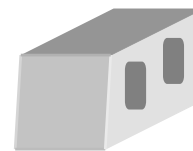




BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

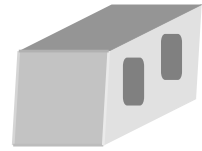
Page 1

TABLE OF CONTENTS

| | |
|---|-----|
| SAMPLES SUBMITTED | 3 |
| PURPOSE OF TEST | 4-5 |
| PRODUCTS EVALUATED | 6 |
| SECTION A – CLEANING INTEGRALLY COLORED CMUs | |
| DESCRIPTION OF PRODUCTS EVALUATED | 7 |
| TEST METHOD | 7 |
| TEST RESULTS | 8-9 |
| CONCLUSIONS..... | 10 |
| RECOMMENDATIONS..... | 10 |
| SECTION B – SURFACE ALTERATIONS | |
| DESCRIPTION OF PRODUCTS EVALUATED | 11 |
| TEST METHOD | 11 |
| TEST RESULTS | 12 |
| CONCLUSIONS..... | 13 |
| RECOMMENDATIONS..... | 13 |
| SECTION C - PROTECTIVE WATER REPELLENTS | |
| DESCRIPTION OF PRODUCTS EVALUATED | 14 |
| TEST METHODS..... | 14 |
| TEST RESULTS | 15 |
| CONCLUSIONS..... | 16 |
| RECOMMENDATIONS..... | 16 |
| ATTACHMENTS | |
| Attachment # 1 – PHOTO A & B | |
| Attachment # 2 – PHOTO C | |
| Technical Services TECH Note RILEM Test Method No. II.4 | |
| Product Data literature for all products evaluated | |



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 2

FOR: Steve Hunt
cc: Jim Lucas
Perry Surber
John Bourne

SUBJECT: Northfield Block
1 Hunt Court
Mundelein, Illinois

DATE: November 28, 2001

PROJECT: 0110-04 BP

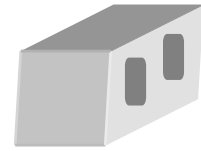
SAMPLES SUBMITTED: 4 types of "Harvard Brick"

| <u>Sample</u> | <u>Color</u> | <u>Size</u> |
|--------------------------------|----------------------|-----------------|
| (4) Concrete brick – face only | Guanston Blend (red) | 3.5" x 16" x 1" |
| (4) Concrete brick – face only | Kohl's (red) | 3.5" x 16" x 1" |
| (4) Concrete brick – face only | Charles Blend (red) | 3.5" x 16" x 1" |
| (4) Concrete brick – face only | #10 (red) | 3.5" x 16" x 1" |

Submitted by: Steve Hunt



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 3

PURPOSE OF TESTING:

Four integrally colored smooth face concrete bricks 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 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 cementitious mortar. The wet, mortar-filled cylinder is allowed to remain in contact with the CMU 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. Surface Alteration Testing - Sure Klean[®] Custom Masonry Cleaner and Sure Klean[®] Concrete Brick Cleaner 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 sample 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 sample 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 sample.

Staining is the visual examination for changes that are the result of a chemical reaction that leaves a staining precipitate.

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

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

NOTE: When cleaning integrally colored CMU.

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

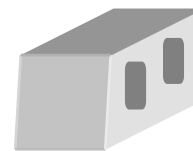
In addition to removing excess mortar and construction related soiling, the goal of any cleaning operation undertaken on integrally colored CMU should include removal of unnaturally high concentrations of surface pigment. By revealing the natural through-body color on the integrally colored unit, the overall color uniformity and weathering resistance of the completed CMU wall is improved.

C. Protective Water Repellents - Sure Klean[®] 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.



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 4

CLEANING PRODUCTS EVALUATED

| SAMPLE | PRODUCT | DILUTION |
|-------------------------------|------------------------------------|----------|
| All Colors of Concrete Bricks | Sure Klean® Custom Masonry Cleaner | 1:4 |
| | | 1:6 |
| | Sure Klean® Concrete Brick Cleaner | 1:2 |
| | | 1:3 |

SURFACE ALTERATION PRODUCTS EVALUATED

| SAMPLE | PRODUCT | DILUTION |
|-------------------------------|------------------------------------|----------|
| All Colors of Concrete Bricks | Sure Klean® Custom Masonry Cleaner | 1:4 |
| | | 1:6 |
| | Sure Klean® Concrete Brick Cleaner | 1:2 |
| | | 1:3 |

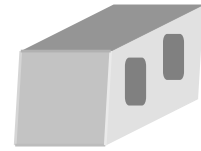
WATER REPELLENT PRODUCTS EVALUATED

| SAMPLE | PRODUCT | DILUTION |
|-------------------------------|--|-------------|
| All Colors of Concrete Bricks | Sure Klean® Custom Masonry Sealer | Concentrate |
| | Sure Klean® Weather Seal Siloxane WB Concentrate | 1:9 |

Dilution ratios refer to parts concentrate : parts fresh water.



BLOCK PROGRAM LABORATORY REPORT



SECTION A – CLEANING INTEGRALLY COLORED CMUs

DESCRIPTION OF PRODUCTS EVALUATED

These cleaning trials were conducted to determine the optimal cleaning/cure time combination.

Sure Klean® Custom Masonry Cleaner – A general purpose, concentrated acidic cleaner for most custom masonry and colored concrete. Removes concrete splashes, excess mortar, mud, heavy efflorescence and surface soiling, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 2-6 parts water. Apply by brush or low-pressure spray.

Sure Klean® 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 rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Concrete Brick Cleaner adds depth to colors and brightens white matrices and exposed aggregate.

TEST METHOD – Cleaning

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

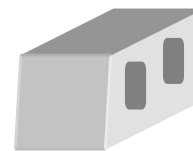
1. Prewet the surface with water.
2. Apply each cleaner at the appropriate dilutions.
3. Allow appropriate exposure time:

| | |
|--|-----------|
| Sure Klean® Custom Masonry Cleaner | 3 minutes |
| Sure Klean® Concrete Brick Cleaner | 3 minutes |
4. Reapply the products and moderately agitate with a brush.
5. Pressure rinse thoroughly.*
6. Allow the surface to dry for at least 18 hours and visually examine.

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



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

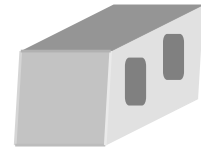
Page 6

TEST RESULTS - Cleaning

| Sample | Cleaner | Dilution | Cure | Effectiveness |
|---------------------------------------|------------------------------|----------|--------|---------------|
| "Guanston Blend" Concrete Brick | Custom Masonry Cleaner | 1:4 | 3 day | 99% |
| | | 1:6 | | 100% |
| | | 1:4 | 7 day | 90% |
| | | 1:6 | | 100% |
| | | 1:4 | 14 day | 100% |
| | | 1:6 | | 100% |
| Sample | Cleaner | Dilution | Cure | Effectiveness |
| "Kohl's" Concrete Brick | Custom Masonry Cleaner | 1:4 | 3 day | 100% |
| | | 1:6 | | 100% |
| | | 1:4 | 7 day | 100% |
| | | 1:6 | | 100% |
| | | 1:4 | 14 day | 100% |
| | | 1:6 | | 100% |
| Sample | Cleaner | Dilution | Cure | Effectiveness |
| "St. Charles Blend" Concrete Brick | Custom Masonry Cleaner | 1:4 | 3 day | 100% |
| | | 1:6 | | 100% |
| | | 1:4 | 7 day | 100% |
| | | 1:6 | | 100% |
| | | 1:4 | 14 day | 100% |
| | | 1:6 | | 100% |
| Sample | Cleaner | Dilution | Cure | Effectiveness |
| "#10" Concrete Brick | Custom Masonry Cleaner | 1:4 | 3 day | 100% |
| | | 1:6 | | 100% |
| | | 1:4 | 7 day | 100% |
| | | 1:6 | | 100% |
| | | 1:4 | 14 day | 100% |
| | | 1:6 | | 100% |
| Sample | Cleaner | Dilution | Cure | Effectiveness |
| "Guanston Blend" Concrete Brick | Concrete Brick Cleaner | 1:2 | 3 day | 95% |
| | | 1:3 | | 97% |
| | | 1:2 | 7 day | 90% |
| | | 1:3 | | 95% |
| | | 1:2 | 14 day | 100% |
| | | 1:3 | | 100% |



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

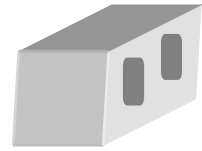
Page 7

TEST RESULTS - Cleaning

| Sample | Cleaner | Dilution | Cure | Effectiveness |
|---------------------------------------|---------------------------|----------|--------|---------------|
| "Kohl's" Concrete Brick | Concrete Brick Cleaner | 1:2 | 3 day | 99% |
| | | 1:3 | | 98% |
| | | 1:2 | 7 day | 95% |
| | | 1:3 | | 95% |
| | | 1:2 | 14 day | 85% |
| | | 1:3 | | 95% |
| Sample | Cleaner | Dilution | Cure | Effectiveness |
| "St. Charles Blend" Concrete Brick | Concrete Brick Cleaner | 1:2 | 3 day | 95% |
| | | 1:3 | | 98% |
| | | 1:2 | 7 day | 100% |
| | | 1:3 | | 100% |
| | | 1:2 | 14 day | 99% |
| | | 1:3 | | 100% |
| Sample | Cleaner | Dilution | Cure | Effectiveness |
| "#10" Concrete Brick | Concrete Brick Cleaner | 1:2 | 3 day | 97% |
| | | 1:3 | | 98% |
| | | 1:2 | 7 day | 99% |
| | | 1:3 | | 99% |
| | | 1:2 | 14 day | 98% |
| | | 1:3 | | 99% |



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 8

CONCLUSIONS - Cleaning:

Based on the test data, all submitted block samples were efficiently cleaned with each dilution of the selected PROSOCO Inc.'s cleaning products. Sure Klean[®] Concrete Brick Cleaner in both dilutions was effective at cleaning the submitted concrete bricks with an 85 – 100% removal of the applied mortar. Sure Klean[®] Custom Masonry Cleaner in both dilutions was slightly more effective at cleaning the submitted concrete bricks with a 90 – 100% removal of the applied mortar.

All dilutions of Sure Klean[®] Custom Masonry Cleaner and Sure Klean[®] Concrete Brick Cleaner tested affected the substrate in a similar manner, removing slight to moderate 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. Use higher concentrations and surface agitation to maximize aggregate exposure. Use low concentration and surface agitation to minimize aggregate exposure.

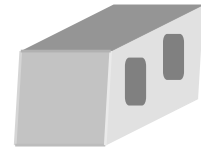
RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING:

Based on these evaluations, all of the dilutions of Sure Klean[®] Custom Masonry Cleaner and Sure Klean[®] Concrete Brick Cleaner tested can be recommended for job-site testing on all concrete bricks submitted by Northfield Block, Mundelein, IL. They all are effective in removing excess mortar, and they all assist in improving the color and uniformity of these concrete blocks. The most appropriate cleaner and dilution should be determined on the specific job-site, and will be dependent primarily on the nature and severity of soiling present at that location.

Note: To remove excess mortar while minimizing aggregate exposure and color enhancement, clean within 7 days of completion using Custom Masonry Cleaner diluted with 6 parts fresh water.



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 9

SECTION B – Surface Alterations:

DESCRIPTION OF PRODUCTS EVALUATED – Surface Alterations:

Sure Klean® Custom Masonry Cleaner – A general purpose, concentrated acidic cleaner for most custom masonry and colored concrete. Removes concrete splashes, excess mortar, mud, heavy efflorescence and surface soiling, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 2-6 parts water. Apply by brush or low-pressure spray.

Sure Klean® 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 rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Concrete Brick Cleaner adds depth to colors and brightens white matrices and exposed aggregate.

TEST METHOD – Surface Alteration Testing:

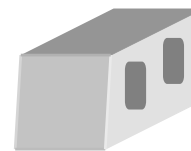
Dilution ratios refer to mixtures of parts concentrated cleaner : parts fresh water. Chemical cleaners were evaluated using the following procedure:

1. Prewet the surface with water.
2. Apply each cleaner at the appropriate dilutions.
3. Allow appropriate exposure time:
 - Custom Masonry Cleaner 3 minutes
 - Concrete Brick Cleaner..... 3-5 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.



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 10

TEST RESULTS – Surface Alteration

| Substrate: Concrete Brick | | Pigment Color: "Guanston Blend" | | | |
|----------------------------------|----------|---|------------------------------------|----------------|----------|
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal | Matrix Erosion | Staining |
| Custom Masonry Cleaner | 1:4 | 2 | 1 | 2 | 0 |
| Custom Masonry Cleaner | 1:6 | 1 | 1 | 1 | 0 |
| Concrete Brick Cleaner | 1:2 | 1 | 1 | 1 | 0 |
| Concrete Brick Cleaner | 1:3 | 1 | 1 | 1 | 0 |
| Substrate: Concrete Brick | | Pigment Color: "Kohl's" | | | |
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal | Matrix Erosion | Staining |
| Custom Masonry Cleaner | 1:4 | 2 | 1 | 2 | 0 |
| Custom Masonry Cleaner | 1:6 | 1 | 1 | 1 | 0 |
| Concrete Brick Cleaner | 1:2 | 1 | 1 | 1 | 0 |
| Concrete Brick Cleaner | 1:3 | 1 | 1 | 1 | 0 |
| Substrate: Concrete Brick | | Pigment Color: "St. Charles Blend" | | | |
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal | Matrix Erosion | Staining |
| Custom Masonry Cleaner | 1:4 | 2 | 1 | 2 | 0 |
| Custom Masonry Cleaner | 1:6 | 1 | 1 | 1 | 0 |
| Concrete Brick Cleaner | 1:2 | 1 | 1 | 1 | 0 |
| Concrete Brick Cleaner | 1:3 | 1 | 1 | 1 | 0 |
| Substrate: Concrete Brick | | Pigment Color: "#10" | | | |
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal | Matrix Erosion | Staining |
| Custom Masonry Cleaner | 1:4 | 2 | 2 | 2 | 0 |
| Custom Masonry Cleaner | 1:6 | 1 | 2 | 1 | 0 |
| Concrete Brick Cleaner | 1:2 | 1 | 2 | 1 | 0 |
| Concrete Brick Cleaner | 1:3 | 1 | 2 | 1 | 0 |

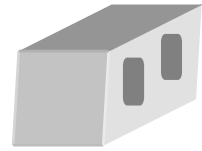
Scale used for reporting results of all categories

0 – no change
1 – slight
2 – moderate

3 – heavy
4 – excessive



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 11

CONCLUSIONS – Surface Alterations:

All dilutions of Sure Klean® Custom Masonry Cleaner and Sure Klean® Concrete Brick Cleaner tested effected the concrete bricks in a similar manner, removing heavy concentrations of pigmented matrix, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit.

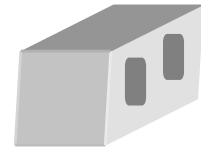
NOTE: Refer to Attachment # 1 “PHOTO A”, Attachment # 1 “PHOTO B” and Attachment # 2 “PHOTO C” for visual surface alterations.

RECOMMENDATIONS – Surface Alterations:

Based upon laboratory evaluations, Sure Klean® Custom Masonry Cleaner and Sure Klean® Concrete Brick Cleaner in all dilutions can be recommended for job-site testing on all of the samples submitted by Northfield Block, Mundelein, IL.



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 12

SECTION C - PROTECTIVE WATER REPELLENTS:

The testing described below evaluates the suitability of water repellent treatments.

The surface treatments evaluated were selected for their suitability for application based on the following selection criteria:

1. Weatherproofing properties
2. Color change
3. Ease of application

DESCRIPTIONS OF PRODUCTS EVALUATED - Protective Water Repellents:

Sure Klean® Custom Masonry Sealer - A clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, cast stone, and concrete block without altering the natural appearance. Custom Masonry Sealer penetrates and fills pores to prevent water penetration through exterior walls exposed to normal weathering as well as long-lasting protection against many types of graffiti.

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

SAMPLE PREPARATION - Protective Water Repellents:

The submitted concrete brick faces 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 72 hours prior to testing.

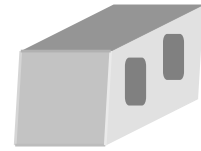
TEST METHODS - Protective Water Repellents:

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

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



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 13

TEST RESULTS - Protective Water Repellents

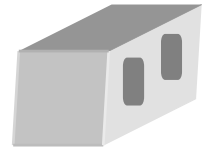
Water Absorption Tube Test: RILEM II.4, 60 mph, 20 Minutes

| RESULTS | |
|----------------------------|----------|
| "Guanston Blend" | |
| Untreated Control | < 40 mph |
| Custom Masonry Sealer | 57 mph |
| Siloxane WB 1:9 | 58 mph |
| "Kohl's" | |
| Untreated Control | < 40 mph |
| Custom Masonry Sealer | 60 mph |
| Siloxane WB 1:9 | 60 mph |
| "St. Charles Blend" | |
| Untreated Control | 55 mph |
| Custom Masonry Sealer | 58 mph |
| Siloxane WB 1:9 | 59 mph |
| "#10" | |
| Untreated Control | 55 mph |
| Custom Masonry Sealer | 58 mph |
| Siloxane WB 1:9 | 59 mph |

Dilution ratios refer to parts fresh water : concentrated cleaner.



BLOCK PROGRAM LABORATORY REPORT



PROSOCO, Inc.

Page 14

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 provided above average water repellency protection to all types of submitted concrete bricks.

RECOMMENDATIONS - 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 can be recommended for job-site testing on all types of concrete bricks submitted by Northfield Block, Mundelein, IL.

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.

Lisa Toburen
Assistant Laboratory Technician



PROSOCO, Inc.

Attachment #1

PHOTO A – “Kohl’s” concrete brick cleaned with Custom Masonry Cleaner

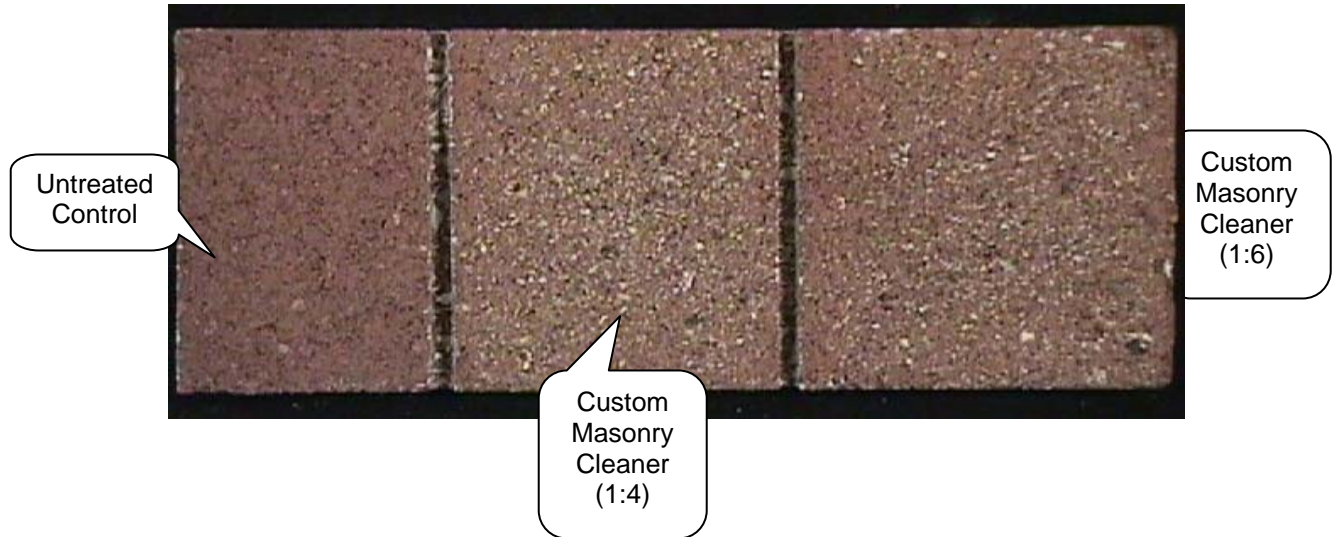
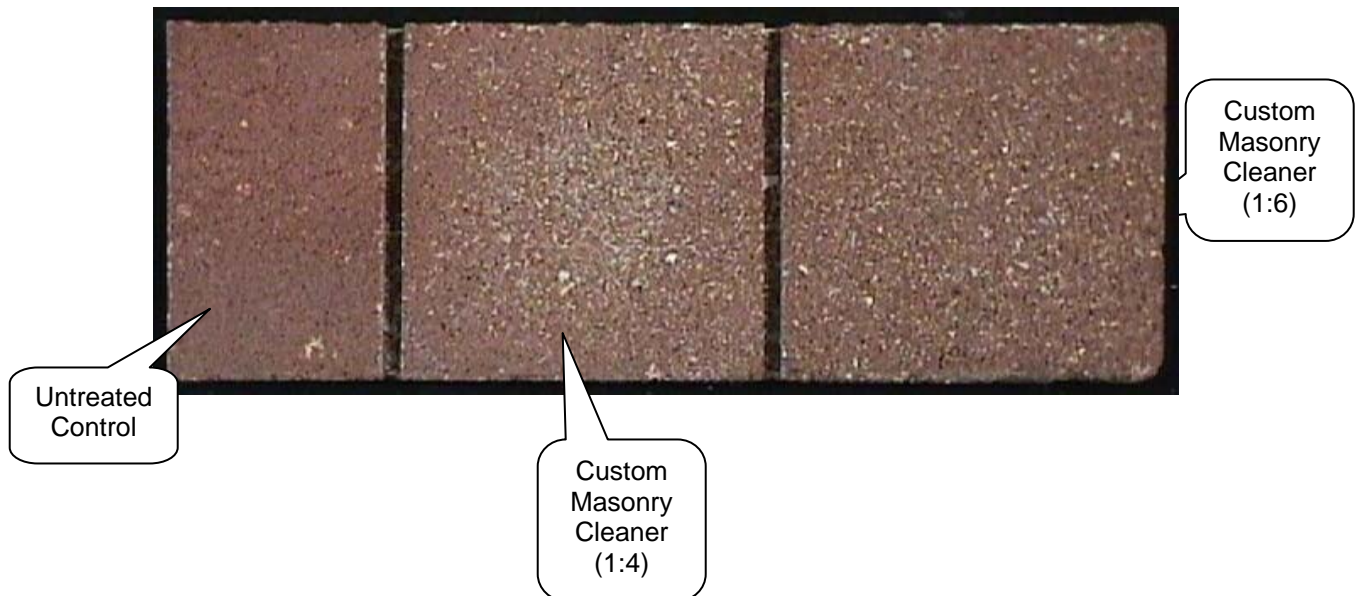


PHOTO B – “Guanston Blend” concrete brick cleaned with Custom Masonry Cleaner

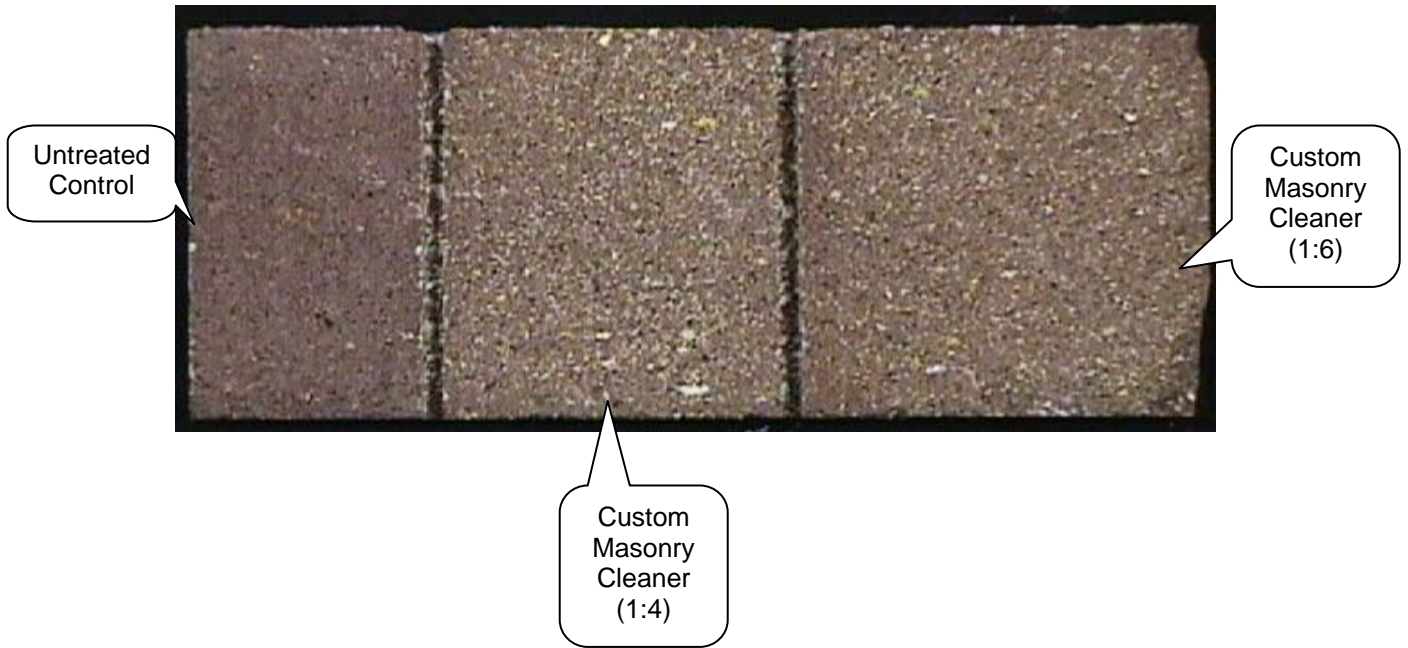


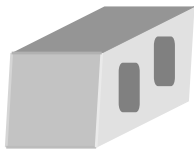


PROSOCO, Inc.

Attachment # 2

PHOTO C – “#10” concrete brick cleaned with Custom Masonry Cleaner





Laboratory Report

Block Program Evaluation

**Northfield Block
Mundelein, IL**

Project No. 0110-04 BP

Prepared For:

**Steve Hunt
Northfield Block
1 Hunt Court
Mundelein, IL**

Prepared By:



***PROSOCO, Inc.
November 2001***