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#### ATTACHMENTS

Technical Services TECH Note RILEM Tube Test Procedures





FOR: Ted Sullivan cc: Joe Talecki John Bourne Stephen Dean

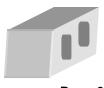
- SUBJECT: Anchor Concrete Products 975 Burnt Tavern Road Brick, NJ
- **DATE:** March 28, 2003
- **PROJECT:** 0302-10 PTP

SAMPLES SUBMITTED: Four types of rough-face and four types of ground-face CMU's all with Dry Blok

| <u>Block</u>    | <u>Color</u>     | <u>Size</u>        |
|-----------------|------------------|--------------------|
| Rough-face CMU  | "AW" (white)     |                    |
| Rough-face CMU  | "L-11" (tan)     |                    |
| Rough-face CMU  | "L-25" (red)     |                    |
| Rough-face CMU  | "L-26" (brown)   | 15.5" x 7.5" x .8" |
| Ground-face CMU | "M-33" (white)   | 15.5 X 7.5 X .0    |
| Ground-face CMU | "M-25" (red)     |                    |
| Ground-face CMU | "M-70" (brown)   |                    |
| Ground-face CMU | "AMF-2810" (tan) |                    |

Submitted by: Ted Sullivan Anchor Concrete Products Brick, NJ





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#### **PURPOSE OF TESTING:**

Four integrally colored rough-face and four integrally colored ground-face concrete blocks, 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<sup>®</sup> Custom Masonry Cleaner and Sure Klean<sup>®</sup> 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 Ash Grove<sup>®</sup> 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 Ash Grove<sup>®</sup> Type S mortar staining after 3 days, 7 days, and 14 days of curing.\*

**B. Color Uniformity Testing\*** - Sure Klean<sup>®</sup> Custom Masonry Cleaner and Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner was evaluated at various dilutions to determine the optimal concentration of cleaner that leaves the external surface looking most like the natural through-body color of the CMU. Color uniformity was evaluated by comparing aggregate exposure and surface pigment alternation/removal of each cleaned surface compared to the natural through-body color of the CMU.

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

<u>Surface Pigment Alteration/Removal\*</u> 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 4 – **Best** match to through-body
- 1 **Poor** match to through-body 2 – **Fair** match to through-body

#### \* NOTE: When cleaning integrally colored CMU.

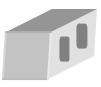
Integrally colored concrete masonry units (CMU's) frequently have high amounts of pigments concentrated on the surface of the cured concrete unit. Variation of surface pigment concentrations from one CMU to the next creates a blotchy appearance in the completed wall. Allowed to remain on the surface 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 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<sup>®</sup> Weather Seal Siloxane WB Concentrate was evaluated for its ability to provide water repellency to the submitted samples.

**D. Graffiti Control** – Defacer Eraser<sup>®</sup> Sacrificial Coating SC-1 was evaluated for its ability to control graffiti on the submitted samples. Sure Klean<sup>®</sup> Fast Acting Stripper, Defacer Eraser<sup>®</sup> Graffiti Release and Defacer Eraser<sup>®</sup> Graffiti Wipe were evaluated for their ability to remove graffiti from the submitted samples.





#### PRODUCTS EVALUATED FOR CLEANING AND COLOR UNIFORMITY

| Block Type    | Product   | Dilution      |
|---------------|---|---------------|
| All Submitted | Sure Klean <sup>®</sup> Custom Masonry Cleaner              | 1:2, 1:4, 1:6 |
| CMU's         | Sure Klean <sup>®</sup> Burnished Custom Masonry<br>Cleaner | 1:2, 1:3      |

#### WATER REPELLENT PRODUCTS EVALUATED

| Block Type          | Product  | Dilution  |
|---------------------|--|-----------|
| All Submitted CMU's | Sure Klean <sup>®</sup> Weather Seal Siloxane WB Concentrate | 1:9, 1:14 |

#### **GRAFFITI CONTROL PRODUCTS EVALUATED**

| Block Type          | Product  |  |
|---------------------|--|--|
| All submitted CMU's | Defacer Eraser <sup>®</sup> Sacrificial Coating SC-1 |  |

#### **GRAFFITI REMOVAL PRODUCTS EVALUATED**

| Block Type          | Product                                      |  |  |
|---------------------|--|--|--|
|                     | Sure Klean <sup>®</sup> Fast Acting Stripper |  |  |
| All submitted CMU's | Defacer Eraser <sup>®</sup> Graffiti Wipe    |  |  |
|                     | Defacer Eraser <sup>®</sup> Graffiti Release |  |  |





#### SECTION A - CLEANING INTEGRALLY COLORED CMU's

#### DESCRIPTION OF PRODUCTS EVALUATED

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

**Sure Klean<sup>®</sup> 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<sup>®</sup> Burnished Custom Masonry Cleaner** - A general-purpose, non-etching acidic cleaner that removes rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Burnished Custom Masonry Cleaner adds depth to colors, brightens white matrices and exposed aggregate. Liquid concentrate for dilution with 2-3 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.
- 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**

#### <u>% removal</u>

|                                  | "AW" Rough-face   | CMU   |       |        |
|----------------------------------|-------------------|-------|-------|--------|
| Product                          | Dilution          | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner           | 1:2               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:4               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:6               | 100%  | 100%  | 95%    |
| Burnished Custom Masonry Cleaner | 1:2               | 100%  | 100%  | 90%    |
| Burnished Custom Masonry Cleaner | 1:3               | 100%  | 100%  | 90%    |
| :                                | 'L-11" Rough-face | e CMU |       |        |
| Product                          | Dilution          | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner           | 1:2               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:4               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:6               | 98%   | 100%  | 98%    |
| Burnished Custom Masonry Cleaner | 1:2               | 100%  | 100%  | 100%   |
| Burnished Custom Masonry Cleaner | 1:3               | 100%  | 100%  | 100%   |
|                                  | 'L-25" Rough-face | e CMU |       |        |
| Product                          | Dilution          | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner           | 1:2               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:4               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:6               | 100%  | 100%  | 98%    |
| Burnished Custom Masonry Cleaner | 1:2               | 90%   | 90%   | 90%    |
| Burnished Custom Masonry Cleaner | 1:3               | 90%   | 90%   | 90%    |
| ,<br>,                           | 'L-26" Rough-face | e CMU |       |        |
| Product                          | Dilution          | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner           | 1:2               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:4               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:6               | 100%  | 98%   | 98%    |
| Burnished Custom Masonry Cleaner | 1:2               | 90%   | 90%   | 90%    |
| Burnished Custom Masonry Cleaner | 1:3               | 90%   | 90%   | 90%    |
|                                  | M-33" Ground-fac  | e CMU |       |        |
| Product                          | Dilution          | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner           | 1:2               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:4               | 100%  | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:6               | 100%  | 100%  | 100%   |
| Burnished Custom Masonry Cleaner | 1:2               | 100%  | 100%  | 100%   |
| Burnished Custom Masonry Cleaner | 1:3               | 100%  | 100%  | 100%   |





#### **TEST RESULTS – Cleaning (continued)**

#### <u>% removal</u>

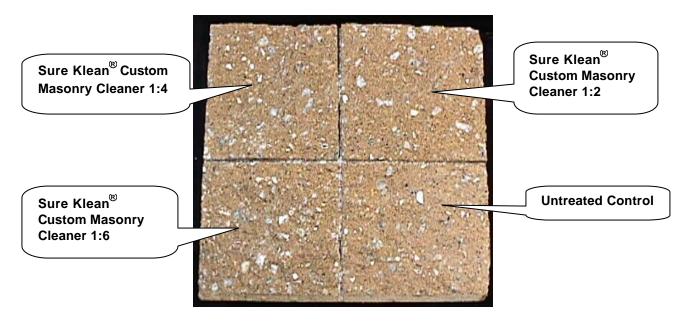
| "                                | M-25" Ground-fac | e CMU    |       |        |
|----------------------------------|------------------|----------|-------|--------|
| Product                          | Dilution         | 3 day    | 7 day | 14 day |
| Custom Masonry Cleaner           | 1:2              | 100%     | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:4              | 100%     | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:6              | 100%     | 100%  | 100%   |
| Burnished Custom Masonry Cleaner | 1:2              | 100%     | 100%  | 100%   |
| Burnished Custom Masonry Cleaner | 1:3              | 100%     | 100%  | 100%   |
| "]                               | M-70" Ground-fac | e CMU    |       |        |
| Product                          | Dilution         | 3 day    | 7 day | 14 day |
| Custom Masonry Cleaner           | 1:2              | 100%     | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:4              | 100%     | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:6              | 100%     | 100%  | 100%   |
| Burnished Custom Masonry Cleaner | 1:2              | 100%     | 100%  | 90%    |
| Burnished Custom Masonry Cleaner | 1:3              | 100%     | 100%  | 90%    |
| "AN                              | IF-2810" Ground- | face CMU |       |        |
| Product                          | Dilution         | 3 day    | 7 day | 14 day |
| Custom Masonry Cleaner           | 1:2              | 100%     | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:4              | 100%     | 100%  | 100%   |
| Custom Masonry Cleaner           | 1:6              | 100%     | 100%  | 100%   |
| Burnished Custom Masonry Cleaner | 1:2              | 100%     | 100%  | 90%    |
| Burnished Custom Masonry Cleaner | 1:3              | 100%     | 100%  | 90%    |





#### **PHOTOGRAPHS- Cleaning**

"L-11" 3 Day Cleaning



"L-11" 3 Day Cleaning

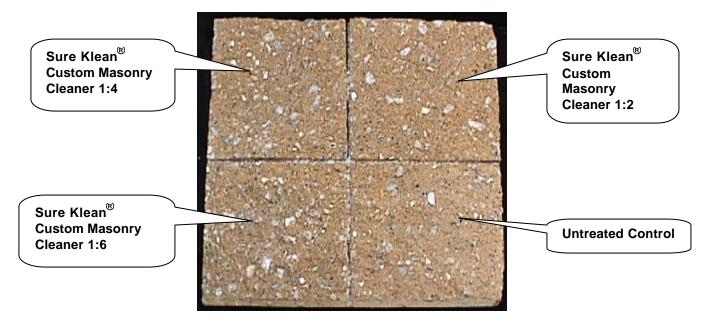






#### **PHOTOGRAPHS-** Continued

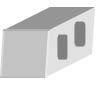
"L-11" 7 Day Cleaning



"L-11" 7 Day Cleaning



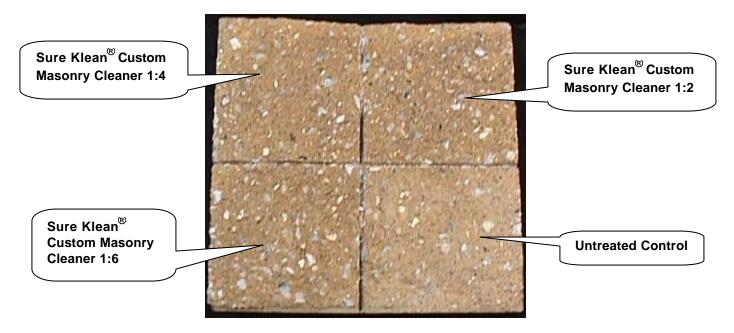




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#### **PHOTOGRAPHS-** Continued

"L-11" 14 Day Cleaning



"L-11" 14 Day Cleaning







#### **CONCLUSIONS - Cleaning**

Based on the test data, all of the submitted block samples were efficiently cleaned with a dilution of the selected PROSOCO Inc.'s cleaning product. Use higher concentrations and surface agitation to maximize aggregate exposure. Use low concentration and surface agitation to minimize aggregate exposure.

All dilutions of Sure Klean<sup>®</sup> Custom Masonry Cleaner and Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner tested affected the substrate in a similar manner, removing slight to heavy concentrations of pigmented matrix from the split-face blocks, exposing small and large aggregate, and enhancing the natural appearance of the integrally colored concrete masonry unit.

#### **RECOMMENDED PRODUCTS AND DILUTIONS - CLEANING**

Recommendations for cleaning for each type of CMU submitted by Anchor Concrete Products, Brick, NJ are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar.

| Block                              | New Construction Cleaning<br>(Type S mortar, 14 day) |  |  |
|------------------------------------|--|--|--|
| All Submitted<br>Rough-face CMU's  | Sure Klean <sup>®</sup> Custom Masonry Cleaner (1:4) |  |  |
| Block                              | New Construction Cleaning<br>(Type S mortar, 14 day) |  |  |
| All Submitted<br>Ground-face CMU's | Sure Klean <sup>®</sup> Custom Masonry Cleaner (1:6) |  |  |

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. Pressure rinsing equipment providing at least 400 psi at 4-6 gpm delivered though a 15-40 degree fan spray often produces best cleaning results.

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.





### SECTION B - COLOR UNIFORMITY:

#### **DESCRIPTION OF PRODUCTS EVALUATED – Color Uniformity:**

**Sure Klean<sup>®</sup> 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<sup>®</sup> Burnished Custom Masonry Cleaner** - A general-purpose, non-etching acidic cleaner that removes rust, mud, oil, atmospheric dirt, mortar smears and other stains without altering the surface texture. Burnished Custom Masonry Cleaner adds depth to colors, brightens white matrices and exposed aggregate. Liquid concentrate for dilution with 2-3 parts water. Apply by brush or low-pressure spray.

#### **TEST METHOD – Color Uniformity 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.
- 4. Reapply the products 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 was conducted at approximately 1300 psi with a warm water flow rate of 1.9 gallons per minute.





#### **TEST RESULTS – Color Uniformity**

| Substrate: Rough-face CMU        | Pigment Col | or: "AW"           |                                       |
|----------------------------------|-------------|--------------------|---------------------------------------|
| Product                          | Dilution    | Aggregate Exposure | Surface Pigment<br>Alteration/Removal |
| Custom Masonry Cleaner           | 1:2         | 3                  | 2                                     |
| Custom Masonry Cleaner           | 1:4         | 3                  | 3                                     |
| Custom Masonry Cleaner           | 1:6         | 2                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:2         | 2                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:3         | 2                  | 3                                     |
| Substrate: Rough-face CMU        | Pigment Col | or: "L-11"         |                                       |
| Product                          | Dilution    | Aggregate Exposure | Surface Pigment<br>Alteration/Removal |
| Custom Masonry Cleaner           | 1:2         | 4                  | 2                                     |
| Custom Masonry Cleaner           | 1:4         | 3                  | 3                                     |
| Custom Masonry Cleaner           | 1:6         | 3                  | 4                                     |
| Burnished Custom Masonry Cleaner | 1:2         | 2                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:3         | 2                  | 3                                     |
| Substrate: Rough-face CMU        | Pigment Col | or: "L-25"         |                                       |
| Product                          | Dilution    | Aggregate Exposure | Surface Pigment<br>Alteration/Removal |
| Custom Masonry Cleaner           | 1:2         | 3                  | 2                                     |
| Custom Masonry Cleaner           | 1:4         | 3                  | 2                                     |
| Custom Masonry Cleaner           | 1:6         | 2                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:2         | 3                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:3         | 2                  | 3                                     |
| Substrate: Rough-face CMU        | Pigment Col | <b>or:</b> "L-26"  |                                       |
| Product                          | Dilution    | Aggregate Exposure | Surface Pigment<br>Alteration/Removal |
| Custom Masonry Cleaner           | 1:2         | 3                  | 2                                     |
| Custom Masonry Cleaner           | 1:4         | 2                  | 3                                     |
| Custom Masonry Cleaner           | 1:6         | 3                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:2         | 2                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:3         | 2                  | 3                                     |

Scale used for reporting results of both categories

0 – **Worst** match to through-body

- 1 **Poor** match to through-body
- 3 **Good** match to through-body
- 2 Fair match to through-body
- 4 Best match to through-body



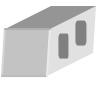


| Substrate: Ground-face CMU       | Pigment Col | <b>or:</b> "M-33"  |                                       |
|----------------------------------|-------------|--------------------|---------------------------------------|
| Product                          | Dilution    | Aggregate Exposure | Surface Pigment<br>Alteration/Removal |
| Custom Masonry Cleaner           | 1:2         | 4                  | 4                                     |
| Custom Masonry Cleaner           | 1:4         | 4                  | 4                                     |
| Custom Masonry Cleaner           | 1:6         | 4                  | 4                                     |
| Burnished Custom Masonry Cleaner | 1:2         | 4                  | 4                                     |
| Burnished Custom Masonry Cleaner | 1:3         | 4                  | 4                                     |
| Substrate: Ground-face CMU       | Pigment Col | or: "M-25"         |                                       |
| Product                          | Dilution    | Aggregate Exposure | Surface Pigment<br>Alteration/Removal |
| Custom Masonry Cleaner           | 1:2         | 4                  | 4                                     |
| Custom Masonry Cleaner           | 1:4         | 4                  | 4                                     |
| Custom Masonry Cleaner           | 1:6         | 4                  | 4                                     |
| Burnished Custom Masonry Cleaner | 1:2         | 4                  | 4                                     |
| Burnished Custom Masonry Cleaner | 1:3         | 4                  | 4                                     |
| Substrate: Ground-face CMU       | Pigment Col | or: "M-70"         |                                       |
| Product                          | Dilution    | Aggregate Exposure | Surface Pigment<br>Alteration/Removal |
| Custom Masonry Cleaner           | 1:2         | 3                  | 3                                     |
| Custom Masonry Cleaner           | 1:4         | 3                  | 3                                     |
| Custom Masonry Cleaner           | 1:6         | 4                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:2         | 3                  | 3                                     |
| Burnished Custom Masonry Cleaner | 1:3         | 3                  | 3                                     |
| Substrate: Ground-face CMU       | Pigment Col | or: "AMF-2810"     |                                       |
| Product                          | Dilution    | Aggregate Exposure | Surface Pigment<br>Alteration/Removal |
| Custom Masonry Cleaner           | 1:2         | 4                  | 4                                     |
| Custom Masonry Cleaner           | 1:4         | 4                  | 4                                     |
| Custom Masonry Cleaner           | 1:6         | 4                  | 4                                     |
| Burnished Custom Masonry Cleaner | 1:2         | 4                  | 4                                     |
| Burnished Custom Masonry Cleaner | 1:3         | 4                  | 4                                     |

Scale used for reporting results of both categories

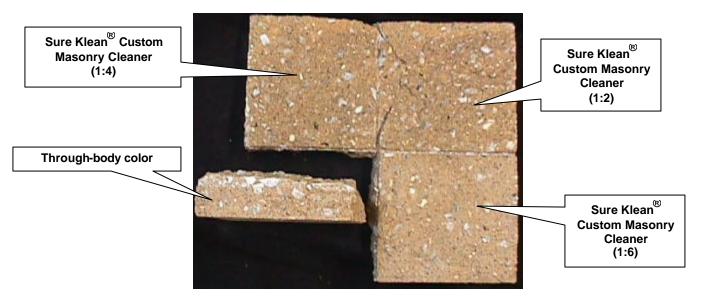
- 0 **Worst** match to through-body 1 **Poor** match to through-body
- 2 Fair match to through-body
- 3 Good match to through-body
  - 4 Best match to through-body





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#### **PHOTOGRAPHS – Color Uniformity**



#### "L-11" Rough-face CMU after 14 day cleaning





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#### CONCLUSIONS: COLOR UNIFORMITY:

All dilutions of Sure Klean<sup>®</sup> Custom Masonry Cleaner and Sure Klean<sup>®</sup> Burnished Custom Masonry Cleaner tested affected the substrate in a similar manner. Higher concentrations of cleaner removed moderate to heavy concentrations of pigmented matrix, exposing small and large aggregate. Lower concentrations of cleaner removed slight to moderate concentrations of pigmented matrix, exposing small and large aggregate. All dilutions enhanced the natural appearance of the integrally colored CMU.

#### **RECOMMENDATIONS - COLOR UNIFORMITY**

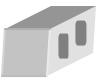
Recommendations for color uniformity for each type of CMU submitted by Anchor Concrete Products, Brick, NJ are provided in the chart below. Recommendations are based on the optimum dilution that provides the best color uniformity.

| Block                              | Color Uniformity  |
|------------------------------------|---|
| "AW"                               | Sure Klean <sup>®</sup> Custom Masonry Cleaner (1:4)  |
| "L-11"                             | Sure Klean <sup>®</sup> Custom Masonry Cleaner (1:6)  |
| "L-25"                             | Sure Klean <sup>®</sup> Burnished Custom Masonry Cleaner (1:2)<br>or Sure Klean <sup>®</sup> Custom Masonry Cleaner (1:6) |
| "L-26"                             | Sure Klean <sup>®</sup> Custom Masonry Cleaner (1:6)  |
| All Submitted<br>Ground-face CMU's | Sure Klean <sup>®</sup> Custom Masonry Cleaner (1:6)  |

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. Pressure rinsing equipment providing at least 400 psi at 4-6 gpm delivered though a 15-40 degree fan spray often produces best cleaning results.

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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#### 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<sup>®</sup> 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 alkoxysiloxanes mixes easily with water to produce a penetrating water repellent ideal for application to dense or porous masonry surfaces.

#### **SAMPLE PREPARATION - Protective Water Repellents:**

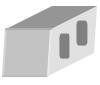
The submitted blocks were scored, allowed to dry, and to reabsorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of a wet-on-wet brush application. All treatments were allowed to cure at least 3 days prior to testing.

#### **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. 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  |
|--------------------------------|----------|
| "AW"                           |          |
| Untreated Control              | < 52 mph |
| Siloxane WB Concentrate (1:9)  | 60 mph   |
| Siloxane WB Concentrate (1:14) | 60 mph   |
| "L-11"                         |          |
| Untreated Control              | 49 mph   |
| Siloxane WB Concentrate (1:9)  | 60 mph   |
| Siloxane WB Concentrate (1:14) | 58 mph   |
| "L-25"                         |          |
| Untreated Control              | 52 mph   |
| Siloxane WB Concentrate (1:9)  | 60 mph   |
| Siloxane WB Concentrate (1:14) | 60 mph   |
| "L-26"                         |          |
| Untreated Control              | 51 mph   |
| Siloxane WB Concentrate (1:9)  | 60 mph   |
| Siloxane WB Concentrate (1:14) | 60 mph   |
| "M-33"                         |          |
| Untreated Control              | 48 mph   |
| Siloxane WB Concentrate (1:9)  | 58 mph   |
| Siloxane WB Concentrate (1:14) | 59 mph   |
| "M-25"                         |          |
| Untreated Control              | 48 mph   |
| Siloxane WB Concentrate (1:9)  | 60 mph   |
| Siloxane WB Concentrate (1:14) | 60 mph   |





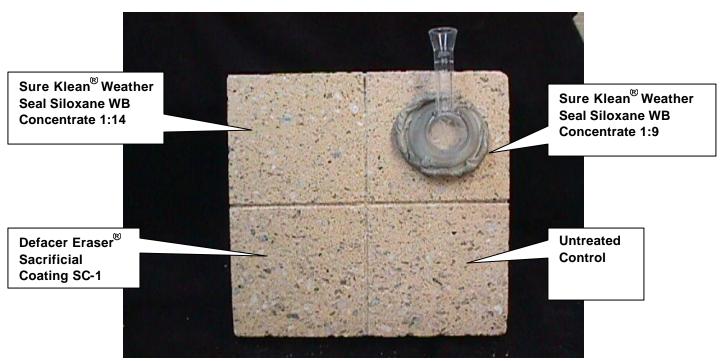
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| "M-70"                         |         |  |  |  |
|--------------------------------|---------|--|--|--|
| Untreated Control              | 50 mph  |  |  |  |
| Siloxane WB Concentrate (1:9)  | 60 mph  |  |  |  |
| Siloxane WB Concentrate (1:14) | 60 mph  |  |  |  |
| "AMF-2810"                     |         |  |  |  |
| Untreated Control              | <40 mph |  |  |  |
| Siloxane WB Concentrate (1:9)  | 60 mph  |  |  |  |
|                                | -       |  |  |  |



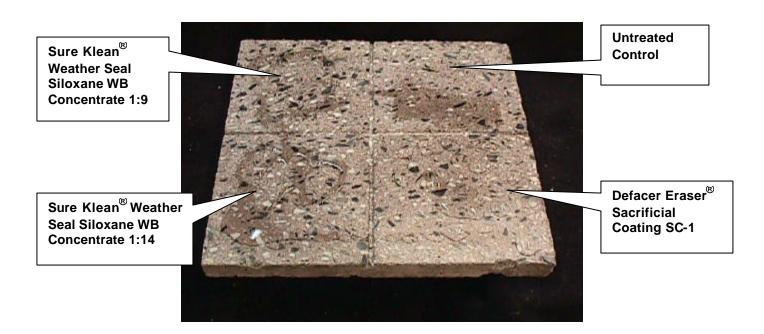


#### **PHOTOGRAPHS – Protective Water Repellents**



#### "AMF 2810" Ground-face CMU during RILEM testing

#### "M-70" Surface Beading







#### **CONCLUSIONS - Protective Water Repellents**

Based upon laboratory evaluations, Sure Klean<sup>®</sup> Weather Seal Siloxane WB Concentrate in both dilutions provided above average water repellency to all submitted samples.

#### **RECOMMENDATIONS - PROTECTIVE WATER REPELLENTS**

Recommendations for water repellency treatment for each type of CMU submitted by Anchor Concrete Products, Brick, NJ 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.

| Block Type          | Water Repellents   |  |
|---------------------|--|--|
| All submitted CMU's | Sure Klean <sup>®</sup> Weather Seal Siloxane WB Concentrate (1:9), (1:14) |  |

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.





### PROSOCO, Inc.

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#### SECTION D - GRAFFITI CONTROL

#### DESCRIPTION OF PRODUCTS EVALUATED

These trials were conducted to determine the optimal graffiti control treatment.

#### **Graffiti Control Treatments**

Defacer Eraser<sup>®</sup> Sacrificial Coating SC-1- A clear, water-based sacrificial coating for control of graffiti on most building surfaces. SC-1 acts as a graffiti barrier by preventing spray paints, crayons and ink from penetrating and spraving the underlying surface. Graffiti is removed from protected surfaces by high-pressure hot water only. The coating must then be reapplied to restore the graffiti barrier.

#### Products Evaluated for Graffiti Removal

Defacer Eraser<sup>®</sup> 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.

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

Sure Klean<sup>®</sup> 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 Control

This evaluation compares the effectiveness in preventing staining of enamel spray paint and permanent markers.

Sections of the concrete samples were treated with one coat of Defacer Eraser<sup>®</sup> Sacrificial Coating SC-1, in accordance with PROSOCO, Inc.'s Product Guide application recommendations and then allowed to cure for at least one day. At the end of the one-day cure period, a visual adverse effects evaluation was made and then the graffiti agents were applied to the substrates.

Spray paint and markers were applied as graffiti agents to all treated surfaces no sooner than one day following application of Defacer Eraser<sup>®</sup> Sacrificial Coating SC-1. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents, using either Defacer Eraser<sup>®</sup> Graffiti Wipe, Defacer Eraser<sup>®</sup> Graffiti Release or Sure Klean<sup>®</sup> Fast Acting Stripper.

#### **TEST METHOD – Graffiti Control**

Chemical cleaners were evaluated using the following procedure:

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

| Graffiti Wipe        | 5 minutes  |
|----------------------|------------|
| Graffiti Release     | 15 minutes |
| Fast Acting Stripper | 20 minutes |

3. Pressure rinse thoroughly until water runs clear. \*

4. Allow the surface to dry thoroughly and visually examine to determine effectiveness.

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





#### **TEST RESULTS – Graffiti Control**

|                          |              | "AW"            |                 |               |                   |
|--------------------------|--------------|-----------------|-----------------|---------------|-------------------|
| Untreated Control        | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 50%          | 55%             | 60%             | 55%           | 55%               |
| Graffiti Wipe            | 60%          | 55%             | 55%             | 55%           | 56%               |
| Graffiti Release         | 50%          | 55%             | 55%             | 55%           | 54%               |
| Sacrificial Coating SC-1 | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 80%          | 70%             | 70%             | 70%           | 73%               |
| Graffiti Wipe            | 90%          | 70%             | 70%             | 75%           | 76%               |
| Graffiti Release         | 70%          | 70%             | 70%             | 70%           | 70%               |
|                          |              | "L-11"          |                 |               |                   |
| Untreated Control        | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 70%          | 60%             | 60%             | 60%           | 63%               |
| Graffiti Wipe            | 65           | 60%             | 55%             | 60%           | 60%               |
| Graffiti Release         | 70%          | 60%             | 60%             | 60%           | 63%               |
| Sacrificial Coating SC-1 | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 90%          | 80%             | 80%             | 90%           | 85%               |
| Graffiti Wipe            | 95%          | 75%             | 75%             | 80%           | 81%               |
| Graffiti Release         | 85%          | 80%             | 80%             | 80%           | 82%               |
|                          | -            | "L-25"          |                 |               |                   |
| Untreated Control        | Red          | Black           | Green           | Red           | % Avg.            |
|                          | Paint        | Marker          | Marker          | Marker        | Removal           |
| Fast Acting Stripper     | 70%          | 70%             | 70%             | 60%           | 68%               |
| Graffiti Wipe            | 70%          | 60%             | 60%             | 65%           | 64%               |
| Graffiti Release         | 60%          | 60%             | 60%             | 60%           | 60%               |
| Sacrificial Coating SC-1 | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 95%          | 100%            | 90%             | 95%           | 95%               |
| Graffiti Wipe            | 95%          | 100%            | 90%             | 90%           | 94%               |
| Graffiti Release         | 80%          | 95%             | 85%             | 95%           | 89%               |
|                          | 1            | "L-26"          |                 |               |                   |
| Untreated Control        | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 60%          | 70%             | 65%             | 60%           | 64%               |
| Graffiti Wipe            | 60%          | 65%             | 65%             | 70%           | 65%               |
| Graffiti Release         | 60%          | 65%             | 60%             | 60%           | 61%               |
| Sacrificial Coating SC-1 | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 90%          | 95%             | 85%             | 80%           | 88%               |
| Graffiti Wipe            | 90%          | 90%             | 85%             | 85%           | 88%               |
| Graffiti Release         | 90%          | 90%             | 85%             | 80%           | 86%               |





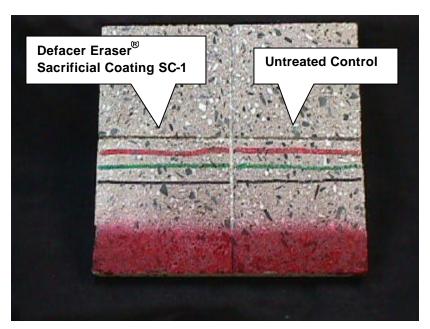
#### **TEST RESULTS – Graffiti Control Continued**

|                          | "            | 'M-33"          |                 |               |                   |
|--------------------------|--------------|-----------------|-----------------|---------------|-------------------|
| Untreated Control        | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 50%          | 65%             | 60%             | 60%           | 59%               |
| Graffiti Wipe            | 50%          | 55%             | 60%             | 65%           | 58%               |
| Graffiti Release         | 45%          | 55%             | 60%             | 55%           | 54%               |
| Sacrificial Coating SC-1 | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 80%          | 85%             | 80%             | 80%           | 81%               |
| Graffiti Wipe            | 90%          | 85%             | 80%             | 80%           | 84%               |
| Graffiti Release         | 90%          | 85%             | 80%             | 80%           | 84%               |
|                          |              | ' <b>M-25</b> " | 0078            | 0078          | 04 /0             |
|                          |              |                 | 0               | Ded           | 0/ 4              |
| Untreated Control        | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 65%          | 65%             | 70%             | 70%           | 68%               |
| Graffiti Wipe            | 65%          | 70%             | 65%             | 70%           | 68%               |
| Graffiti Release         | 55%          | 70%             | 65%             | 65%           | 64%               |
| Sacrificial Coating SC-1 | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 95%          | 95%             | 95%             | 90%           | 94%               |
| Graffiti Wipe            | 90%          | 90%             | 95%             | 90%           | 91%               |
| Graffiti Release         | 85%          | 90%             | 85%             | 90%           | 88%               |
|                          | •            | 'M-70"          |                 |               |                   |
|                          | Red          | Black           | Green           | Red           | % Avg.            |
| Untreated Control        | Paint        | Marker          | Marker          | Marker        | Removal           |
| Fast Acting Stripper     | 70%          | 70%             | 70%             | 70%           | 70%               |
| Graffiti Wipe            | 75%          | 70%             | 70%             | 70%           | 71%               |
| Graffiti Release         | 60%          | 65%             | 70%             | 70%           | 66%               |
| Sacrificial Coating SC-1 | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 95%          | 90%             | 80%             | 85%           | 88%               |
| Graffiti Wipe            | 95%          | 90%             | 80%             | 80%           | 86%               |
| Graffiti Release         | 85%          | 90%             | 80%             | 80%           | 84%               |
|                          |              | MF-2810"        |                 |               |                   |
|                          | Red          | Black           | Green           | Red           | % Avg.            |
| Untreated Control        | Paint        | Marker          | Marker          | Marker        | Removal           |
| Fast Acting Stripper     | 70%          | 70%             | 70%             | 70%           | 70%               |
| Graffiti Wipe            | 70%          | 70%             | 70%             | 70%           | 70%               |
| Graffiti Release         | 60%          | 70%             | 70%             | 70%           | 68%               |
| Sacrificial Coating SC-1 | Red<br>Paint | Black<br>Marker | Green<br>Marker | Red<br>Marker | % Avg.<br>Removal |
| Fast Acting Stripper     | 85%          | 85%             | 85%             | 90%           | 86%               |
| Graffiti Wipe            | 90%          | 85%             | 85%             | 80%           | 85%               |
| Graffiti Release         | 85%          | 85%             | 80%             | 80%           | 83%               |



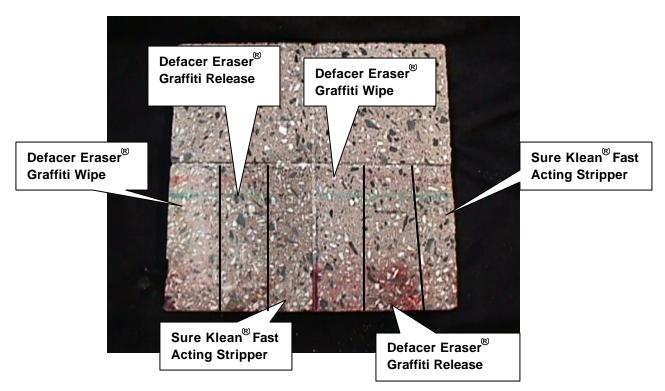


#### PHOTOGRAPHS – Graffiti Control



#### "AW" Graffiti Applied

"AW" After Graffiti Removal







#### **CONCLUSIONS – Graffiti Control**

Based upon laboratory evaluations, graffiti removal was improved dramatically when the submitted samples were treated with Defacer Eraser<sup>®</sup> Sacrificial Coating SC-1 prior to graffiti application.

#### **RECOMMENDATIONS – GRAFFITI CONTROL**

Recommendations for graffiti control treatment for each type of CMU submitted by Anchor Concrete Products, Brick, NJ, are provided in the chart below. Recommendations are based on the treatment that proved most effective for providing graffiti repellency and the product that was most effective at removing the graffiti on all types submitted.

| Block Type            | Graffiti Repellents                                  | Graffiti Removers   |
|-----------------------|--|---|
| All Submitted Samples | Defacer Eraser <sup>®</sup> Sacrificial Coating SC-1 | Sure Klean <sup>®</sup> Fast Acting Stripper,<br>Defacer Eraser <sup>®</sup> Graffiti Wipe,<br>Or<br>Defacer Eraser <sup>®</sup> Graffiti Release |

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.

For the most severe graffiti cases Sure Klean<sup>®</sup> Fast Acting Stripper is recommended for job-site testing. For mild graffiti cases, Defacer Eraser<sup>®</sup> Graffiti Wipe and Defacer Eraser<sup>®</sup> Graffiti Release are recommended for job-site testing. See product literature for additional application and product information.

flat & alm

Nathan R. Colaner Technical Analyst

NRC/



Laboratory Report

# **Pallet Tag Program Evaluation**

# Anchor Concrete Products Brick, NJ

Project No. 0302-10 PTP

**Prepared For:** 

Ted Sullivan

Anchor Concrete Products 975 Burnt Tavern Road Brick, NJ

Prepared By:



PROSOCO, Inc. March 2003