x 24" x ¾"
Split Face CSU	"Taupe"	12" x 24" x ¾"
Smooth Face CSU	"Taupe"	8" x 24" x ¾"
Split Face CSU	"Olive"	12" x 24" x ¾"
Smooth Face CSU	"Olive"	12" x 24" x ¾"
Split Face CSU	"Sage"	12" x 24" x ¾"
Smooth Face CSU	"Sage"	12" x 24" x ¾"
Split Face CSU	"Cinnamon"	12" x 24" x ¾"
Smooth Face CSU	"Cinnamon"	12" x 24" x ¾"
Split Face CSU	"Nutmeg"	8" x 24" x 3½"
Smooth Face CSU	"Nutmeg"	12" x 24" x 3½"
Split Face CSU	"Rust"	12" x 24" x ¾"
Smooth Face CSU	"Rust"	12" x 24" x ¾"
Split Face CSU	"Paprika"	12" x 24" x ¾"
Smooth Face CSU	"Paprika"	12" x 24" x ¾"

Submitted by: Jim Lucas

PURPOSE OF TESTING:

Eighteen integrally colored Renaissance® Calcium Silicate Units (nine split faced and nine smooth faced) were submitted for testing using PROSOCO's new construction cleaning and water repellent products.

A. Cleaning Calcium Silicate Units: Sure Klean® Vana Trol®, Sure Klean® Light Duty Concrete Cleaner, and Sure Klean® 600 Detergent were evaluated for removal of laboratory applied mortar.

To simulate new construction soiling, all CSUs 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 CSU and filled with a wet mixture of Ashgrove® Type N cementitious mortar. The wet, mortar-filled cylinder is allowed to remain in contact with the CSU for 10 minutes before removal.

Soiled CSUs 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 Ashgrove® Type N mortar staining after 7 days, 14 days, and 21 days of curing.

B. Surface Alteration Testing - Sure Klean® Vana Trol®, Sure Klean® Light Duty Concrete Cleaner, and Sure Klean® 600 Detergent were tested at various dilutions to determine if a cleaning program implemented to remove excess mortar and related new construction soiling would otherwise alter the appearance of cleaned surfaces. Surface Alteration was evaluated visually based upon perceived discoloration or erosion/etching of the masonry unit.

Aggregate Exposure is the visual examination of the CSU 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 CSU 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 CSU.

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
1 – slight change
2 – moderate change
3 – heavy change
4 – excessive change

C. Protective Water Repellents - Sure Klean® Weather Seal Siloxane PD, Sure Klean® Weather Seal Siloxane WB Concentrate, and Sure Klean® Custom Masonry Sealer were evaluated using the RILEM II.4 method for their ability to provide water repellency to the submitted samples.

CLEANING PRODUCTS EVALUATED

SAMPLE	Vana Trol®	Light Duty Concrete Cleaner	600 Detergent
All Colors of Split Face and Smooth Face CSUs	1:6	1:2	1:8
		1:3	
	1:8	1:6	

SURFACE ALTERATION PRODUCTS EVALUATED

SAMPLE	Vana Trol®	Light Duty Concrete Cleaner	600 Detergent
All Colors of Split Face and Smooth Face CSUs	1:6	1:2	1:8
		1:3	
	1:8	1:6	

WATER REPELLENT PRODUCTS EVALUATED

SAMPLE	Product	Dilution
All Colors of Split Face and Smooth Face CSUs	Siloxane PD	Concentrate
	Siloxane WB Concentrate	1:9
	Custom Masonry Sealer	Concentrate

SECTION A – CLEANING INTEGRALLY COLORED CSUs

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® Light Duty Concrete Cleaner – A general-purpose, nonetching acidic cleaner removes rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Light Duty Concrete Cleaner removes common construction and atmospheric staining from smooth architectural and engineered concrete and adds depth to colors, brightens white matrices and exposed aggregate.

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.

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
   - Light Duty Concrete Cleaner ..... 5 minutes
   - 600 Detergent ..... 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.

Test Results - Cleaning

Substrate: Split Face CSU		**Pigment Color:** "White"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	90	90	90
Vana Trol®	1:8	90	90	90
Light Duty Concrete Cleaner	1:2	90	90	90
Light Duty Concrete Cleaner	1:3	80	80	80
Light Duty Concrete Cleaner	1:6	80	80	80
600 Detergent	1:8	90	95	90
Substrate: Smooth face CSU		**Pigment Color:** "White"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	98	98	98
Vana Trol®	1:8	98	98	98
Light Duty Concrete Cleaner	1:2	98	98	98
Light Duty Concrete Cleaner	1:3	98	98	98
Light Duty Concrete Cleaner	1:6	98	98	98
600 Detergent	1:8	98	98	98
Substrate: Split Face CSU		**Pigment Color:** "Wheat"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	80	90	80
Vana Trol®	1:8	80	80	90
Light Duty Concrete Cleaner	1:2	80	80	80
Light Duty Concrete Cleaner	1:3	95	90	90
Light Duty Concrete Cleaner	1:6	95	70	90
600 Detergent	1:8	95	90	85
Substrate: Smooth Face CSU		**Pigment Color:** "Wheat"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	90	90	90
Vana Trol®	1:8	90	80	90
Light Duty Concrete Cleaner	1:2	90	85	85
Light Duty Concrete Cleaner	1:3	80	90	90
Light Duty Concrete Cleaner	1:6	85	90	90
600 Detergent	1:8	90	70	70
Substrate: Split Face CSU		**Pigment Color:** "Taupe"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	60	60	90
Vana Trol®	1:8	90	80	85
Light Duty Concrete Cleaner	1:2	80	80	85
Light Duty Concrete Cleaner	1:3	80	80	70
Light Duty Concrete Cleaner	1:6	60	80	70
600 Detergent	1:8	90	90	90

Test Results Continued - Cleaning

Substrate: Smooth Face CSU		**Pigment Color:** "Taupe"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	98	N/A*	95
Vana Trol®	1:8	100	N/A*	95
Light Duty Concrete Cleaner	1:2	98	N/A*	100
Light Duty Concrete Cleaner	1:3	100	N/A*	98
Light Duty Concrete Cleaner	1:6	98	N/A*	98
600 Detergent	1:8	100	N/A*	98
Substrate: Split Face CSU		**Pigment Color:** "Olive"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	70	70	70
Vana Trol®	1:8	70	70	70
Light Duty Concrete Cleaner	1:2	70	50	70
Light Duty Concrete Cleaner	1:3	90	85	90
Light Duty Concrete Cleaner	1:6	90	85	90
600 Detergent	1:8	98	90	98
Substrate: Smooth Face CSU		**Pigment Color:** "Olive"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	100	100	90
Vana Trol®	1:8	95	98	90
Light Duty Concrete Cleaner	1:2	95	95	95
Light Duty Concrete Cleaner	1:3	95	95	95
Light Duty Concrete Cleaner	1:6	95	95	95
600 Detergent	1:8	100	100	100
Substrate: Split Face CSU		**Pigment Color:** "Sage"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	95	80	50
Vana Trol®	1:8	80	70	50
Light Duty Concrete Cleaner	1:2	80	50	75
Light Duty Concrete Cleaner	1:3	80	80	50
Light Duty Concrete Cleaner	1:6	60	80	50
600 Detergent	1:8	90	90	50
Substrate: Smooth Face CSU		**Pigment Color:** "Sage"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	90	98	98
Vana Trol®	1:8	100	98	98
Light Duty Concrete Cleaner	1:2	100	98	98
Light Duty Concrete Cleaner	1:3	100	98	98
Light Duty Concrete Cleaner	1:6	100	75	75
600 Detergent	1:8	100	98	98

* Due to a lack of adequate substrate, 14 day cleaning was not performed.

Test Results Continued - Cleaning

Substrate: Split Face CSU		**Pigment Color:** "Cinnamon"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	80	70	70
Vana Trol®	1:8	80	80	50
Light Duty Concrete Cleaner	1:2	80	80	50
Light Duty Concrete Cleaner	1:3	75	90	90
Light Duty Concrete Cleaner	1:6	50	80	90
600 Detergent	1:8	98	80	98
Substrate: Smooth Face CSU		**Pigment Color:** "Cinnamon"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	100	100	90
Vana Trol®	1:8	100	100	90
Light Duty Concrete Cleaner	1:2	98	98	90
Light Duty Concrete Cleaner	1:3	90	75	70
Light Duty Concrete Cleaner	1:6	90	50	50
600 Detergent	1:8	100	75	75
Substrate: Split Face CSU		**Pigment Color:** "Nutmeg"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	100	N/A*	100
Vana Trol®	1:8	98	N/A*	100
Light Duty Concrete Cleaner	1:2	100	N/A*	100
Light Duty Concrete Cleaner	1:3	100	N/A*	100
Light Duty Concrete Clnr	1:6	100	N/A*	100
600 Detergent	1:8	100	N/A*	100
Substrate: Smooth Face CSU		**Pigment Color:** "Nutmeg"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	100	98	100
Vana Trol®	1:8	100	98	100
Light Duty Concrete Cleaner	1:2	100	98	100
Light Duty Concrete Cleaner	1:3	100	98	100
Light Duty Concrete Cleaner	1:6	98	98	98
600 Detergent	1:8	98	98	98
Substrate: Split Face CSU		**Pigment Color:** "Rust"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	70	80	50
Vana Trol®	1:8	80	75	75
Light Duty Concrete Cleaner	1:2	80	80	80
Light Duty Concrete Cleaner	1:3	75	90	90
Light Duty Concrete Cleaner	1:6	70	50	80
600 Detergent	1:8	75	75	75

* Due to a lack of adequate substrate, 14 day cleaning was not performed.

Test Results Continued - Cleaning

Substrate: Smooth Face CSU		**Pigment Color:** "Rust"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	80	80	70
Vana Trol®	1:8	80	80	80
Light Duty Concrete Cleaner	1:2	90	80	75
Light Duty Concrete Cleaner	1:3	98	70	60
Light Duty Concrete Cleaner	1:6	90	75	80
600 Detergent	1:8	98	98	90
Substrate: Split Face CSU		**Pigment Color:** "Paprika"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	90	70	70
Vana Trol®	1:8	95	70	70
Light Duty Concrete Cleaner	1:2	90	70	70
Light Duty Concrete Cleaner	1:3	95	70	50
Light Duty Concrete Cleaner	1:6	90	70	50
600 Detergent	1:8	95	70	70
Substrate: Smooth Face CSU		**Pigment Color:** "Paprika"		
Product	**Dilution**	**7 Day % Removal**	**14 Day % Removal**	**21 Day % Removal**
Vana Trol®	1:6	100	98	90
Vana Trol®	1:8	100	90	75
Light Duty Concrete Cleaner	1:2	100	95	98
Light Duty Concrete Cleaner	1:3	100	100	98
Light Duty Concrete Cleaner	1:6	100	100	95
600 Detergent	1:8	100	100	100

CONCLUSIONS - Cleaning:

Based on the test data, all cleaners and dilutions showed variable effects on each sample tested. Overall, Sure Klean® Vana Trol® was most effective at removing the mortar smears from the submitted Renaissance® CSUs.

RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING:

Based on these evaluations, all of the dilutions of Sure Klean® Vana Trol® tested can be recommended for job site testing on the submitted samples from Building Stone Products, Inc., Lemont, IL. Both dilutions are effective in removing excess mortar, and they both assist in improving the color and uniformity of these Renaissance® Calcium Silicate Units. 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.

It should be noted that the use of PROSOCO cleaners might slightly darken or enhance the natural characteristics of the calcium silicate unit. To ensure a uniform appearance, always pre-wet the surface before applying cleaning products, keep lower areas wet to avoid streaks. Apply the cleaner evenly on the CSUs face working from the bottom up and thoroughly rinse the surface with fresh water to ensure all of the cleaner has been removed from the CSU. Failure to follow application instructions can result in an uneven and blotchy appearance.

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® Light Duty Concrete Cleaner – A general-purpose, nonetching acidic cleaner removes rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Light Duty Concrete Cleaner removes common construction and atmospheric staining from smooth architectural and engineered concrete and adds depth to colors, brightens white matrices and exposed aggregate.

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.

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.
4. Allow appropriate exposure time:
   Vana Trol® ..... 5 minutes
   Light Duty Concrete Cleaner ..... 5 minutes
   600 Detergent ..... 5 minutes
4. Reapply the products and moderately agitate with a brush.
5. Pressure rinse thoroughly.*****
7. Allow the surface to dry for at least 18 hours and visually examine.

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

Surface Alteration Results:

Substrate: Split Face CSU	**Pigment Color:** "White"				
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
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	2	0	0
Light Duty Concrete Cleaner	1:6	0	2	0	0
600 Detergent	1:8	0	3	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "White"				
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
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	2	0	0
Light Duty Concrete Cleaner	1:6	0	2	0	0
600 Detergent	1:8	0	2	0	0
Substrate: Split Face CSU	**Pigment Color:** "Wheat"				
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
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	1	0	0
Light Duty Concrete Cleaner	1:6	0	1	0	0
600 Detergent	1:8	0	2	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "Wheat"				
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
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	2	0	0
Light Duty Concrete Cleaner	1:6	0	1	0	0
600 Detergent	1:8	0	2	0	0

Scale used for reporting results of all categories

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

Surface Alteration Results Continued:

Substrate: Split Face CSU	**Pigment Color:** "Taupe"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	2	0	0
Vana Trol®	1:8	0	2	0	0
Light Duty Concrete Cleaner	1:2	0	3	0	0
Light Duty Concrete Cleaner	1:3	0	3	0	0
Light Duty Concrete Cleaner	1:6	0	2	0	0
600 Detergent	1:8	0	3	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "Taupe"				
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
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	1	0	0
Light Duty Concrete Cleaner	1:6	0	1	0	0
600 Detergent	1:8	0	2	0	0
Substrate: Split Face CSU	**Pigment Color:** "Olive"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	3	0	0
Vana Trol®	1:8	0	3	0	0
Light Duty Concrete Cleaner	1:2	0	3	0	0
Light Duty Concrete Cleaner	1:3	0	3	0	0
Light Duty Concrete Cleaner	1:6	0	3	0	0
600 Detergent	1:8	0	3	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "Olive"				
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
Light Duty Concrete Cleaner	1:2	0	1	0	0
Light Duty Concrete Cleaner	1:3	0	0	0	0
Light Duty Concrete Cleaner	1:6	0	0	0	0
600 Detergent	1:8	0	0	0	0

Scale used for reporting results of all categories

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

Surface Alteration Results Continued:

Substrate: Split Face CSU	**Pigment Color:** "Sage"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	3	0	0
Vana Trol®	1:8	0	3	0	0
Light Duty Concrete Cleaner	1:2	0	3	0	0
Light Duty Concrete Cleaner	1:3	0	3	0	0
Light Duty Concrete Cleaner	1:6	0	2	0	0
600 Detergent	1:8	0	3	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "Sage"				
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
Light Duty Concrete Cleaner	1:2	0	1	0	0
Light Duty Concrete Cleaner	1:3	0	1	0	0
Light Duty Concrete Cleaner	1:6	0	1	0	0
600 Detergent	1:8	0	2	0	0
Substrate: Split Face CSU	**Pigment Color:** "Cinnamon"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	2	0	0
Vana Trol®	1:8	0	2	0	0
Light Duty Concrete Cleaner	1:2	0	3	0	0
Light Duty Concrete Cleaner	1:3	0	3	0	0
Light Duty Concrete Cleaner	1:6	0	3	0	0
600 Detergent	1:8	0	3	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "Cinnamon"				
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
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	3	0	0
Light Duty Concrete Cleaner	1:6	0	2	0	0
600 Detergent	1:8	0	3	0	0

Scale used for reporting results of all categories

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

Surface Alteration Results Continued:

Substrate: Split Face CSU	**Pigment Color:** "Nutmeg"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	3	0	0
Vana Trol®	1:8	0	2	0	0
Light Duty Concrete Cleaner	1:2	0	3	0	0
Light Duty Concrete Cleaner	1:3	0	2	0	0
Light Duty Concrete Cleaner	1:6	0	2	0	0
600 Detergent	1:8	0	3	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "Nutmeg"				
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
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	1	0	0
Light Duty Concrete Cleaner	1:6	0	1	0	0
600 Detergent	1:8	0	2	0	0
Substrate: Split Face CSU	**Pigment Color:** "Rust"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	2	0	0
Vana Trol®	1:8	0	2	0	0
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	2	0	0
Light Duty Concrete Cleaner	1:6	0	2	0	0
600 Detergent	1:8	0	2	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "Rust"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	2	0	0
Vana Trol®	1:8	0	1	0	0
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	1	0	0
Light Duty Concrete Cleaner	1:6	0	1	0	0
600 Detergent	1:8	0	1	0	0

Scale used for reporting results of all categories

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

Surface Alteration Results Continued:

Substrate: Split Face CSU	**Pigment Color:** "Paprika"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	2	0	0
Vana Trol®	1:8	0	2	0	0
Light Duty Concrete Cleaner	1:2	0	2	0	0
Light Duty Concrete Cleaner	1:3	0	2	0	0
Light Duty Concrete Cleaner	1:6	0	1	0	0
600 Detergent	1:8	0	2	0	0
Substrate: Smooth Face CSU	**Pigment Color:** "Paprika"				
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/ Removal	Matrix Erosion	Staining
Vana Trol®	1:6	0	0	0	0
Vana Trol®	1:8	0	0	0	0
Light Duty Concrete Cleaner	1:2	0	0	0	0
Light Duty Concrete Cleaner	1:3	0	1	0	0
Light Duty Concrete Cleaner	1:6	0	1	0	0
600 Detergent	1:8	0	1	0	0

Scale used for reporting results of all categories

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

CONCLUSIONS – Surface Alterations:

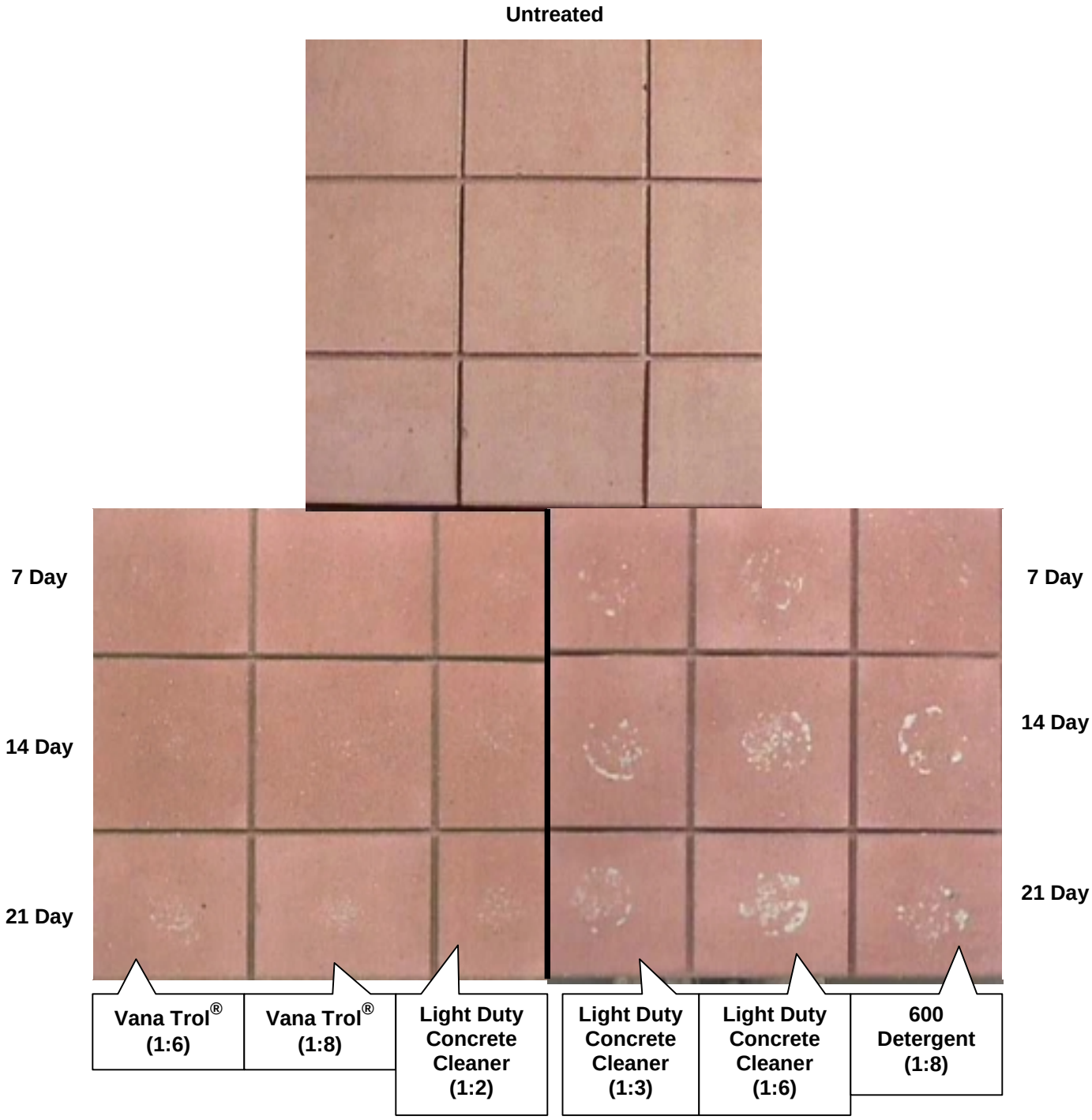
Based on the test data, all cleaners and dilutions tested on the submitted samples darkened or enhanced the natural appearance of the substrate in some manner. The split face samples were darkened more by the cleaners than the smooth face samples and Sure Klean® 600 Detergent caused more darkening than any of the other cleaners.

RECOMMENDED PRODUCTS AND DILUTIONS – SURFACE ALTERATIONS:

Based on these evaluations, all of the dilutions of Sure Klean® Vana Trol® tested can be recommended for job site testing on the submitted samples from Building Stone Products, Inc., Lemont, IL. Use Sure Klean® Vana Trol® diluted one part cleaner to eight parts fresh water. 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.

It should be noted that the use of PROSOCO cleaners might slightly darken or enhance the natural characteristics of the calcium silicate unit. To ensure a uniform appearance, always pre-wet the surface before applying cleaning products, keep lower areas wet to avoid streaks. Apply the cleaner evenly on the CSUs face working from the bottom up and thoroughly rinse the surface with fresh water to ensure all of the cleaner has been removed from the CSU. Failure to follow application instructions can result in an uneven and blotchy appearance.

Photos of "Cinnamon" Smooth Face CSU after cleaning:



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 PD – A low odor, alkaline stable, water-based blend of silanes and oligomeric alkoxysiloxanes. Weather Seal Siloxane PD is supplied pre-diluted and is designed for use on concrete and clay masonry surfaces. Weather Seal Siloxane PD penetrates more deeply than conventional water or solvent-based 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

TREATMENTS	RESULTS
"White" Split Face	
Untreated Control	40 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"White" Smooth Face	
Untreated Control	47 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Wheat" Split Face	
Untreated Control	50 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Wheat" Smooth Face	
Untreated Control	55 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph

TEST RESULTS Continued- Protective Water Repellents:

“Taupe” Split Face	
Untreated Control	48 mph
Siloxane PD	59 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Taupe” Smooth Face	
Untreated Control	55 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Olive” Split Face	
Untreated Control	50 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Olive” Smooth Face	
Untreated Control	55 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Sage” Split Face	
Untreated Control	50 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Sage” Smooth Face	
Untreated Control	53 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph

TEST RESULTS Continued- Protective Water Repellents:

“Cinnamon” Split Face	
Untreated Control	<40 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Cinnamon” Smooth Face	
Untreated Control	55 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Nutmeg” Split Face	
Untreated Control	50 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Nutmeg” Smooth Face	
Untreated Control	55 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Rust” Split Face	
Untreated Control	<40 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
“Rust” Smooth Face	
Untreated Control	52 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph

TEST RESULTS Continued- Protective Water Repellents:

"Paprika" Split Face	
Untreated Control	40 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph
"Paprika" Smooth Face	
Untreated Control	55 mph
Siloxane PD	60 mph
Siloxane WB (1:9)	60 mph
Custom Masonry Sealer	60 mph

CONCLUSIONS - Protective Water Repellents:

Based upon laboratory evaluations, all of the submitted Renaissance® calcium silicate units exhibited above average water repellency when treated with all of the water-repellents tested.

RECOMMENDATIONS - Protective Water Repellents:

Based on evaluations, Sure Klean® Weather Seal Siloxane PD, Sure Klean® Weather Seal Siloxane WB Concentrate diluted with 9 parts water, and Sure Klean® Custom Masonry Sealer can be recommended for jobsite testing on all of the Renaissance® calcium silicate units submitted by Building Stone Products, Inc.

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

JLA/csm

Laboratory Report

Block Program Evaluation

Building Stone Products, Inc.
Lemont, IL

Project No. **0101-07 BP**

Prepared For:

Frank Murphy
Building Stone Products, Inc.
10800 S. Rt. 83
Lemont, IL 60439

Prepared By:

PROSOCO, Inc.
March 2001