

Table of Contents

Executive Summary i

Submitted Information 1

Introduction 2

Purpose of Testing..... 2

Products Evaluated..... 3

New Construction Cleaning 3

 Description of Products Evaluated – New Construction Cleaning 3

 Test Method – New Construction Cleaning 3

 Test Results – New Construction Cleaning 4

 Test Results – Color Uniformity 5

 Photographs – New Construction Cleaning 6

 Photographs – Color Uniformity 8

 Conclusions – New Construction Cleaning 9

 Recommendations – New Construction Cleaning 9

Attachments

 Technical Services TECH Note RILEM Tube Test Procedures

 Product Data literature for all products evaluated

Submitted Information

For: Kenny Young – Trenwyth Industries
cc: Joe Talecki
 John Bourne

Subject: Trenwyth Industries
 Emigsville, PA

Date: April 17, 2006

Project: 0603-11 PTP

Samples Submitted: 8 types of integrally colored ground-face CMU's treated with Dry-Block®

Block	Name	Color	Integral Water Repellent	Size
Ground-face CMU	“Colonial Red – Trendstone®”	Red	Dry-Block®	8” x 16” x 1”
Ground-face CMU	“Colonial Red – Trendstone Plus®”	Red	Dry-Block®	8” x 16” x 1”
Ground-face CMU	“Ramapo White – Trendstone®”	White	Dry-Block®	8” x 16” x 1”
Ground-face CMU	“Ramapo White – Trendstone Plus®”	White	Dry-Block®	8” x 16” x 1”
Ground-face CMU	“Ravenstone – Trendstone®”	Dark Gray	Dry-Block®	8” x 16” x 1”
Ground-face CMU	“Ravenstone – Trendstone Plus®”	Dark Gray	Dry-Block®	8” x 16” x 1”
Ground-face CMU	“Rutherford – Trendstone®”	Dark Gray	Dry-Block®	8” x 16” x 1”
Ground-face CMU	“Rutherford – Trendstone Plus®”	Dark Gray	Dry-Block®	8” x 16” x 1”

Submitted by: Joe Talecki

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

Eight types of integrally colored ground-face CMU's treated with Dry-Block[®], 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.

New Construction Cleaning – Sure Klean[®] Burnished Custom Masonry Cleaner was evaluated for removal of laboratory applied mortar.

To simulate new construction soiling, all concrete masonry units (CMU's) 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 CMU and filled with a wet mixture of Type S 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 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 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.

Products Evaluated

New Construction Cleaning Products Evaluated

Sample	Product	Dilution
All Submitted Ground-face CMU's	Sure Klean® Burnished Custom Masonry Cleaner	1:2, 1:3

New Construction Cleaning

These cleaning trials were conducted to determine the optimal cleaning/cure time combination to most efficiently remove Type S mortar from the submitted CMU's while providing the best color uniformity when compared to the through-body color of the CMU's

Type S mortar was prepared in compliance with the manufacturer's instructions, applied to the CMU 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 CMU's.

Description of Products Evaluated – New Construction Cleaning

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.

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.
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)**

“Colonial Red – Trendstone®” Ground-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100%	100%	100%
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100%	100%	100%
“Colonial Red – Trendstone Plus®” Ground-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100%	100%	100%
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100%	100%	100%
“Ramapo White – Trendstone®” Ground-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100%	100%	100%
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100%	100%	100%
“Ramapo White – Trendstone Plus®” Ground-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100%	100%	100%
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100%	100%	100%
“Ravenstone – Trendstone®” Ground-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100%	100%	100%
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100%	100%	100%
“Ravenstone – Trendstone Plus®” Ground-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100%	100%	100%
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100%	100%	100%
“Rutherford – Trendstone®” Ground-face CMU				
Product	Dilution	3 day	7 day	14 day
Sure Klean® Burnished Custom Masonry Cleaner	1:2	100%	100%	100%
Sure Klean® Burnished Custom Masonry Cleaner	1:3	100%	100%	100%
“Rutherford – Trendstone Plus®” Ground-face CMU				
Product	Dilution	3 day	7 day	14 day
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

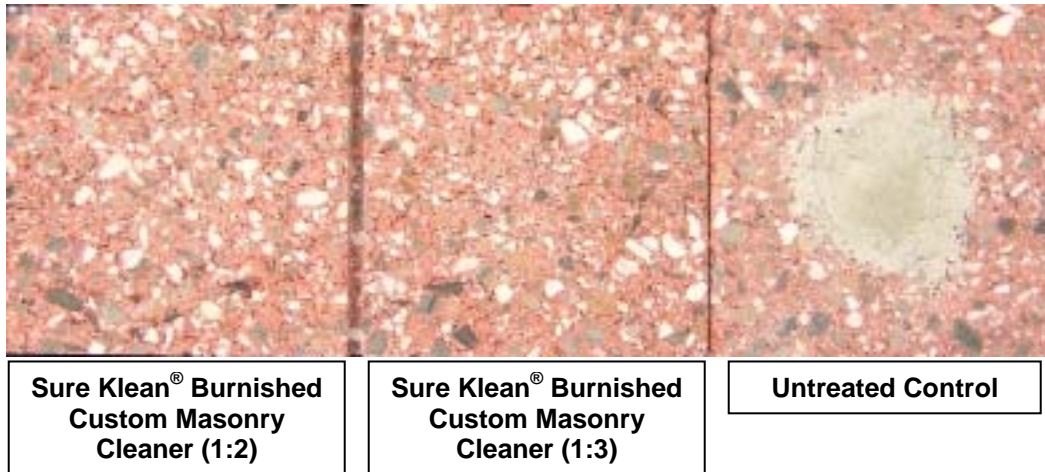
Substrate: Ground-face CMU		Pigment Color: “Colonial Red – Trendstone®”	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Burnished Custom Masonry Cleaner	1:2	4	4
Sure Klean® Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Ground-face CMU		Pigment Color: “Colonial Red – Trendstone Plus®”	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Burnished Custom Masonry Cleaner	1:2	4	4
Sure Klean® Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Ground-face CMU		Pigment Color: “Ramapo White – Trendstone®”	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Burnished Custom Masonry Cleaner	1:2	4	4
Sure Klean® Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Ground-face CMU		Pigment Color: “Ramapo White – Trendstone Plus®”	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Burnished Custom Masonry Cleaner	1:2	4	4
Sure Klean® Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Ground-face CMU		Pigment Color: “Ravenstone – Trendstone®”	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Burnished Custom Masonry Cleaner	1:2	4	4
Sure Klean® Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Ground-face CMU		Pigment Color: “Ravenstone – Trendstone Plus®”	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Burnished Custom Masonry Cleaner	1:2	4	4
Sure Klean® Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Ground-face CMU		Pigment Color: “Rutherford – Trendstone®”	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Burnished Custom Masonry Cleaner	1:2	4	4
Sure Klean® Burnished Custom Masonry Cleaner	1:3	4	4
Substrate: Ground-face CMU		Pigment Color: “Rutherford – Trendstone Plus®”	
Product	Dilution	Aggregate Exposure	Surface Pigment Alteration/Removal
Sure Klean® Burnished Custom Masonry Cleaner	1:2	4	4
Sure Klean® Burnished Custom Masonry Cleaner	1:3	4	4

Scale used for reporting results of both categories

0 – **Worst** match to through-body1 – **Poor** match to through-body2 – **Fair** match to through-body3 – **Good** match to through-body4 – **Best** match to through-body

Photographs – New Construction Cleaning

“Colonial Red – Trendstone®” Ground-face CMU; 3 Day Cleaning



“Colonial Red – Trendstone®” Ground-face CMU; 7 Day Cleaning



“Colonial Red – Trendstone®” Ground-face CMU; 14 Day Cleaning



Photographs – New Construction Cleaning

“Colonial Red – Trendstone Plus®” Ground-face CMU; 3 Day Cleaning



“Colonial Red – Trendstone Plus®” Ground-face CMU; 7 Day Cleaning

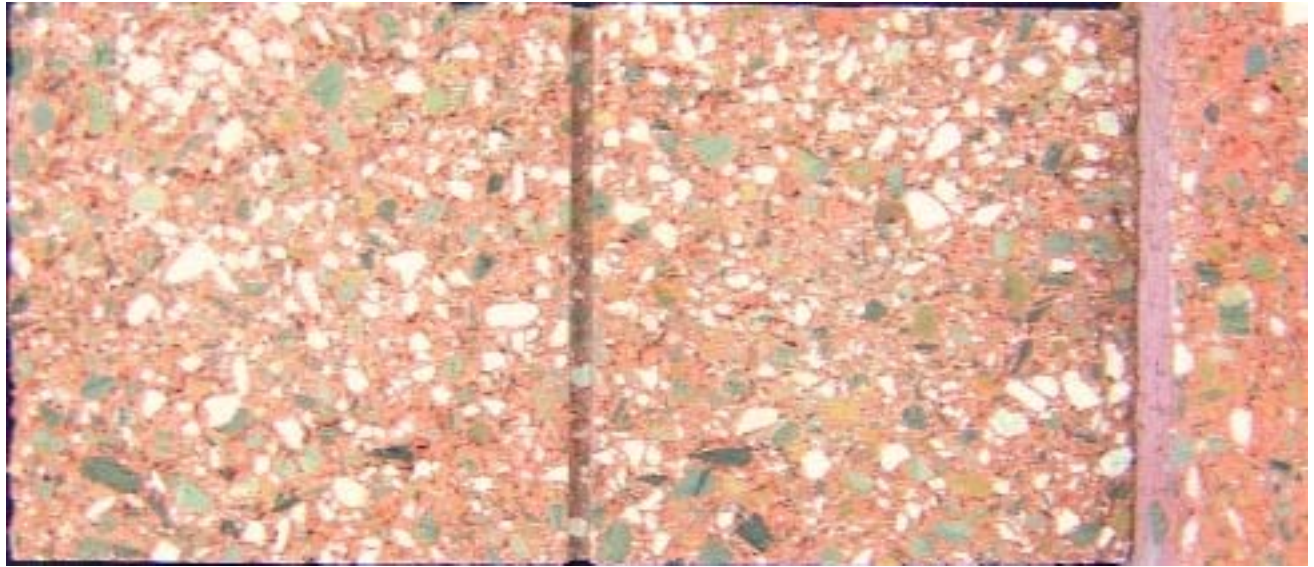


“Colonial Red – Trendstone Plus®” Ground-face CMU; 14 Day Cleaning



Photographs – Color Uniformity

“Colonial Red – Trendstone®” Ground-face; Through-body

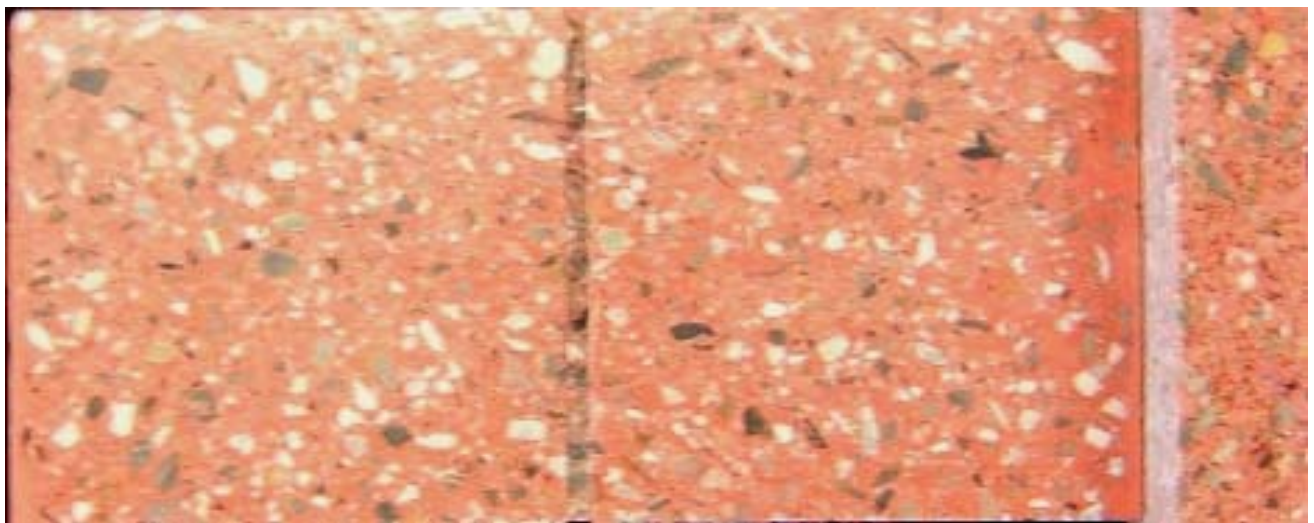


**Sure Klean® Burnished Custom
Masonry Cleaner (1:2)**

**Sure Klean® Burnished Custom
Masonry Cleaner (1:3)**

**Through-
body**

“Colonial Red – Trendstone Plus®” Ground-face; Through-body



**Sure Klean® Burnished Custom
Masonry Cleaner (1:2)**

**Sure Klean® Burnished Custom
Masonry Cleaner (1:3)**

**Through-
body**

Conclusions – New Construction Cleaning

Based on the test data, all of the submitted samples were efficiently cleaned with both dilutions of Sure Klean® Burnished Custom Masonry Cleaner. Both dilutions of Sure Klean® Burnished Custom Masonry Cleaner affected the submitted samples in a similar manner, removing very slight amounts of surface pigment.

Recommendations – New Construction Cleaning

Recommendations for cleaning for each type of CMU submitted by Trenwyth Industries, Emigsville, PA 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 CMU's.

Block	New Construction Cleaning (Type S mortar, 14 day cleaning)
All Submitted Ground-face CMU's	Sure Klean® Burnished Custom Masonry Cleaner (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. 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.

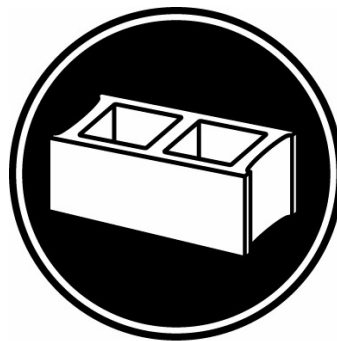


Christopher A. Moore
Project Testing Laboratory Technician
CAM



PALLET TAG PROGRAM
Laboratory Report

Trenwyth Industries
P.O. Box 438
Emigsville, PA 17318



Project No. 0603-11 PTP

Prepared For:
PROSOCO
SINCE 1939

Prepared By:
AMT Laboratories
April 2006