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Submitted Information

For: Jeff Lucas
cc: Gary Hayes
Brian Koenings

Subject: Majestic Block & Brick, Inc.
Mooresville, IN

Date: August 15, 2008

Project: 0807-01 PTP

Samples Submitted: 3 types of Concrete Masonry Units (CMU's)

Sample	Name	Color	Integral Water Repellent	Size
Split-face CMU	"Coral"	Red	Dry-Block®	Various
Split-face CMU	"Sahara"	Brown	Dry-Block®	Various
Split-face CMU	"Graystone"	Tan	Dry-Block®	Various

Submitted by: Jeff Lucas

Introduction

Architectural Materials Testing (AMT) Laboratories is a Boyer Industries company that provides laboratory testing and consulting services for the construction industry. Laboratory testing includes evaluating chemical cleaning products and protective treatments for a variety of new and existing architectural materials.

This report includes descriptions of the PROSOCO, Inc. products and test methods that were used. Following test results and conclusions, the report provides recommendations for the most effective products and procedures.

Purpose of Testing

Three types of integrally colored split-face CMU's, all with large, small and fine aggregate were submitted for testing to AMT Laboratories by PROSOCO, Inc. to determine the optimum cleaning/cure time combination for complete removal of mortar and related new construction soiling. The effectiveness of protective water repellents suitable for the submitted CMU's was also evaluated.

New Construction Cleaning – Sure Klean® Custom Masonry Cleaner and Sure Klean® Burnished Custom Masonry Cleaner were evaluated to determine the optimal concentration of cleaner for removal of laboratory applied mortar which also leaves the external surface looking most like the natural through-body color of the CMU.

To simulate new construction soiling all samples were placed on a bench with finished surface facing upward. Hollow cylinders measuring 50 mm in diameter and 75 mm tall were positioned on top of each sample and filled with a wet mixture of Type S mortar. The wet, mortar-filled cylinder was allowed to remain in contact with the samples for 10 minutes before removal.

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

Color uniformity was evaluated by comparing aggregate exposure and surface pigment alteration/removal of each cleaned surface compared to the natural through-body color of the submitted CMU.

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

Surface Pigment Alteration/Removal 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's.

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 an 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.

Protective Water Repellents – Sure Klean® Weather Seal Siloxane WB Concentrate, Sure Klean® Weather Seal Blok-Guard® & Graffiti Control, and Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II were evaluated for their ability to provide water repellency to the split-face CMU samples.

Products Evaluated**New Construction Cleaning Products Evaluated**

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

Protective Water Repellent Products Evaluated

Sample	Product	Dilution
All Submitted CMU's	Sure Klean® Weather Seal Siloxane WB Concentrate	1:9
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	Concentrate
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	Concentrate

New Construction Cleaning

These cleaning trials were conducted to determine the optimal concentration of cleaner to most efficiently remove Type S mortar from the submitted samples while providing the best color uniformity when compared to the through-body color of the submitted split-face CMUs.

Description of Products Evaluated – New Construction Cleaning

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 – Removes common construction and atmospheric staining from custom masonry and other architectural concrete surfaces. This general-purpose, non-etching, acidic cleaner removes rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Burnished Custom Masonry Cleaner adds depth to colors and brightens white matrices and exposed aggregate.

Sample Preparation – New Construction Cleaning

Type S mortar was prepared in compliance with the manufacturer's instructions, applied to the sample's surface and allowed to cure for 3, 7, and 14 days. Mortar removal was accomplished using chemical assistance and a high-pressure water rinse with pressure rinsing equipment. The removal of Type S masonry mortar was visually evaluated after 3, 7, and 14 days of curing. A visual examination was also made to determine the optimal dilution of the tested cleaners that provide the best color uniformity when compared to the through-body color of the submitted split-face CMU's.

Test Method – New Construction Cleaning

Chemical cleaners were evaluated using the following procedure:

1. Pre-wet the surface with water.
2. Apply at the appropriate dilutions.
3. Allow appropriate dwell time, as specified.
 - Sure Klean® Custom Masonry Cleaner..... 3-5 minutes
 - Sure Klean® Burnished Custom Masonry Cleaner 3-5 minutes
4. Reapply the product 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 Equipment** – Masonry washing equipment generating approximately 700-800 psi with a water flow rate of 8 gallons per minute delivered through a 45 degree fan spray tip was used for rinsing.

Test Results – New Construction Cleaning**Cleaning Effectiveness (% Type S Mortar Removal)**

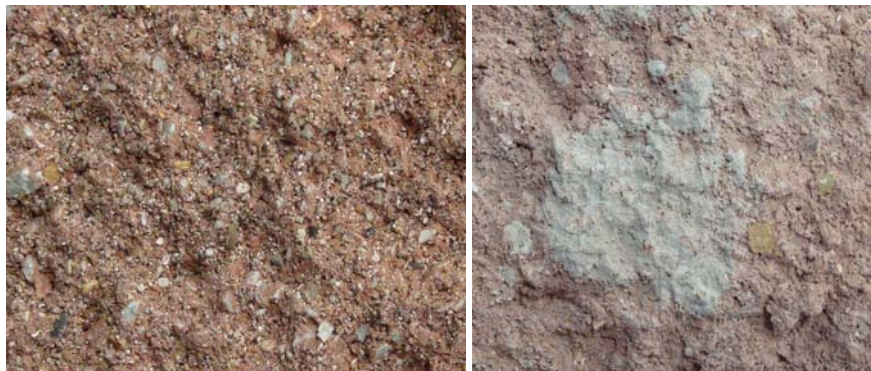
“Coral” Split-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Custom Masonry Cleaner	1:2	100 %	100 %	100 %
Sure Klean® Custom Masonry Cleaner	1:4	100 %	100 %	100 %
Sure Klean® Custom Masonry Cleaner	1:6	100 %	100 %	100 %
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100 %	100 %	100 %
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100 %	100 %	100 %
“Graystone” Split-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Custom Masonry Cleaner	1:2	100 %	100 %	100 %
Sure Klean® Custom Masonry Cleaner	1:4	100 %	100 %	100 %
Sure Klean® Custom Masonry Cleaner	1:6	100 %	100 %	100 %
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100 %	100 %	100 %
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100 %	100 %	100 %
Sure Klean® Custom Masonry Cleaner	1:2	100 %	100 %	100 %
“Sahara” Split-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Custom Masonry Cleaner	1:2	100 %	100 %	100 %
Sure Klean® Custom Masonry Cleaner	1:4	100 %	100 %	100 %
Sure Klean® Custom Masonry Cleaner	1:6	100 %	100 %	100 %
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100 %	100 %	100 %
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100 %	100 %	100 %

Test Results – Color Uniformity

Substrate: Split-face CMU		Pigment Color: "Coral"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	1	2
Custom Masonry Cleaner	1:4	1	2
Custom Masonry Cleaner	1:6	1	2
Burnished Custom Masonry Cleaner	1:2	1	2
Burnished Custom Masonry Cleaner	1:3	1	2
Substrate: Split-face CMU		Pigment Color: "Graystone"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	2	2
Custom Masonry Cleaner	1:4	2	2
Custom Masonry Cleaner	1:6	2	2
Burnished Custom Masonry Cleaner	1:2	2	2
Burnished Custom Masonry Cleaner	1:3	2	2
Substrate: Split-face CMU		Pigment Color: "Sahara"	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Custom Masonry Cleaner	1:2	2	3
Custom Masonry Cleaner	1:4	2	3
Custom Masonry Cleaner	1:6	2	3
Burnished Custom Masonry Cleaner	1:2	3	3
Burnished Custom Masonry Cleaner	1:3	3	3

Photographs – New Construction Cleaning**“Coral” Split-face CMU; 3 Day Cleaning**

Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Coral” Split-face CMU; 3 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Coral” Split-face CMU; 3 Day Cleaning

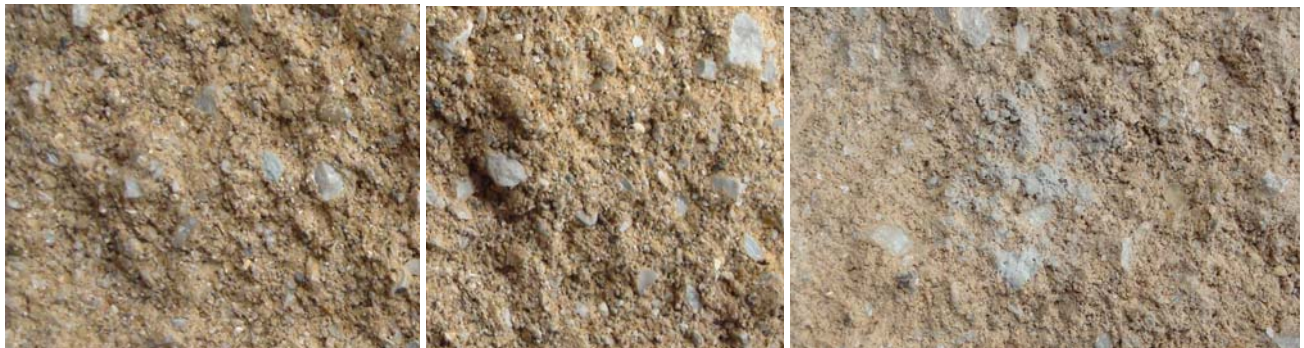
Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – New Construction Cleaning**“Sahara” Split-face CMU; 3 Day Cleaning**

Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Sahara” Split-face CMU; 3 Day Cleaning

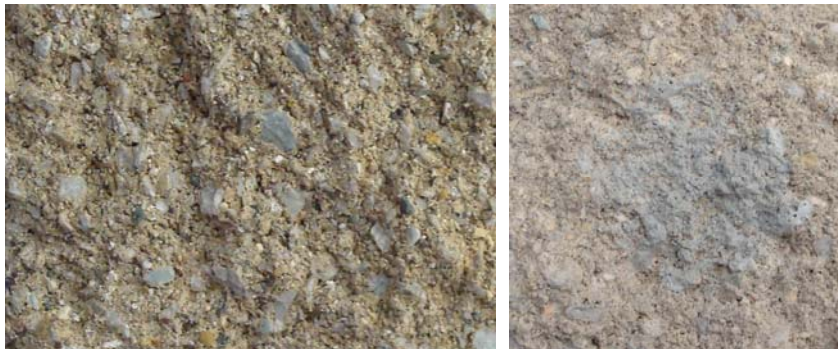
Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Sahara” Split-face CMU; 3 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – New Construction Cleaning**“Graystone” Split-face CMU; 3 Day Cleaning**

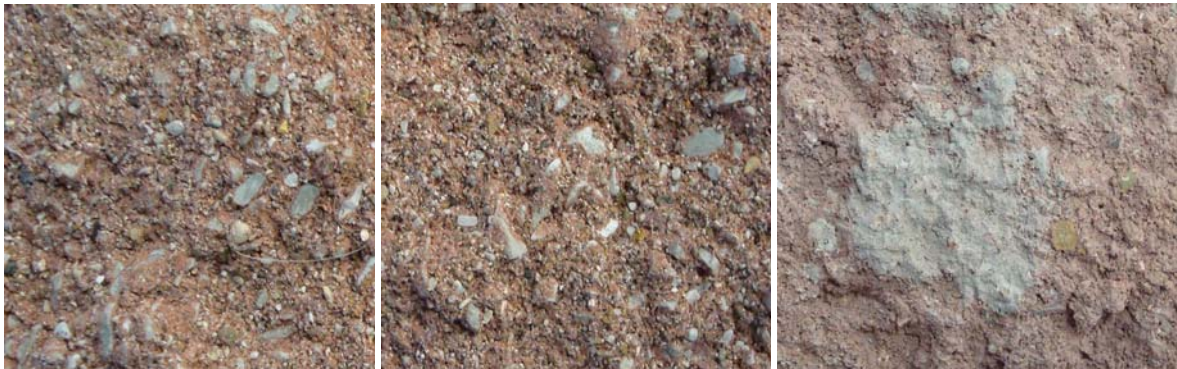
Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Graystone” Split-face CMU; 3 Day Cleaning

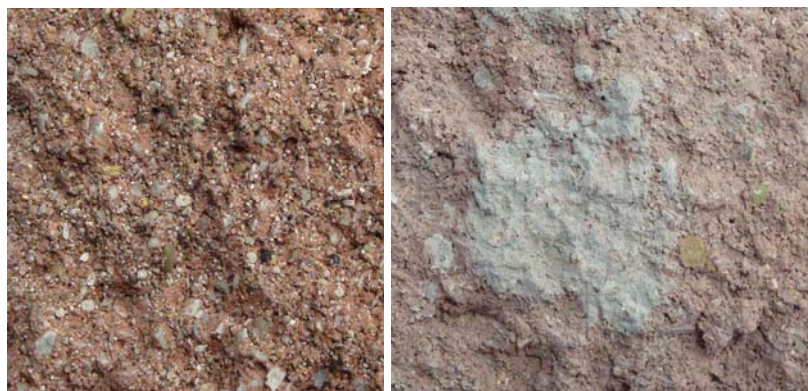
Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Graystone” Split-face CMU; 3 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – New Construction Cleaning**“Coral” Split-face CMU; 7 Day Cleaning**

Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Coral” Split-face CMU; 7 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Coral” Split-face CMU; 7 Day Cleaning

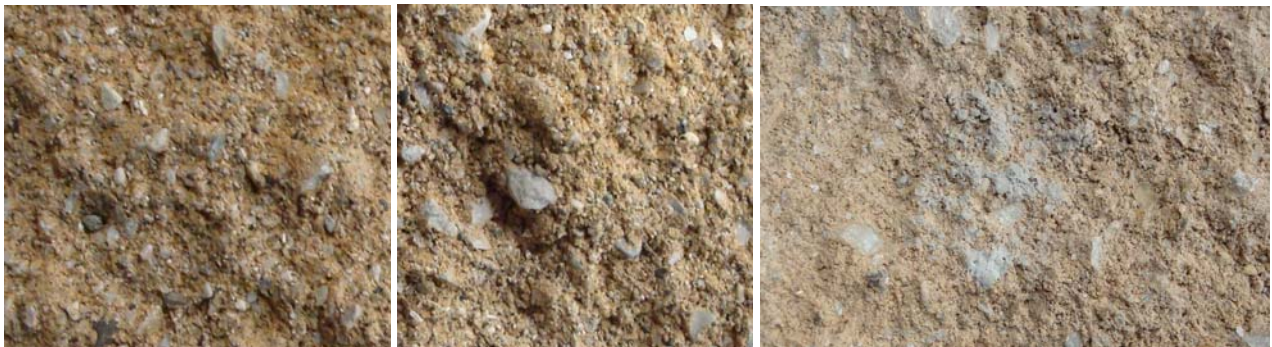
Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – New Construction Cleaning**“Sahara” Split-face CMU; 7 Day Cleaning**

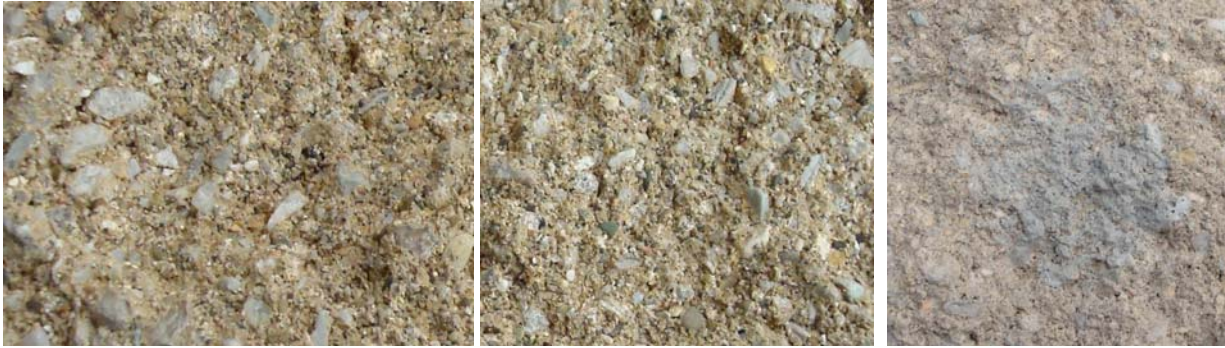
Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Sahara” Split-face CMU; 7 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Sahara” Split-face CMU; 7 Day Cleaning

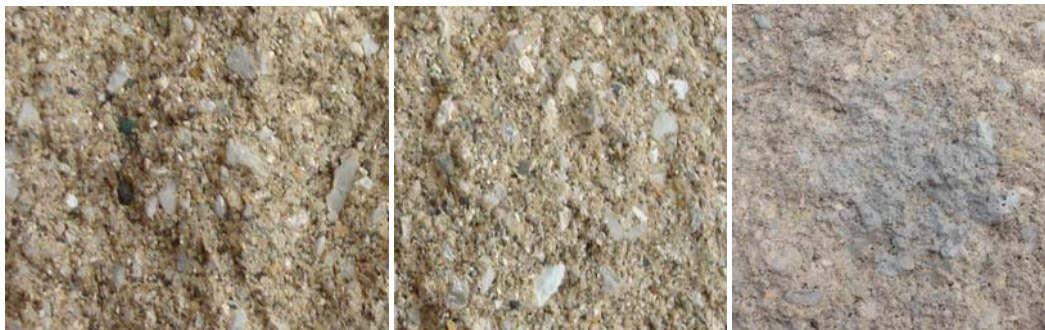
Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – New Construction Cleaning**“Graystone” Split-face CMU; 7 Day Cleaning**

Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Graystone” Split-face CMU; 7 Day Cleaning

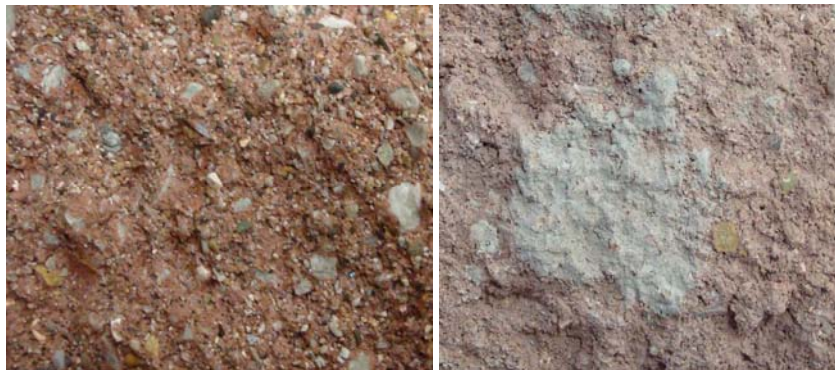
Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Graystone” Split-face CMU; 7 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – New Construction Cleaning**“Coral” Split-face CMU; 14 Day Cleaning**

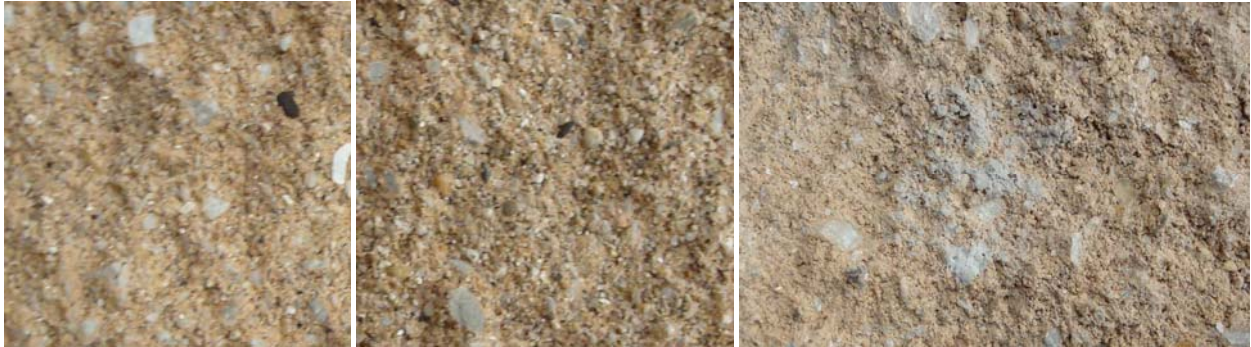
Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Coral” Split-face CMU; 14 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Coral” Split-face CMU; 14 Day Cleaning

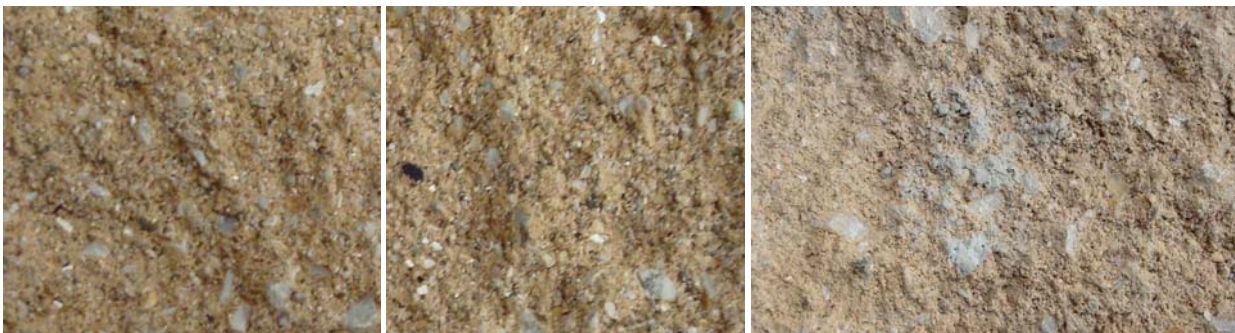
Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – New Construction Cleaning**“Sahara” Split-face CMU; 14 Day Cleaning**

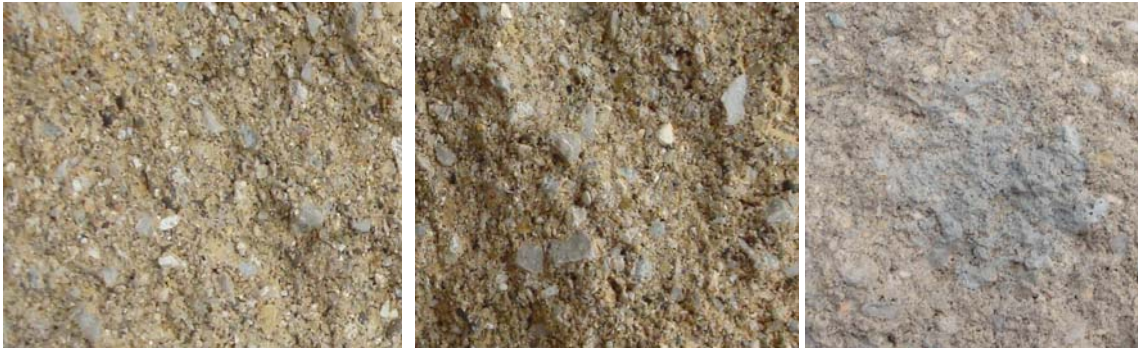
Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Sahara” Split-face CMU; 14 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Sahara” Split-face CMU; 14 Day Cleaning

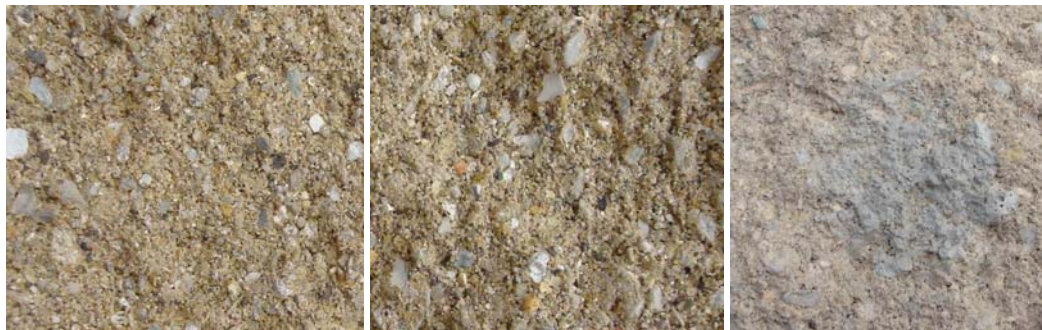
Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – New Construction Cleaning**“Graystone” Split-face CMU; 14 Day Cleaning**

Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Uncleaned Control
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“Graystone” Split-face CMU; 14 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:6)	Uncleaned Control
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“Graystone” Split-face CMU; 14 Day Cleaning

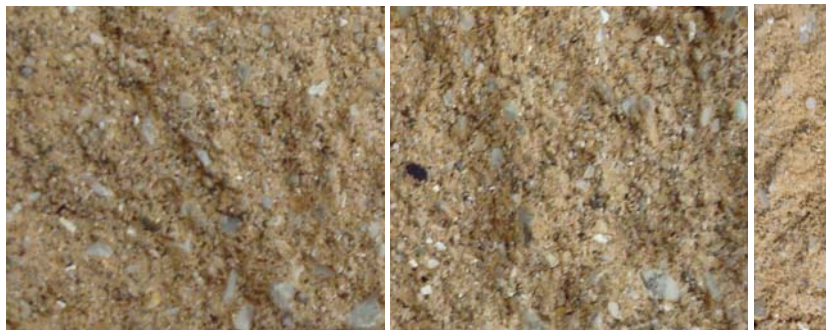
Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Uncleaned Control
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Photographs – Color Uniformity**“Sahara” Split-face CMU; Color Uniformity**

Sure Klean® Burnished Custom Masonry Cleaner (1:2)	Sure Klean® Burnished Custom Masonry Cleaner (1:3)	Through-body Control
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“Sahara” Split-face CMU; 14 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:6)	Through-body Control
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“Sahara” Split-face CMU; 14 Day Cleaning

Sure Klean® Custom Masonry Cleaner (1:2)	Sure Klean® Custom Masonry Cleaner (1:4)	Through-body Control
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Conclusions – New Construction Cleaning

Based on the test results, all dilutions of both Sure Klean® Custom Masonry Cleaner and Sure Klean® Burnished Custom Masonry Cleaner successfully removed all of the Type S mortar from the submitted split-face CMU samples even after the mortar remained on the surface of the sample for 14 days.

All dilutions of Sure Klean® Custom Masonry Cleaner removed moderate to significant amounts of surface pigment from the surface of the split-face CMU's, exposing aggregate and exposing a darker pigment when compared to the through-body.

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

Recommendations – New Construction Cleaning

Recommendations for cleaning for each type of split-face CMU sample submitted by Majestic Block & Brick, Inc., Mooresville, IN are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar while providing the best match to the through-body color of the split-face CMU's.

Sample	New Construction Cleaning (Type S mortar, 14 day cleaning)
"Coral" "Graystone"	Sure Klean® Custom Masonry Cleaner (1:6) or Sure Klean® Burnished Custom Masonry Cleaner (1:3)
"Sahara"	Sure Klean® Burnished Custom Masonry Cleaner (1:3)

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.

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.

Note: Sure Klean® Custom Masonry Cleaner can be used on integrally colored split-face CMU's.

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
-

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

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control – A clear, solvent-based silicone elastomer formulated to weatherproof CMU and other porous masonry materials. Blok-Guard® & Graffiti Control protects masonry surfaces from repeated graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering.

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II – A clear-drying, water-based silicone emulsion for weatherproofing CMU and other porous masonry materials. Blok-Guard® & Graffiti Control II also protects masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control II protects exterior walls exposed to normal weathering. Graffiti removal from treated surfaces is fast and easy using Defacer Eraser® Graffiti Wipe. Blok-Guard® & Graffiti Control II is easy to apply with low-pressure spray, brush or roller.

Sample Preparation – Protective Water Repellents

The submitted samples were scored and allowed to dry for 24 hours prior to treatment. The treatments were applied by brush in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions. The treatments were allowed to cure for at least 72 hours prior to testing.

Test Methods – Protective Water Repellents

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

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

Test Results – Protective Water Repellents**Water Absorption Tube Test: RILEM II.4, 60 mph, 20 Minutes**

RESULTS	
“Coral” Split-face CMU	
Untreated Control	<40 mph
Sure Klean® Weather Seal Siloxane WB Concentrate (1:9)	58 mph
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	59 mph
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	57 mph
“Graystone” Split-face CMU	
Untreated Control	<40 mph
Sure Klean® Weather Seal Siloxane WB Concentrate (1:9)	58 mph
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	59 mph
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	57 mph
“Sahara” Split-face CMU	
Untreated Control	56 mph
Sure Klean® Weather Seal Siloxane WB Concentrate (1:9)	59 mph
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control	59 mph
Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II	58 mph

Photographs – Protective Water Repellents**Split-face CMU's; RILEM II.4, 60 mph, 20 Minutes**

Sahara	Coral	Graystone
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Conclusions – Protective Water Repellents

Based upon laboratory evaluations, all of the PROSOCO, Inc. products tested provided excellent water repellency to each of the submitted samples. In addition, all treatments provided a slight to moderate color enhancement to the submitted split-face CMU's.

Recommendations – Protective Water Repellents

Recommendations for water repellency for each type of split-face CMU submitted by Majestic Block & Brick, Inc. Mooresville, IN 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.

Sample	Protective Water Repellents
"Coral"	Sure Klean® Weather Seal Siloxane WB Concentrate (1:9)
"Graystone"	or
"Sahara"	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control
	or
	Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II

***NOTE:** Sure Klean® Weather Seal Blok-Guard® & Graffiti Control is manufactured and marketed in compliance with VOC regulations. This product may not be suitable for sale in states and districts with more restrictive regulations.

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.



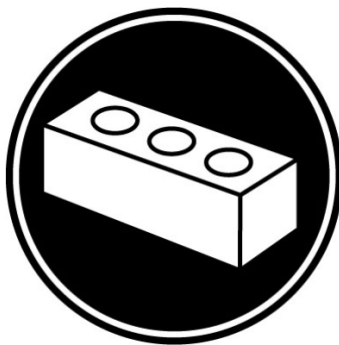
Alia Bober
Project Testing Laboratory Technician



PALLET TAG PROGRAM

Laboratory Report

Majestic Block & Brick, Inc.
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P.O. Box 99
Mooresville, IN 46158



Project No. 0807-01 PTP

Prepared For:
PROSOCO
SINCE 1939

Prepared By:
AMT Laboratories
August 2008