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ATTACHMENTS

Technical Services TECH Note RILEM Tube Test Procedures

Product Data literature for all products evaluated





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FOR: Denise Hudson cc: Tim Trent

Al Stickler Perry Surber John Bourne

Stephen Dean

SUBJECT: Lima Cement Products

Lima, OH

DATE: October 14, 2002

PROJECT: 00209-10 PTP

SAMPLES SUBMITTED: Six colors of split-face CMU's all with W.R. Grace Dry Blok.

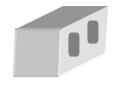
| <u>Block</u> | <u>Color</u> | <u>Size</u> |
|----------------|-----------------------------|---------------|
| Split-face CMU | "#102 Grey" | 16" x 8" x 2" |
| Split-face CMU | "#403 Light Buff" | 16" x 8" x 2" |
| Split-face CMU | "#101 Natural" (gray) | 16" x 8" x 2" |
| Split-face CMU | "#210 Red" | 16" x 8" x 2" |
| Split-face CMU | "#215 Light Sierra" (cream) | 16" x 8" x 2" |
| Split-face CMU | "#202 Charcoal" | 16" x 8" x 2" |

Submitted by: Denise Hudson

Lima Cement Products

Lima, OH





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PURPOSE OF TESTING:

Six integrally colored split-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[®] 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[®] 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[®] Type S mortar staining after 3 days, 7 days, and 14 days of curing.*

B. Color Uniformity Testing* - Sure Klean[®] Custom Masonry Cleaner was evaluated at various dilutions to determine the optimal concentration of cleaner that leaves the external surface looking most like the ratural 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
- 1 **Poor** match to through-body
- 4 **Best** 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[®] Custom Masonry Sealer and Sure Klean[®] Weather Seal Siloxane WB Concentrate were evaluated for their ability to provide water repellency to the submitted samples.
- **D. Graffiti Control** Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control was evaluated for its ability to control graffiti on the submitted samples. Sure Klean[®] Fast Acting Stripper and Defacer Eraser[®] Graffiti Wipe were evaluated for their ability to remove graffiti from the submitted samples.



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PRODUCTS EVALUATED FOR CLEANING AND COLOR UNIFORMITY

| Block Type | Product | Dilution |
|-----------------------------------|--|---------------|
| All Submitted Split-face CMU's | Sure Klean [®] Custom Masonry Cleaner | 1:2, 1:4, 1:6 |

WATER REPELLENT PRODUCTS EVALUATED

| Block Type | Product | Dilution |
|------------------|--|-------------|
| All Submitted | Sure Klean [®] Custom Masonry Sealer | Concentrate |
| Split-face CMU's | Sure Klean [®] Weather Seal Siloxane WB Concentrate | 1:9, 1:14 |

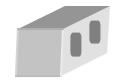
GRAFFITI CONTROL PRODUCTS EVALUATED

| Block Type | Product | |
|---------------------|---|--|
| All submitted CMU's | Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control | |

GRAFFITI REMOVAL PRODUCTS EVALUATED

| Block Type | Product | |
|---------------------|--|--|
| All submitted CMU's | Sure Klean [®] Fast Acting Stripper | |
| 7 111 0000111111100 | Defacer Eraser [®] Graffiti Wipe | |





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SECTION A - CLEANING INTEGRALLY COLORED CMU's

DESCRIPTION OF PRODUCTS EVALUATED

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

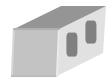
Sure Klean[®] **Custom Masonry Cleaner** – A general purpose, concentrated acidic cleaner for most custom masonry and colored concrete. Removes concrete splashes, excess mortar, mud, heavy efflorescence and surface soiling, leaving the masonry clean and uniform with no acid burning or streaking. Liquid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

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.





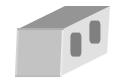
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TEST RESULTS - Cleaning

% removal

| | "Grey" Split-face | CMU | | |
|------------------------|------------------------|---------|-------|--------|
| Product | Dilution | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner | 1:2 | 100% | 99% | 99% |
| Custom Masonry Cleaner | 1:4 | 100% | 99% | 98% |
| Custom Masonry Cleaner | 1:6 | 100% | 99% | 98% |
| | "Light Buff" Split-fa | ce 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% |
| | "Natural" Split-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% |
| | "Red" Split-face | CMU | | |
| Product | Dilution | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner | 1:2 | 100% | 98% | 99% |
| Custom Masonry Cleaner | 1:4 | 100% | 98% | 95% |
| Custom Masonry Cleaner | 1:6 | 99% | 98% | 95% |
| | "Light Sierra" Split-f | ace CMU | | |
| Product | Dilution | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner | 1:2 | 100% | 100% | 100% |
| Custom Masonry Cleaner | 1:4 | 100% | 100% | 99% |
| Custom Masonry Cleaner | 1:6 | 100% | 100% | 95% |
| _ | "Charcoal" Split-fa | ce CMU | | |
| Product | Dilution | 3 day | 7 day | 14 day |
| Custom Masonry Cleaner | 1:2 | 100% | 99% | 99% |
| Custom Masonry Cleaner | 1:4 | 100% | 99% | 99% |
| Custom Masonry Cleaner | 1:6 | 100% | 99% | 99% |





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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. It should be noted that on the "Grey", "Red", and "Light Sierra" blocks, an excessive amount of mortar was applied and required a higher cleaning dilution to remove the mortar.

All dilutions of Sure Klean[®] 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 Lima Cement Products, Lima, OH are provided in the chart below. Recommendations are based on the optimum dilution for complete removal of mortar.

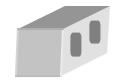
| Block | Color | New Construction Cleaning (Type S mortar, 14 day) |
|------------------|----------------|--|
| | "Grey" | Sure Klean [®] Custom Masonry Cleaner (1:2) |
| | "Light Buff" | Sure Klean [®] Custom Masonry Cleaner (1:6) |
| All Submitted | "Natural" | Sure Klean [®] Custom Masonry Cleaner (1:6) |
| Split-face CMU's | "Red" | Sure Klean [®] Custom Masonry Cleaner (1:2) |
| | "Light Sierra" | Sure Klean [®] Custom Masonry Cleaner (1:2) |
| | "Charcoal" | Sure Klean [®] Custom Masonry Cleaner (1:6) |

It should be noted that on the "Grey", "Red", and "Light Sierra" blocks, an excessive amount of mortar was applied and required a higher cleaning dilution to remove the mortar. With an average amount of mortar, Sure Klean[®] Custom Masonry Cleaner diluted with four or six parts water should suffice.

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.





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SECTION B - COLOR UNIFORMITY:

DESCRIPTION OF PRODUCTS EVALUATED – Color Uniformity:

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.

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.
- 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 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.





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TEST RESULTS - Color Uniformity

| Substrate: Split-face CMU | Pigment Col | or: "Grey" | |
|----------------------------|--------------|--------------------|---------------------------------------|
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal |
| Custom Masonry Cleaner | 1:2 | 3 | 4 |
| Custom Masonry Cleaner | 1:4 | 3 | 4 |
| Custom Masonry Cleaner | 1:6 | 4 | 4 |
| Substrate: Split-face CMU | Pigment Cole | or: "Light Buff" | |
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal |
| Custom Masonry Cleaner | 1:2 | 4 | 4 |
| Custom Masonry Cleaner | 1:4 | 3 | 4 |
| Custom Masonry Cleaner | 1:6 | 3 | 4 |
| Substrate: Split-face CMU | Pigment Col | or: "Natural" | |
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal |
| Custom Masonry Cleaner | 1:2 | 3 | 4 |
| Custom Masonry Cleaner | 1:4 | 4 | 4 |
| Custom Masonry Cleaner | 1:6 | 4 | 3 |
| Substrate: Split-face CMU | Pigment Cole | or: "Red" | |
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal |
| Custom Masonry Cleaner | 1:2 | 2 | 3 |
| Custom Masonry Cleaner | 1:4 | 3 | 3 |
| Custom Masonry Cleaner | 1:6 | 3 | 3 |
| Substrate: Split-face CMU | Pigmont Cold | or: "Light Sierra" | |
| Product | Dilution | Aggregate Exposure | Surface Pigment Alteration/Removal |
| Custom Masonry Cleaner | 1:2 | 2 | 4 |
| Custom Masonry Cleaner | 1:4 | 3 | 4 |
| Custom Masonry Cleaner | 1:6 | 4 | 4 |
| Cubatrata, Calit fora CMII | Diamont Col | er. "Characal" | |
| Substrate: Split-face CMU | | or: "Charcoal" | Surface Pigment |
| Product | Dilution | Aggregate Exposure | Alteration/Removal |
| Custom Masonry Cleaner | 1:2 | 2 | 3 |
| Custom Masonry Cleaner | 1:4 | 3 | 4 |
| Custom Masonry Cleaner | 1:6 | 4 | 4 |

Scale used for reporting results of both categories

0 – **Worst** match to through-body

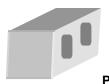
3 – **Good** match to through-body

1 – **Poor** match to through-body

4 - **Best** match to through-body

2 - **Fair** match to through-body

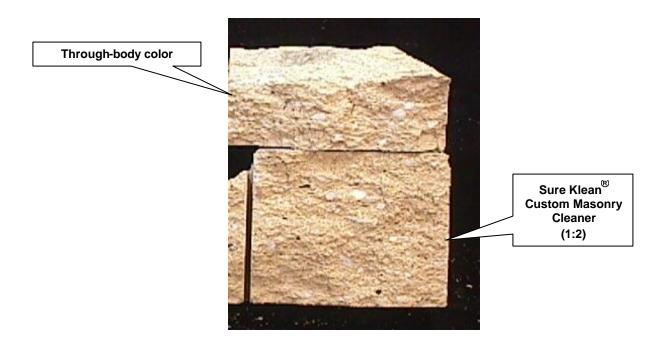
PROSOCO, Inc. • 3741 Greenway Circle • Lawrence, Kansas 66046 • (785) 865-4200 • Fax: (785) 830-9176



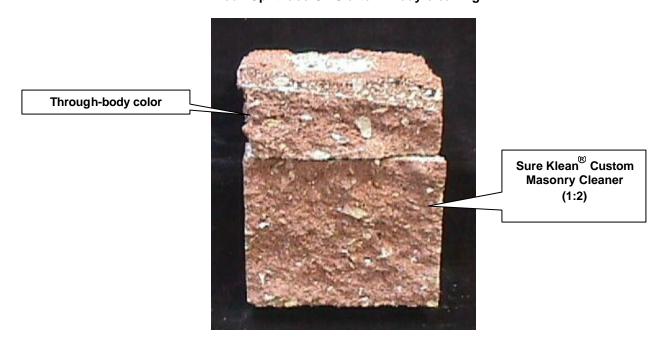
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PHOTOGRAPHS – Color Uniformity

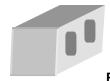
"Light Buff" Split-face CMU after 14 day cleaning



"Red" Split-face CMU after 14 day cleaning







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CONCLUSIONS: COLOR UNIFORMITY:

All dilutions of Sure Klean[®] 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

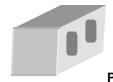
Recommendations for color uniformity for each type of CMU submitted by Lima Cement Products, Lima, OH are provided in the chart below. Recommendations are based on the optimum dilution that provides the best color uniformity.

| Block | Color | Color Uniformity |
|------------------|----------------|--|
| | "Grey" | Sure Klean [®] Custom Masonry Cleaner (1:6) |
| | "Light Buff" | Sure Klean [®] Custom Masonry Cleaner (1:2) |
| All Submitted | "Natural" | Sure Klean [®] Custom Masonry Cleaner (1:6) |
| Split-face CMU's | "Red " | Sure Klean [®] Custom Masonry Cleaner (1:2) |
| | "Light Sierra" | Sure Klean [®] Custom Masonry Cleaner (1:6) |
| | "Charcoal" | Sure Klean [®] 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.

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[®] 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 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:

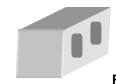
The submitted blocks were scored, allowed to dry, and to reabsorb atmospheric humidity for 24 hours prior to treatment. The treatment method consisted of a wet-on-wet brush application. All treatments were allowed to cure at least 3 days prior to testing.

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.





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TEST RESULTS - Protective Water Repellents:

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

| | RESULTS |
|--------------------------------|----------|
| "Grey" | |
| Untreated Control | < 40 mph |
| Custom Masonry Sealer | 59 mph |
| Siloxane WB Concentrate (1:9) | 59 mph |
| Siloxane WB Concentrate (1:14) | 59 mph |
| "Light Buff" | |
| Untreated Control | 50 mph |
| Custom Masonry Sealer | 60 mph |
| Siloxane WB Concentrate (1:9) | 60 mph |
| Siloxane WB Concentrate (1:14) | 58 mph |
| "Natural" | |
| Untreated Control | 57 mph |
| Custom Masonry Sealer | 58 mph |
| Siloxane WB Concentrate (1:9) | 59 mph |
| Siloxane WB Concentrate (1:14) | 60 mph |
| "Red" | |
| Untreated Control | <40 mph |
| Custom Masonry Sealer | 58 mph |
| Siloxane WB Concentrate (1:9) | 59 mph |
| Siloxane WB Concentrate (1:14) | 57 mph |
| "Light Sierra" | |
| Untreated Control | < 40 mph |
| Custom Masonry Sealer | 59 mph |
| Siloxane WB Concentrate (1:9) | 58 mph |
| Siloxane WB Concentrate (1:14) | 59 mph |

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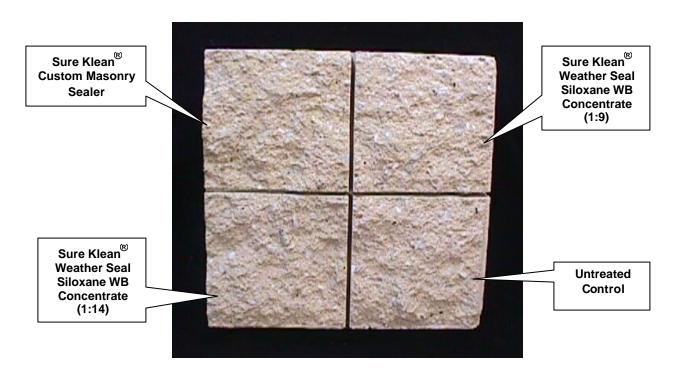
TEST RESULTS Continued - Protective Water Repellents:

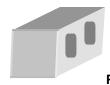
Water Absorption Tube Test: RILEM II.4, 60 mph, 20 Minutes

| "Charcoal" | |
|--------------------------------|----------|
| Untreated Control | < 40 mph |
| Custom Masonry Sealer | 58 mph |
| Siloxane WB Concentrate (1:9) | 57 mph |
| Siloxane WB Concentrate (1:14) | 58 mph |

PHOTOGRAPHS – Protective Water Repellents

"Light Buff" Split-face CMU

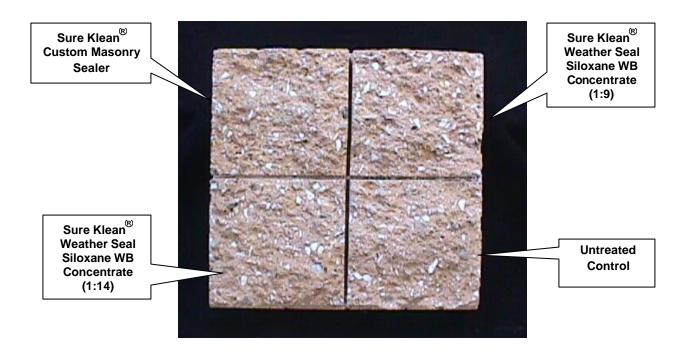




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PHOTOGRAPHS – Protective Water Repellents

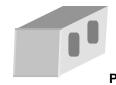
"Light Sierra" Split-face CMU



CONCLUSIONS - Protective Water Repellents

Based upon laboratory evaluations, Sure Klean[®] Weather Seal Siloxane WB Concentrate in both dilutions and Sure Klean[®] Custom Masonry Sealer provided above average water repellency to all submitted samples. Sure Klean[®] Custom Masonry Sealer slightly enhanced the natural color of the CMU's.





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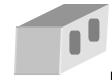
RECOMMENDATIONS - PROTECTIVE WATER REPELLENTS

Recommendations for water repellency treatment for each type of CMU submitted by Lima Cement Products, Lima, OH 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 |
|----------------|--|
| "Grey" | Sure Klean [®] Weather Seal Siloxane WB Concentrate (1:9), (1:14) |
| Olcy | Sure Klean [®] Custom Masonry Sealer |
| "Light Buff" | Sure Klean [®] Weather Seal Siloxane WB Concentrate (1:9), (1:14) |
| Light Ball | Sure Klean [®] Custom Masonry Sealer |
| "Natural" | Sure Klean [®] Weather Seal Siloxane WB Concentrate (1:9), (1:14) |
| Ivaturai | Sure Klean [®] Custom Masonry Sealer |
| "Red" | Sure Klean [®] Weather Seal Siloxane WB Concentrate (1:9), (1:14) |
| red | Sure Klean [®] Custom Masonry Sealer |
| "Light Sierra" | Sure Klean [®] Weather Seal Siloxane WB Concentrate (1:9), (1:14) |
| Light Sierra | Sure Klean [®] Custom Masonry Sealer |
| "Charcoal" | Sure Klean [®] Weather Seal Siloxane WB Concentrate (1:9), (1:14) |
| Charcoal | Sure Klean [®] Custom Masonry Sealer |

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.





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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

Sure Klean Weather Seal Blok-Guard & Graffiti Control – A clear, solvent-based silicone elastomer formulated to weatherproof custom masonry units, cast stone, and concrete block with altering the natural appearance. Blok-Guard & Graffiti Control 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.

Products Evaluated for Graffiti Removal

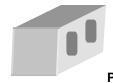
Defacer Eraser[®] **Graffiti Wipe** – An easy-to-use graffiti remover that does not contain methanol, methylene chloride or other "halogenated" solvents prohibited on many projects. Graffiti Wipe removes a variety of graffiti stains from most smooth masonry, wood and metal surfaces.

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)





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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 Sure Klean[®] Weather Seal Blok-Guard & Graffiti Control, in accordance with PROSOCO, Inc.'s Product Guide application recommendations and then allowed to cure for at least fourteen days. At the end of the fourteen-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 at least fourteen days following application of Sure Klean[®] Weather Seal Blok-Guard & Graffiti Control. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents, using either Defacer Eraser[®] Graffiti Wipe or Sure Klean[®] 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:

- 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.



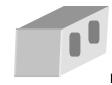


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TEST RESULTS – Graffiti Control

| "Grey" | | | | | |
|--|--------------|-----------------|-----------------|---------------|-------------------|
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 65% | 35% | 30% | 40% | 43% |
| Graffiti Wipe | 30% | 20% | 25% | 25% | 25% |
| Blok-Guard [®] & Graffiti Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 90% | 70% | 65% | 70% | 74% |
| Graffiti Wipe | 90% | 70% | 60% | 60% | 70% |
| | "Liç | ght Buff" | | | |
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 60% | 30% | 30% | 30% | 38% |
| Graffiti Wipe | 50% | 20% | 25% | 20% | 29% |
| Blok-Guard [®] & Graffiti Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 80% | 70% | 70% | 70% | 73% |
| Graffiti Wipe | 70% | 65% | 70% | 65% | 68% |
| | "N | latural" | | | |
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 65% | 30% | 30% | 35% | 40% |
| Graffiti Wipe | 60% | 30% | 30% | 30% | 38% |
| Blok-Guard [®] & Graffiti Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 85% | 65% | 60% | 70% | 70% |
| Graffiti Wipe | 80% | 60% | 65% | 60% | 66% |

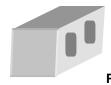




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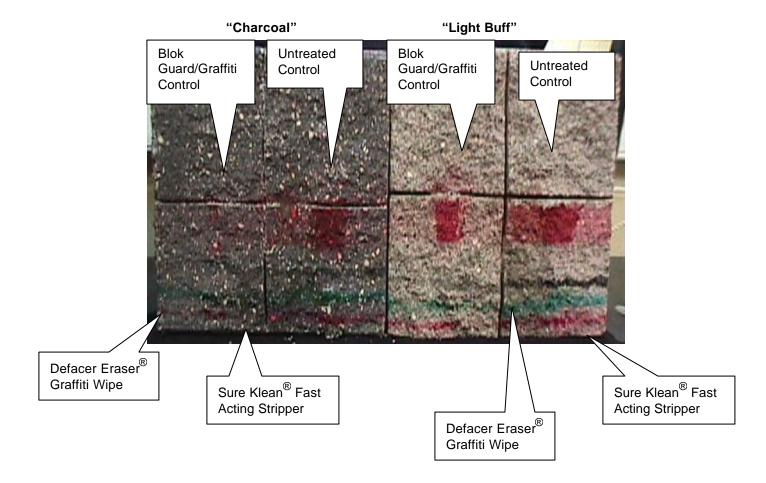
TEST RESULTS – Graffiti Control Continued

| "Red" | | | | | |
|--|--------------|-----------------|-----------------|---------------|-------------------|
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 60% | 35% | 30% | 30% | 39% |
| Graffiti Wipe | 60% | 30% | 30% | 30% | 38% |
| Blok-Guard [®] & Graffiti Control | Red | Black | Green | Red | % Avg. |
| Biok-Guard & Graniti Control | Paint | Marker | Marker | Marker | Removal |
| Fast Acting Stripper | 85% | 80% | 70% | 70% | 76% |
| Graffiti Wipe | 90% | 70% | 70% | 65% | 74% |
| | "Ligl | nt Sierra" | | | |
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 55% | 25% | 20% | 25% | 31% |
| Graffiti Wipe | 40% | 25% | 20% | 25% | 28% |
| Blok-Guard [®] & Graffiti Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 80% | 65% | 70% | 70% | 71% |
| Graffiti Wipe | 85% | 65% | 65% | 65% | 70% |
| "Charcoal" | | | | | |
| Untreated Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 60% | 35% | 35% | 40% | 43% |
| Graffiti Wipe | 60% | 35% | 35% | 40% | 43% |
| Blok-Guard [®] & Graffiti Control | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper | 85% | 80% | 75% | 80% | 80% |
| Graffiti Wipe | 90% | 80% | 75% | 80% | 81% |

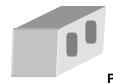


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PHOTOGRAPHS - Graffiti Control







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CONCLUSIONS – Graffiti Control

Based upon laboratory evaluations, Sure Klean[®] Fast Acting Stripper was most effective at removing graffiti from the majority of submitted samples. However, on the Charcoal colored sample Defacer Eraser[®] Graffiti Wipe was the superior product. Graffiti removal was improved dramatically when the submitted samples were treated with Sure Klean[®] Weather Seal Blok-Guard[®] & Graffiti Control prior to graffiti application.

RECOMMENDATIONS - GRAFFITI CONTROL

Recommendations for graffiti control treatment for each type of CMU submitted by Lima Cement Products, Lima OH 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.

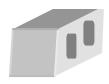
| Block Type | Graffiti Repellents | Graffiti Removers | |
|----------------|--|--|--|
| "Grey" | Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control | Sure Klean [®] Fast Acting Stripper | |
| "Light Buff" | Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control | Sure Klean [®] Fast Acting Stripper | |
| "Natural" | Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control | Sure Klean [®] Fast Acting Stripper | |
| "Red" | Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control | Sure Klean [®] Fast Acting Stripper | |
| "Light Sierra" | Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control | Sure Klean [®] Fast Acting Stripper | |
| "Charcoal" | Sure Klean [®] Weather Seal Blok-Guard [®] & Graffiti Control | 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 graffiti control product and procedure for a particular project. See product literature for additional application and product information.

Keith Norem

Research & Development Chemist

KN/



Laboratory Report

Pallet Tag Program Evaluation REVISED

Lima Cement Products Lima, OH

Project No. 0209-10 PTP

Prepared For:

Denise Hudson Tim Trent

Lima Cement Products 980 Shawnee Road Lima, OH 45805

Prepared By:



PROSOCO, Inc. November 2002