

Table of Contents

Executive Summary i

Submitted Information 1

Introduction 1

Purpose of Testing..... 1

Products Evaluated..... 2

Limiting Surface Alterations 2

 Description of Products Evaluated – Limiting Surface Alterations..... 2

 Test Method – Limiting Surface Alterations 2

 Test Results – Limiting Surface Alterations 3

 Photographs – Limiting Surface Alterations..... 3

 Conclusions – Limiting Surface Alterations..... 4

 Recommendations – Limiting Surface Alterations 4

Graffiti Removal 5

 Description of Products Evaluated – Graffiti Removal 5

 Sample Preparation – Graffiti Removal..... 5

 Test Methods – Graffiti Removal..... 5

 Test Results – Graffiti Removal 6

 Photographs – Graffiti Removal 6

 Conclusions – Graffiti Removal..... 7

 Recommendations – Graffiti Removal 7

Attachments

 Technical Services TECH Note RILEM Tube Test Procedures

 Product Data literature for all products evaluated

Submitted Information

For: Steve Dean
cc: Joe Talecki
 John Bourne

Subject: Trenwyth Industries, Inc.
 Emigsville, PA

Date: August 31, 2006
Project: 0608-19 PTP
Samples Submitted: 1 type of "Astra-Glaze-SW+[®]" Glazed CMU

Sample Type	Name	Color	Integral Water Repellent	Size
Glazed CMU	"Sedona Clay - Astra-Glaze-SW+ [®] "	Gray w/ Orange Glazed Surface	None	8" x 16" x 2"

Submitted by: Steve Dean

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

One type of "Astra-Glaze-SW+[®]" glazed CMU was submitted for testing to AMT Laboratories by PROSOCO, Inc. to determine if the selected cleaners produce any surface alterations to the glazed surface of the submitted sample during new construction cleaning operations. In addition, graffiti control products suitable for glazed CMU's were evaluated.

Limiting Surface Alterations – Sure Klean[®] Burnished Custom Masonry Cleaner and Enviro Klean[®] Safety Klean were evaluated to determine if any surface alterations are created during new construction cleaning operations. The surface alteration evaluation was visually determined based upon perceived discoloration or erosion/etching of the samples based on the following:

Surface Finish Removal is the visual examination of the sample comparing the surface finish of the untreated control surface to the surface finish cleaned with selected product(s) at given dilutions.

Substrate Deterioration is the visual examination of the sample comparing the surface of the untreated control to surfaces cleaned with selected product(s) at given dilutions looking for any potential erosion/digestion of the sample.

Color Change is the visual examination comparing the color of the untreated control surface to color of surfaces cleaned with selected products at given dilutions.

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

Graffiti Removal – Sure Klean[®] Fast Acting Stripper and Defacer Eraser[®] Graffiti Wipe were evaluated for their ability to remove graffiti from the submitted sample.

Products Evaluated**Limiting Surface Alterations Products Evaluated**

Sample	Product	Dilution
"Sedona Clay – Astra-Glaze-SW+ [®] Glazed CMU	Sure Klean [®] Burnished Custom Masonry Cleaner	1:2, 1:3
	Enviro Klean [®] Safety Klean	1:2, 1:3

Graffiti Removal Products Evaluated

Sample	Product	Dilution
"Sedona Clay – Astra-Glaze-SW+ [®] Glazed CMU	Sure Klean [®] Fast Acting Stripper	Concentrate
	Defacer Eraser [®] Graffiti Wipe	Concentrate

Limiting Surface Alterations

These cleaning trials were conducted to determine if the evaluated cleaners cause any surface alterations during new construction cleaning operations.

Description of Products Evaluated – Limiting Surface Alterations

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.

Enviro Klean[®] Safety Klean – An effective, safe, alternative to acidic compounds for cleaning brick, tile, and concrete surfaces. Safety Klean rids new masonry construction of excess mortar, dirt and other common job site soiling. It's ideal for projects where traditional acidic cleaners are not allowed. Non-fuming Safety Klean contains no hydrochloric or other traditional inorganic acids and is safe for use on and around most metal surfaces. Always test. Additionally, it is up to 70 percent more effective than citric and glycolic acids and 50 percent more effective than phosphoric acid.

Test Method – Limiting Surface Alterations

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 [®] Burnished Custom Masonry Cleaner.....	3-5 minutes
Enviro Klean [®] Safety Klean.....	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.

***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.

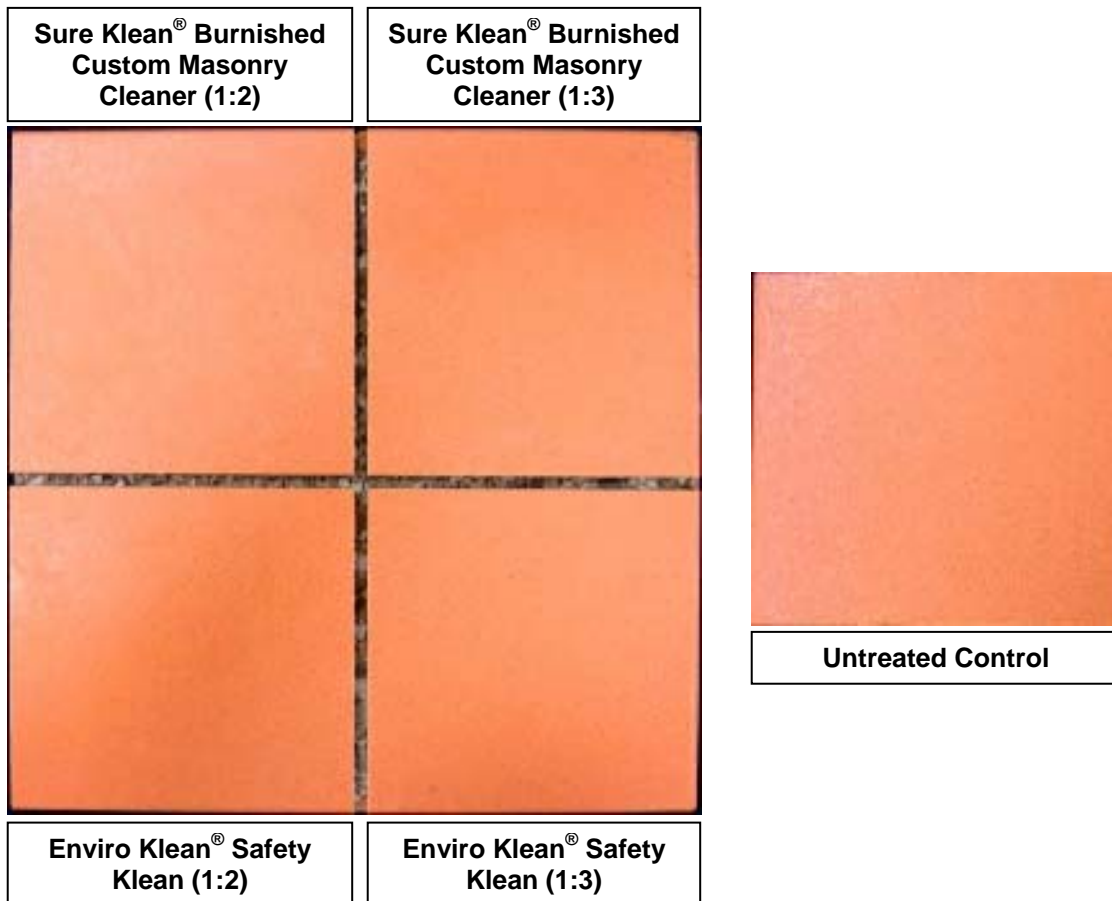
Test Results – Limiting Surface Alterations

Substrate: Glazed CMU		Pigment Color: "Sedona Clay – Astra-Glaze-SW+ [®] "			
Product	Dilution	Surface Finish Removal	Substrate Deterioration	Color Change	Staining
Sure Klean [®] Burnished Custom Masonry Cleaner	1:2	0	0	0	0
	1:3	0	0	0	0
Enviro Klean [®] Safety Klean	1:2	0	0	0	0
	1:3	0	0	0	0

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

Photographs – Limiting Surface Alterations

"Sedona Clay – Astra-Glaze-SW+[®]" Glazed CMU



Conclusions – Limiting Surface Alterations

Based on the test results, neither Sure Klean® Burnished Custom Masonry Cleaner nor Enviro Klean® Safety Klean caused any surface alterations to the submitted glazed CMU samples.

It is recommended that the selected cleaners always be used in the lowest possible concentration to limit any potential surface alterations to the submitted samples.

Recommendations – Limiting Surface Alterations

Recommendations for cleaning for each type of glazed CMU submitted by Trenwyth Industries, Inc., Emigsville, PA are provided in the chart below. Recommendations are based on the optimum dilution for limiting surface alterations to the submitted samples.

Sample	New Construction Cleaning (Type S mortar, 14 day cleaning)
"Sedona Clay – Astra-Glaze-SW+®"	Sure Klean® Burnished Custom Masonry Cleaner (1:2) OR (1:3) OR Enviro Klean® Safety Klean (1:2) OR (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. Because the severity of graffiti varies from location to location, on-site testing should be conducted to determine the most appropriate graffiti control product and procedure for a particular project.

Graffiti Removal

This evaluation determines the effectiveness of graffiti removal products in removing staining of enamel spray paint and permanent markers.

Description of Products Evaluated – Graffiti Removal

Defacer Eraser® Graffiti Wipe – An easy-to-use graffiti remover that does not contain methanol, methylene chloride or other “halogenated” solvents prohibited on many projects. Graffiti Wipe removes a variety of graffiti stains from most smooth masonry, wood and metal surfaces.

Sure Klean® Fast Acting Stripper – A thixotropic stripping compound formulated specifically for removal of high strength paints and coatings such as epoxies, polyurethanes, and floor enamels. Additionally, Fast Acting Stripper dissolves most spray paints, marking pens, lacquers and other graffiti.

Graffiti Agents

Interior/Exterior Spray Paint (Red)
Permanent Marker (Green)
Permanent Marker (Red)
Permanent Marker (Black)

Sample Preparation – Graffiti Removal

Spray paint and markers were applied as graffiti agents to the untreated surface of the submitted CMU. Removal of the graffiti agents was attempted 24 hours after application, using Sure Klean® Fast Acting Stripper and Defacer Eraser® Graffiti Wipe.

Test Methods – Graffiti Removal

Chemical cleaners were evaluated using the following procedure:

1. Apply the graffiti removal product to a dry surface, soiled with graffiti.
2. Allow appropriate dwell time:

Sure Klean® Fast Acting Stripper	20 minutes
Defacer Eraser® Graffiti Wipe	5 minutes
3. Pressure rinse thoroughly until water runs clear.*
4. Allow the surface to dry thoroughly and visually examine to determine effectiveness.

***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 – Graffiti Removal

“Sedona Clay – Astra-Glaze-SW+®”					
Untreated Control	Red Paint	Black Marker	Green Marker	Red Marker	% Avg. Removal
Sure Klean® Fast Acting Stripper	100%*	100%*	100%*	100%*	100%*
Defacer Eraser® Graffiti Wipe	99%	100%	100%	100%	100%

***NOTE:** Sure Klean® Fast Acting Stripper removed a heavy amount of the glaze from the surface of the CMU. See Conclusions section on the following page.

Photographs – Graffiti Removal

“Sedona Clay – Astra-Glaze-SW+®” Glazed CMU; Before Graffiti Removal



“Sedona Clay – Astra-Glaze-SW+®” Glazed CMU; After Graffiti Removal



Conclusions – Graffiti Removal

Based upon laboratory evaluations, Sure Klean® Fast Acting Stripper removed a heavy amount of the “Astra-Glaze-SW+®” glaze from the surface of the submitted CMU, and is therefore not recommended for graffiti removal.

Defacer Eraser® Graffiti Wipe did not affect the surface of the submitted CMU and is recommended for graffiti removal.

Recommendations – Graffiti Removal

Recommendations for graffiti removal product for each type of glazed CMU submitted by Trenwyth Industries, Inc., Emigsville, PA are provided in the chart below. Recommendations are based the product that was most effective at removing the graffiti on all types submitted.

Sample Type	Graffiti Removal
“Sedona Clay – Astra-Glaze-SW+®” Glazed CMU	Defacer Eraser® Graffiti Wipe

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.

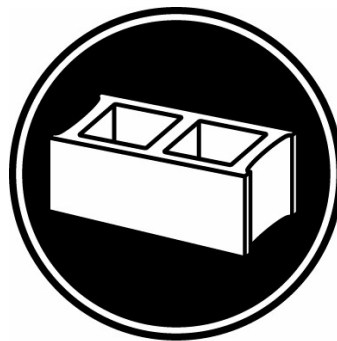


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PALLET TAG PROGRAM
Laboratory Report

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Project No. 0608-19 PTP

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August 2006