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**Attachments**

    Technical Services TECH Note RILEM Tube Test Procedures

    Product Data literature for all products evaluated



# *PALLET TAG PROGRAM*

## *Laboratory Report*

### **Submitted Information**

**For:** Kyle Orton, Rocky Mountain Stone  
**cc:** Gene Bollinger  
Paul Tessier

**Subject:** Rocky Mountain Stone  
Salt Lake City, UT

**Date:** January 24, 2007

**Project:** 0610-12 PTP

**Samples Submitted:** 5 types of manufactured stone in various sizes, shapes, and colors

| <b>Sample</b>            | <b>Color</b>                                | <b>Size</b> |
|--------------------------|---|-------------|
| "Rubble Timpanogos"      | Brown, White, Gray, Light Brown             | Various     |
| "Sandstone Summit"       | Gray, Brown, Light Brown, Red, Green, White | Various     |
| "Kwik-fit Cedar"         | Red, Brown, Black, Green, White             | Various     |
| "Mountain Ledge Leather" | Light Brown, White                          | Various     |
| "Castle Windsor"         | Light Brown, Red, Brown, Charcoal           | Various     |

Submitted by: Ron Saunders

## **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.

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## **Purpose of Testing**

Five types of manufactured stone were submitted to AMT Laboratories by PROSOCO, Inc. with a request to determine if application of the products evaluated will produce any surface alterations during new construction cleaning operations. Additionally, the effectiveness of water repellents, graffiti control products, stain repellency and color/sheen enhancement products suitable for manufactured stone were evaluated.

**New Construction Cleaning** – Sure Klean<sup>®</sup> Manufactured Stone Cleaner was tested at various dilutions to determine the optimum cleaner/cure time combination for complete removal of laboratory applied Type S mortar from the submitted manufactured stone while limiting surface alterations to the decorative finish. The surface alteration evaluation was visually determined based upon perceived discoloration or erosion/etching of the samples.

To simulate new construction soiling, the samples were placed on a bench with finished surface facing upward. Hollow cylinders measuring 50 mm in diameter and 75 mm tall were positioned on top of the samples and filled with a wet mixture of Type S cementitious mortar. The wet, mortar-filled cylinder was allowed to remain in contact with the samples for 10 minutes before removal.

Heavy deposits of mortar were removed with dry scraping after 24 hours. Prepared cleaning solutions were then evaluated for their effectiveness in removing residual Type S mortar after 3, 7, and 14 days of curing. A visual examination was also made to determine if the tested cleaners caused any surface alterations to the submitted samples based on the following:

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

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

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

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

**Protective Water Repellents** – Sure Klean<sup>®</sup> Weather Seal Siloxane PD, Sure Klean<sup>®</sup> Weather Seal Siloxane WB Concentrate and Sure Klean<sup>®</sup> Weather Seal Blok-Guard<sup>®</sup> & Graffiti Control II were evaluated for their ability to provide water repellency to the submitted samples.

**Graffiti Control** – Sure Klean<sup>®</sup> Weather Seal Blok-Guard<sup>®</sup> & Graffiti Control II and Defacer Eraser<sup>®</sup> Sacrificial Coating SC-1 were evaluated for their ability to repel graffiti from the submitted samples. Sure Klean<sup>®</sup> Fast Acting Stripper and Defacer Eraser<sup>®</sup> Graffiti Wipe were evaluated for their ability to remove graffiti from the submitted samples.

**Color and Sheen Enhancement** – Sure Klean<sup>®</sup> Weather Seal Blok-Guard<sup>®</sup> & Graffiti Control II was evaluated for its ability to provide color and sheen enhancement to the submitted samples.

**Stain Repellency** – Stand Off<sup>®</sup> SLX100 Water & Oil Repellent and Stand Off<sup>®</sup> Stone and Tile & Masonry Protector (STMP) were evaluated for their ability to repel stains from the submitted samples.

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**Products Evaluated****New Construction Cleaning Products Evaluated**

| Sample                              | Product                                | Dilution     |
|-------------------------------------|--|--------------|
| All Submitted<br>Manufactured Stone | Sure Klean® Manufactured Stone Cleaner | (1:2), (1:3) |

**Protective Water Repellent Products Evaluated**

| Sample                              | Product  | Dilution    |
|-------------------------------------|--|-------------|
| All Submitted<br>Manufactured Stone | Sure Klean® Weather Seal Siloxane PD                       | Concentrate |
|                                     | Sure Klean® Weather Seal Siloxane WB Concentrate           | (1:9)       |
|                                     | Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | Concentrate |

**Graffiti Repellent Products Evaluated**

| Sample                              | Product  | Dilution    |
|-------------------------------------|--|-------------|
| All Submitted<br>Manufactured Stone | Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | Concentrate |
|                                     | Defacer Eraser® Sacrificial Coating SC-1                   | Concentrate |

**Graffiti Removal Products Evaluated**

| Sample                              | Product                          | Dilution    |
|-------------------------------------|----------------------------------|-------------|
| All Submitted<br>Manufactured Stone | Sure Klean® Fast Acting Stripper | Concentrate |
|                                     | Defacer Eraser® Graffiti Wipe    | Concentrate |

**Color and Sheen Enhancement Product Evaluated**

| Sample                              | Product  | Dilution    |
|-------------------------------------|--|-------------|
| All Submitted<br>Manufactured Stone | Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | Concentrate |

**Stain Repellency Products Evaluated**

| Sample                              | Product   | Dilution    |
|-------------------------------------|---|-------------|
| All Submitted<br>Manufactured Stone | Stand Off® SLX100 Water & Oil Repellent           | Concentrate |
|                                     | Stand Off® Stone, Tile & Masonry Protector (STMP) | Concentrate |

Dilution ratios refer to mixtures of concentrated product : fresh water.

**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 samples while limiting surface alterations to the decorative finish.

Type S cementitious mortar was prepared in compliance with the manufacturer's instructions, applied to the manufactured stone 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 cementitious mortar was visually evaluated after 3, 7 and 14 days of curing.

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**Description of Products Evaluated – New Construction Cleaning**

**Sure Klean® Manufactured Stone 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. Manufactured Stone Cleaner adds depth to colors and brightens white matrices and exposed aggregate.

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**Test Method – New Construction Cleaning**

New construction cleaners were evaluated using the following procedure:

1. Pre-wet the surface with water.
2. Apply the cleaner.
3. Allow the appropriate dwell time, as specified:  
     Sure Klean® Manufactured Stone Cleaner ..... 3-5 minutes
4. Pressure rinse thoroughly.\*

**\*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)**

| <b>“Rubble Timpanogos”</b>                         |                 |              |              |               |
|--|-----------------|--------------|--------------|---------------|
| <b>Product</b>                                     | <b>Dilution</b> | <b>3 day</b> | <b>7 day</b> | <b>14 day</b> |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2             | 100%         | 100%         | 100%          |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3             | 100%         | 98%          | 100%          |
| <b>“Sandstone Summit”</b>                          |                 |              |              |               |
| <b>Product</b>                                     | <b>Dilution</b> | <b>3 day</b> | <b>7 day</b> | <b>14 day</b> |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2             | 100%         | 100%         | 100%          |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3             | 98%          | 100%         | 100%          |
| <b>“Kwik-fit Cedar”</b>                            |                 |              |              |               |
| <b>Product</b>                                     | <b>Dilution</b> | <b>3 day</b> | <b>7 day</b> | <b>14 day</b> |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2             | 100%         | 100%         | 100%          |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3             | 100%         | 100%         | 100%          |
| <b>“Mountain Ledge Leather”</b>                    |                 |              |              |               |
| <b>Product</b>                                     | <b>Dilution</b> | <b>3 day</b> | <b>7 day</b> | <b>14 day</b> |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2             | 100%         | 100%         | 100%          |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3             | 98%          | 100%         | 100%          |
| <b>“Castle Windsor”</b>                            |                 |              |              |               |
| <b>Product</b>                                     | <b>Dilution</b> | <b>3 day</b> | <b>7 day</b> | <b>14 day</b> |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2             | 100%         | 100%         | 100%          |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3             | 100%         | 100%         | 100%          |

**Test Results – Limiting Surface Alterations**

| <b>Substrate:</b> Manufactured Stone               |          | <b>Pigment Color:</b> "Rubble Timpanogos"      |                         |              |          |  |
|--|----------|--|-------------------------|--------------|----------|--|
| Product  | Dilution | Surface Finish Removal                         | Substrate Deterioration | Color Change | Staining |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2      | 1  | 0                       | 1            | 0        |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3      | 0  | 0                       | 0            | 0        |  |
| <b>Substrate:</b> Manufactured Stone               |          | <b>Pigment Color:</b> "Sandstone Summit"       |                         |              |          |  |
| Product  | Dilution | Surface Finish Removal                         | Substrate Deterioration | Color Change | Staining |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2      | 2  | 0                       | 2            | 0        |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3      | 1  | 0                       | 1            | 0        |  |
| <b>Substrate:</b> Manufactured Stone               |          | <b>Pigment Color:</b> "Kwik-fit Cedar"         |                         |              |          |  |
| Product  | Dilution | Surface Finish Removal                         | Substrate Deterioration | Color Change | Staining |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2      | 4  | 1                       | 4            | 0        |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3      | 3  | 0                       | 3            | 0        |  |
| <b>Substrate:</b> Manufactured Stone               |          | <b>Pigment Color:</b> "Mountain Ledge Leather" |                         |              |          |  |
| Product  | Dilution | Surface Finish Removal                         | Substrate Deterioration | Color Change | Staining |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2      | 4  | 0                       | 4            | 0        |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3      | 4  | 0                       | 4            | 0        |  |
| <b>Substrate:</b> Manufactured Stone               |          | <b>Pigment Color:</b> "Castle Windsor"         |                         |              |          |  |
| Product  | Dilution | Surface Finish Removal                         | Substrate Deterioration | Color Change | Staining |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:2      | 1  | 1                       | 1            | 0        |  |
| Sure Klean <sup>®</sup> Manufactured Stone Cleaner | 1:3      | 1  | 0                       | 1            | 0        |  |

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

- |               |               |
|---------------|---------------|
| 0 – No Change | 3 – Heavy     |
| 1 – Slight    | 4 – Excessive |
| 2 – Moderate  |               |

**Photographs – New Construction Cleaning**

**“Castle Windsor”; 3 Day Cleaning**



**Sure Klean<sup>®</sup> Manufactured Stone Cleaner (1:2)**

**Sure Klean<sup>®</sup> Manufactured Stone Cleaner (1:3)**

**Untreated Control**

**“Castle Windsor”; 7 Day Cleaning**



**Sure Klean<sup>®</sup> Manufactured Stone Cleaner (1:2)**

**Sure Klean<sup>®</sup> Manufactured Stone Cleaner (1:3)**

**Untreated Control**



**Photographs – New Construction Cleaning**

**“Castle Windsor”; 14 Day Cleaning**



**Sure Klean® Manufactured Stone Cleaner (1:2)**

**Sure Klean® Manufactured Stone Cleaner (1:3)**

**Untreated Control**

**Photographs – Limiting Surface Alterations**

**“Castle Windsor” Limiting Surface Alterations**



**Sure Klean® Manufactured Stone Cleaner (1:2)**

**Sure Klean® Manufactured Stone Cleaner (1:3)**

**Untreated Control**

**Photographs – Limiting Surface Alterations**

**“Mountain Ledge Leather” Limiting Surface Alterations**



**Sure Klean® Manufactured Stone Cleaner (1:2)**

**Sure Klean® Manufactured Stone Cleaner (1:3)**

**Untreated Control**

**“Kwik-fit Cedar” Limiting Surface Alterations**



**Sure Klean® Manufactured Stone Cleaner (1:2)**

**Sure Klean® Manufactured Stone Cleaner (1:3)**

**Untreated Control**

### **Conclusions – New Construction Cleaning**

Based on the test results, Sure Klean® Manufactured Stone Cleaner in both dilutions evaluated performed well in removing excess Type S mortar from the submitted samples even after allowing the mortar to remain on the surface of the samples for 14 days.

However, Sure Klean® Manufactured Stone Cleaner diluted with two and/or three parts water removed slight amounts of the pigmented finish from the surface of most of the submitted samples. It is recommended that job-site testing be performed in an inconspicuous area before attempting overall cleaning to determine if the change in appearance is acceptable.

Sure Klean® Manufactured Stone Cleaner in both dilutions evaluated removed heavy to excessive amounts of surface pigment from the “Kwik-fit Cedar” and “Mountain Ledge Leather” samples. Therefore, no cleaning recommendations can be made for those samples.

It is recommended that the selected cleaners always be used in the lowest possible concentration. It should be rinsed with the lowest pressure of water as practical to minimize removal of the decorative finish. Excessive pressure, water volume, and/or repeated application of the recommended products may combine to damage or remove decorative finishes. To facilitate easier removal of excess mortar and construction dirt while minimizing any potential surface alterations to the decorative finish, clean within 3 days of construction for Type S mortar.

### **Recommendations – New Construction Cleaning**

Recommendations for new construction cleaning for the manufactured stone submitted by Rocky Mountain Stone, Salt Lake City, UT are provided in the charts below. Recommendations are based on the optimum dilution for complete removal of mortar while limiting surface alterations.

| <b>Sample</b>   | <b>New Construction Cleaning</b><br>(Type S mortar, 14 day cleaning) |
|---|--|
| “Rubble Timpangos”,<br>“Castle Windsor” and<br>“Sandstone Summit” | Sure Klean® Manufactured Stone Cleaner (1:3)                         |
| “Kwik-fit Cedar” and<br>“Mountain Ledge Leather”                  | No Suggestion  |

Apply all products in accordance with the manufacturer’s recommendation provided on container labels and product data sheets. On-site testing should always be conducted to determine the most appropriate cleaning product and procedures for a particular project. See product literature for additional application and product information.

## **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
- 

### **Description of Products Evaluated – Protective Water Repellents**

**Sure Klean® Weather Seal Siloxane PD** – A ready-to-use, water-based silane/siloxane water repellent for concrete, GFRC, and most masonry and stucco surfaces. Siloxane PD penetrates more deeply than conventional water repellents. It helps masonry resist cracking, spalling, staining and other damage related to water intrusion. Low odor and alkaline stable, Siloxane PD is ideal for field and in-plant application.

**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.

**Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II** – A clear-drying, water-based silicone emulsion for weatherproofing concrete block and other porous masonry materials. Blok-Guard® & Graffiti Control II also protects masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control II protects exterior walls exposed to normal weathering. Graffiti removal from treated surfaces is fast and easy using Defacer Eraser® Graffiti Wipe. Blok-Guard® & Graffiti Control II is easy to apply with low-pressure spray, brush or roller.

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**Sample Preparation – Protective Water Repellents**

The submitted samples were scored and allowed to dry for at least 24 hours prior to treatment. All treatments were applied by brush in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions. All treatments were allowed to cure for at least 72 hours prior to testing.

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**Test Methods – Protective Water Repellents****Water Absorption Tube Test: Vertical RILEM II.4, 5.0 milliliters, 20 minutes**

The water absorption tube test simulating wind driven and wind blown rain conditions was performed. Tests were run with vertical 5.0-milliliter head pressures. Filled to 5.0 milliliters, a water absorption tube produces a 98 mph dynamic wind pressure. See RILEM II.4 Tech Note for additional information.

The ranking system used to evaluate the effectiveness of the products applied to each submitted sample is as follows:

**AA** = "Above Average" correlates to less than or equal to 20% of the maximum untreated absorption.

**A** = "Average" correlates to less than or equal to 50% of the maximum untreated absorption.

**BA** = "Below Average" correlates to greater than 50% of the maximum untreated absorption.

**EXAMPLE:** If RILEM tubes applied to an untreated sample result in loss of 5.0 mL of water or more, then:

A rating of **AA** *Above Average* water repellent performance would be reported for treatments which result in a loss of no more than:

$$5.0 \text{ mL} \times 20\% = \mathbf{1.0 \text{ mL}}$$

A rating of **A** *Average* water repellent performance would be reported for treatments which result in a loss of no more than:

$$5.0 \text{ mL} \times 50\% = \mathbf{2.5 \text{ mL}}$$

A rating of **BA** *Below Average* water repellent performance would be reported for treatments which result in a loss of more than:

$$5.0 \text{ mL} \times 50\% = \mathbf{2.5 \text{ mL}}$$

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**Test Results – Protective Water Repellents****Water Absorption Tube Test: Vertical RILEM II.4, 5.0 milliliters, 20 minutes****AA = Above Average****A = Average****BA = Below Average**

| <b>“Rubble Timpanogos”</b>   | <b>Results in mL loss</b> | <b>Ranking</b> |
|--|---------------------------|----------------|
| Untreated Control  | 2.1                       | --             |
| Sure Klean <sup>®</sup> Weather Seal Siloxane PD                                   | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Siloxane WB Concentrate (1:9)                 | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Blok-Guard <sup>®</sup> & Graffiti Control II | 0.0                       | <b>AA</b>      |
| <b>“Sandstone Summit”</b>  | <b>Results in mL loss</b> | <b>Ranking</b> |
| Untreated Control  | 0.8                       | --             |
| Sure Klean <sup>®</sup> Weather Seal Siloxane PD                                   | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Siloxane WB Concentrate (1:9)                 | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Blok-Guard <sup>®</sup> & Graffiti Control II | 0.0                       | <b>AA</b>      |
| <b>“Kwik-fit Cedar”</b>  | <b>Results in mL loss</b> | <b>Ranking</b> |
| Untreated Control  | 1.0                       | --             |
| Sure Klean <sup>®</sup> Weather Seal Siloxane PD                                   | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Siloxane WB Concentrate (1:9)                 | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Blok-Guard <sup>®</sup> & Graffiti Control II | < 0.1                     | <b>AA</b>      |
| <b>“Mountain Ledge Leather”</b>  | <b>Results in mL loss</b> | <b>Ranking</b> |
| Untreated Control  | 1.2                       | --             |
| Sure Klean <sup>®</sup> Weather Seal Siloxane PD                                   | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Siloxane WB Concentrate (1:9)                 | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Blok-Guard <sup>®</sup> & Graffiti Control II | 0.0                       | <b>AA</b>      |
| <b>“Castle Windsor”</b>  | <b>Results in mL loss</b> | <b>Ranking</b> |
| Untreated Control  | 0.9                       | --             |
| Sure Klean <sup>®</sup> Weather Seal Siloxane PD                                   | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Siloxane WB Concentrate (1:9)                 | 0.0                       | <b>AA</b>      |
| Sure Klean <sup>®</sup> Weather Seal Blok-Guard <sup>®</sup> & Graffiti Control II | 0.0                       | <b>AA</b>      |

**Photographs – Protective Water Repellents**

**“Castle Windsor”; Vertical RILEM II.4, 5.0 milliliters, 20 minutes**



**Sure Klean®  
Weather Seal  
Siloxane PD**

**Sure Klean® Weather  
Seal Siloxane WB  
Concentrate (1:9)**

**Untreated Control**

**Sure Klean® Weather  
Seal Blok-Guard® &  
Graffiti Control II**

**Conclusions – Protective Water Repellents**

Test results indicate that all of the water repellents tested exhibited above average water repellency on the submitted samples. Sure Klean® Weather Seal Siloxane PD and Sure Klean® Weather Seal Siloxane WB Concentrate did not alter the appearance of any of the samples. Samples treated with Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II showed slight to moderate color enhancement.

**Recommendations – Protective Water Repellents**

Recommendations for water repellent treatments for the manufactured stone submitted by Rocky Mountain Stone, Salt Lake City UT are provided in the chart below. Recommendations are based on the treatments that proved most effective at providing water repellency on the submitted manufactured stone.

| Sample                              | Protective Water Repellents  |
|-------------------------------------|--|
| All Submitted<br>Manufactured Stone | Sure Klean® Weather Seal Siloxane WB Concentrate (1:9)<br>OR<br>Sure Klean® Weather Seal Siloxane PD<br>OR<br>Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II |

The ability of a water repellent treatment to prevent the ingress of water is affected by a variety of factors. Therefore, on-site testing should be carried out for all installations with the recommended systems to ensure job site workmanship yields equivalent 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 water repellent product and procedures for a particular project. See product literature for additional application and product information.



## **Graffiti Control**

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

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### **Description of Products Evaluated – Graffiti Control**

#### **Products Evaluated for Graffiti Repellency**

**Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II** – A clear-drying, water-based silicone emulsion for weatherproofing concrete block and other porous masonry materials. Blok-Guard® & Graffiti Control II also protects masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control II protects exterior walls exposed to normal weathering. Graffiti removal from treated surfaces is fast and easy using Defacer Eraser® Graffiti Wipe. Blok-Guard® & Graffiti Control II is easy to apply with low-pressure spray, brush or roller.

**Defacer Eraser® 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, preventing spray paints, crayons and ink from penetrating and staining the underlying surface. Graffiti is removed from protected surfaces by high-pressure hot water, Defacer Eraser® Graffiti Wipe or Sure Klean® Fast Acting Stripper. The coating must then be reapplied to restore the graffiti barrier.

#### **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**

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II and Defacer Eraser® Sacrificial Coating SC-1 were applied in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions to sections of the manufactured stone samples. The samples were allowed to cure for at least one day. 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 applications of Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II and Defacer Eraser® Sacrificial Coating SC-1. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents, using Defacer Eraser® Graffiti Wipe and Sure Klean® Fast Acting Stripper.

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**Test Methods – Graffiti Control**

Chemical cleaners were evaluated using the following procedure:

1. Apply the graffiti removal product to a dry surface, soiled with graffiti.
2. Allow appropriate dwell time:  
    Graffiti Wipe .....5 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 Equipment** – Masonry washing equipment generating approximately 700-800 psi with a water flow rate of 8 gallons per minute delivered through a 45 degree fan spray tip was used for rinsing.



**Test Results – Graffiti Control**

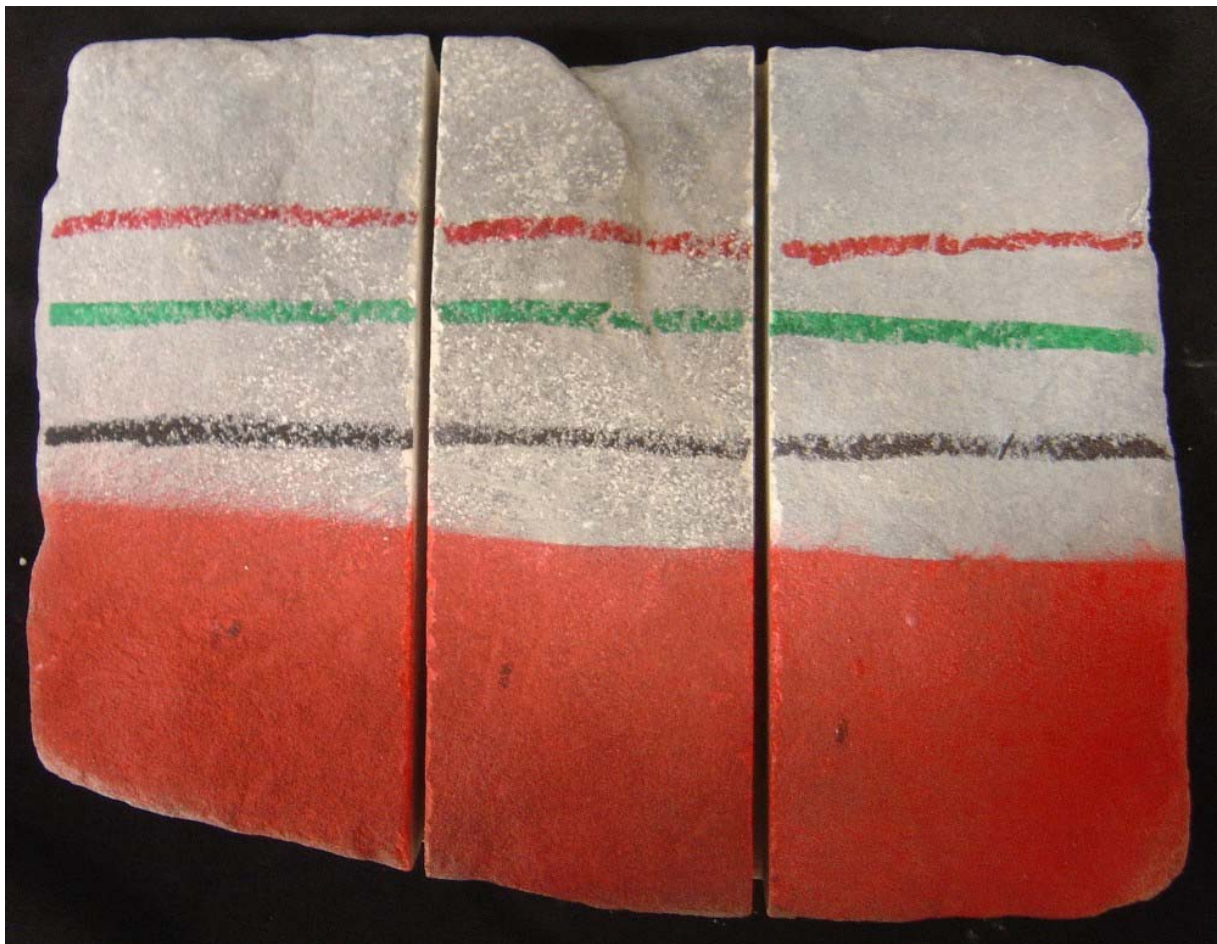
| <b>“Rubble Timpanogos”</b>                   |                  |                     |                     |                   |                       |
|--|------------------|---------------------|---------------------|-------------------|-----------------------|
| <b>Untreated Control</b>                     | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 50%              | 98%                 | 70%                 | 90%               | <b>77%</b>            |
| Graffiti Wipe                                | 50%              | 50%                 | 60%                 | 80%               | <b>60%</b>            |
| <b>Blok-Guard® &amp; Graffiti Control II</b> | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 90%              | 95%                 | 70%                 | 100%              | <b>89%</b>            |
| Graffiti Wipe                                | 95%              | 80%                 | 60%                 | 90%               | <b>81%</b>            |
| <b>Sacrificial Coating SC-1</b>              | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 99%              | 100%                | 99%                 | 99%               | <b>99%</b>            |
| Graffiti Wipe                                | 99%              | 100%                | 100%                | 100%              | <b>100%</b>           |
| <b>“Sandstone Summit”</b>                    |                  |                     |                     |                   |                       |
| <b>Untreated Control</b>                     | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 40%              | 80%                 | 60%                 | 80%               | <b>65%</b>            |
| Graffiti Wipe                                | 70%              | 60%                 | 50%                 | 60%               | <b>60%</b>            |
| <b>Blok-Guard® &amp; Graffiti Control II</b> | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 90%              | 90%                 | 70%                 | 95%               | <b>86%</b>            |
| Graffiti Wipe                                | 99%              | 80%                 | 60%                 | 80%               | <b>79%</b>            |
| <b>Sacrificial Coating SC-1</b>              | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 95%              | 98%                 | 95%                 | 95%               | <b>96%</b>            |
| Graffiti Wipe                                | 99%              | 95%                 | 98%                 | 98%               | <b>98%</b>            |
| <b>“Kwik-fit Cedar”</b>                      |                  |                     |                     |                   |                       |
| <b>Untreated Control</b>                     | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 80%              | 95%                 | 60%                 | 95%               | <b>83%</b>            |
| Graffiti Wipe                                | 85%              | 60%                 | 70%                 | 70%               | <b>71%</b>            |
| <b>Blok-Guard® &amp; Graffiti Control II</b> | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 90%              | 98%                 | 90%                 | 98%               | <b>94%</b>            |
| Graffiti Wipe                                | 95%              | 80%                 | 80%                 | 95%               | <b>88%</b>            |
| <b>Sacrificial Coating SC-1</b>              | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 98%              | 99%                 | 95%                 | 98%               | <b>98%</b>            |
| Graffiti Wipe                                | 99%              | 98%                 | 95%                 | 99%               | <b>98%</b>            |
| <b>“Mountain Ledge Leather”</b>              |                  |                     |                     |                   |                       |
| <b>Untreated Control</b>                     | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 80%              | 80%                 | 60%                 | 70%               | <b>73%</b>            |
| Graffiti Wipe                                | 90%              | 50%                 | 60%                 | 60%               | <b>65%</b>            |
| <b>Blok-Guard® &amp; Graffiti Control II</b> | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 90%              | 90%                 | 90%                 | 95%               | <b>91%</b>            |
| Graffiti Wipe                                | 98%              | 85%                 | 90%                 | 90%               | <b>91%</b>            |
| <b>Sacrificial Coating SC-1</b>              | <b>Red Paint</b> | <b>Black Marker</b> | <b>Green Marker</b> | <b>Red Marker</b> | <b>% Avg. Removal</b> |
| Fast Acting Stripper                         | 95%              | 95%                 | 95%                 | 99%               | <b>96%</b>            |
| Graffiti Wipe                                | 98%              | 99%                 | 99%                 | 99%               | <b>99%</b>            |

**Test Results – Graffiti Control**

| "Castle Windsor"                  |           |              |              |            |                |
|-----------------------------------|-----------|--------------|--------------|------------|----------------|
| Untreated Control                 | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper              | 80%       | 90%          | 60%          | 85%        | <b>76%</b>     |
| Graffiti Wipe                     | 70%       | 60%          | 60%          | 60%        | <b>63%</b>     |
| Blok-Guard® & Graffiti Control II | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper              | 80%       | 98%          | 70%          | 98%        | <b>87%</b>     |
| Graffiti Wipe                     | 90%       | 80%          | 75%          | 80%        | <b>81%</b>     |
| Sacrificial Coating SC-1          | Red Paint | Black Marker | Green Marker | Red Marker | % Avg. Removal |
| Fast Acting Stripper              | 98%       | 95%          | 95%          | 95%        | <b>96%</b>     |
| Graffiti Wipe                     | 95%       | 98%          | 98%          | 95%        | <b>97%</b>     |

**Photographs – Graffiti Control**

"Sandstone Summit"; Before Graffiti Removal



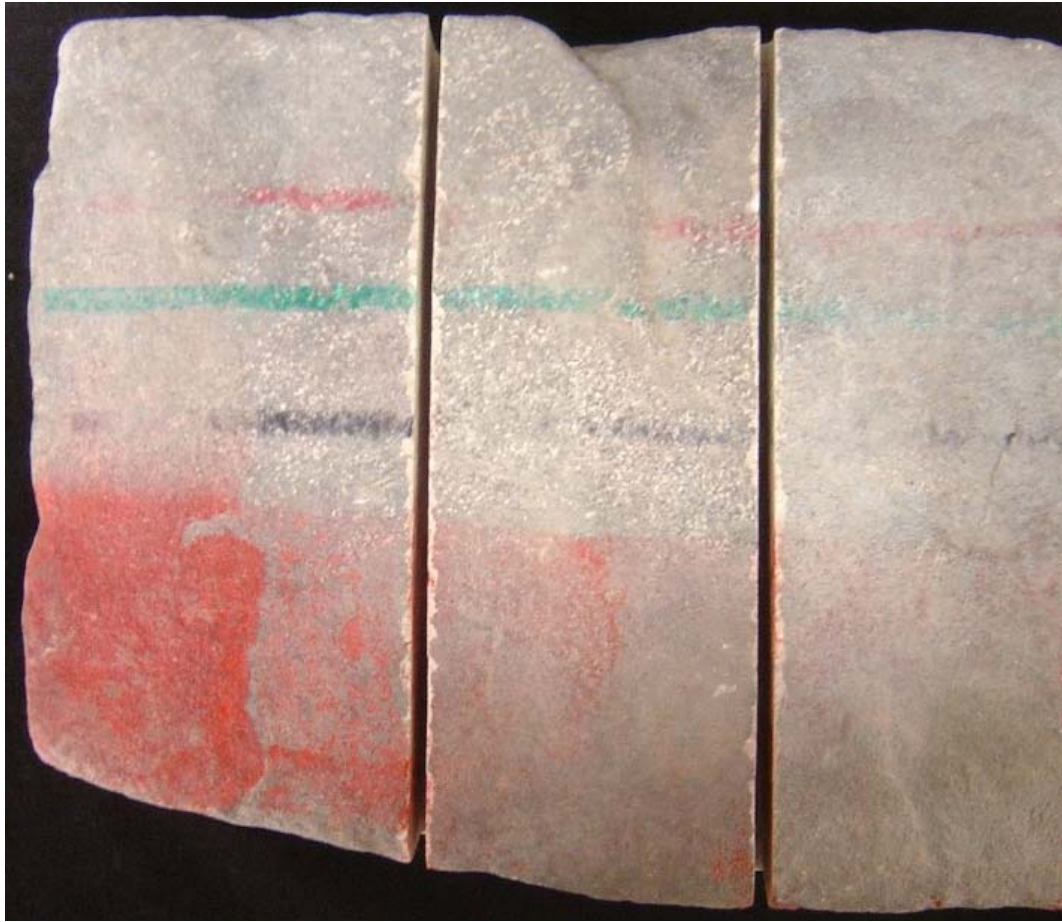
Untreated Control

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II

Defacer Eraser® Sacrificial Coating SC-1

**Photographs – Graffiti Control**

**“Sandstone Summit”; After Graffiti Removal**



**Untreated Control**

**Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II**

**Defacer Eraser® Sacrificial Coating SC-1**

**Sure Klean®  
Fast Acting  
Stripper**

**Defacer  
Eraser®  
Graffiti Wipe**

**Sure Klean®  
Fast Acting  
Stripper**

**Defacer  
Eraser®  
Graffiti Wipe**

**Sure Klean®  
Fast Acting  
Stripper**

**Defacer  
Eraser®  
Graffiti Wipe**

**Conclusions – Graffiti Control**

Based upon laboratory evaluations, graffiti removal was improved when the submitted samples were treated with Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II and Defacer Eraser® Sacrificial Coating SC-1 prior to graffiti application. In addition, Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II and Defacer Eraser® Sacrificial Coating SC-1 provided a slight to moderate color enhancement to the submitted samples.

**Recommendations – Graffiti Control**

Recommendations for graffiti control treatment for each type of manufactured stone submitted by Rocky Mountain Stone, Salt Lake City, UT 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.

| Sample Type                         | Graffiti Repellency   | Graffiti Removal  |
|-------------------------------------|---|---|
| All Submitted<br>Manufactured Stone | Sure Klean® Weather Seal<br>Blok-Guard® & Graffiti Control II<br>OR<br>Defacer Eraser® Sacrificial Coating SC-1 | Sure Klean® Fast Acting Stripper<br>OR<br>Defacer Eraser® Graffiti Wipe |

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.

## **Color and Sheen Enhancement**

This evaluation compares the effectiveness of Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II in providing color and sheen enhancement to the submitted samples.

### **Description of Product Evaluated** – Color and Sheen Enhancement

**Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II** – A clear-drying, water-based silicone emulsion for weatherproofing concrete block and other porous masonry materials. Blok-Guard® & Graffiti Control II also protects masonry surfaces from graffiti attacks without altering the natural appearance. Blok-Guard® & Graffiti Control II protects exterior walls exposed to normal weathering. Graffiti removal from treated surfaces is fast and easy using Defacer Eraser® Graffiti Wipe. Blok-Guard® & Graffiti Control II is easy to apply with low-pressure spray, brush or roller.

### **Sample Preparation** – Color and Sheen Enhancement

Samples were cleaned with Enviro Klean® 2010 All Surface Cleaner diluted with 10 parts water and allowed to dry for 24 hours prior to treatment.

### **Test Method** – Color and Sheen Enhancement

Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II was applied in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions. After 24 hours, a visual evaluation was conducted to determine the level of color and sheen enhancement the treatments provided as compared to the untreated control.

### **Test Results** – Color and Sheen Enhancement

| <b>“Rubble Timpangos”</b>                                  |                          |                          |
|--|--------------------------|--------------------------|
| <b>Treatment</b>   | <b>Color Enhancement</b> | <b>Sheen Enhancement</b> |
| Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | 3                        | 0                        |
| <b>“Sandstone Summit”</b>                                  |                          |                          |
| <b>Treatment</b>   | <b>Color Enhancement</b> | <b>Sheen Enhancement</b> |
| Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | 2                        | 0                        |
| <b>“Kwik-fit Cedar”</b>                                    |                          |                          |
| <b>Treatment</b>   | <b>Color Enhancement</b> | <b>Sheen Enhancement</b> |
| Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | 3                        | 0                        |
| <b>“Mountain Ledge Leather”</b>                            |                          |                          |
| <b>Treatment</b>   | <b>Color Enhancement</b> | <b>Sheen Enhancement</b> |
| Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | 2                        | 0                        |
| <b>“Castle Windsor”</b>                                    |                          |                          |
| <b>Treatment</b>   | <b>Color Enhancement</b> | <b>Sheen Enhancement</b> |
| Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | 2                        | 0                        |

**Scale: 0 - No Enhancement; Dull**

**1 - Slight Enhancement**

**2 - Moderate Enhancement**

**3 - Significant Enhancement**

**Photographs – Color and Sheen Enhancement**

**“Rubble Timpangos” Color and Sheen Enhancement**



**Untreated Control**

**Blok-Guard® & Graffiti Control II**

**Recommendations – Color and Sheen Enhancement**

Recommendations for color and sheen enhancement for each type of manufactured stone submitted by Rocky Mountain Stone, Salt Lake City, UT are provided in the chart below. Recommendations are based on how effective Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II was in providing color and sheen enhancement to the submitted samples.

| Sample                           | Color Enhancement  | Sheen Enhancement |
|----------------------------------|--|-------------------|
| All Submitted Manufactured Stone | Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II | No Suggestions    |

Apply Sure Klean® Weather Seal Blok-Guard® & Graffiti Control II 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 product and procedures for a particular project. See product literature for additional application and product information.



## **Stain Repellency**

These trials were conducted to determine the effectiveness of treatments in preventing food and oil staining on the submitted samples.

### **Description of Products Evaluated – Stain Repellency**

#### **Stain Repellent Treatments**

**Stand Off® SLX100 Water & Oil Repellent** – Combines water and oil repellency on most substrates to prevent staining by waterborne and oily substances. This modified “neat” silane system offers invisible protection and low volatility. The small molecular structure of SLX100 allows for maximum penetration at coverage rates higher than that of conventional silanes. Depth of penetration is controlled by the application rate (loading rate). This makes SLX100 ideal for protecting granite and other dense, color-sensitive surfaces.

**Stand Off® Stone, Tile & Masonry Protector (STMP)** – A penetrating oil and stain repellent that is an easy-to-use, low-VOC, low-odor protective treatment improves the stain resistance and simplifies maintenance cleaning of interior and exterior stone, quarry tile, concrete and masonry surfaces.

#### **Maintenance Cleaner**

**Enviro Klean® 2010 All Surface Cleaner** – A “next-generation” product for cleaning and degreasing light-to-heavily soiled stone, tile, masonry and much more. Powerful enough for industrial use, flexible enough for jobs around the home, space-saving EK 2010 replaces a host of individual cleaning agents. It is suitable for home-use on windows, bathroom tub and tile, counter tops and more when diluted with water. It's concentrated enough for the toughest industrial cleaning jobs on concrete, metal and many other plant and warehouse surfaces. EK 2010 also removes Paver Kare® Weather Seal Siloxane PD overspray from windows.

#### **Staining Agents Evaluated**

| <b><u>Products</u></b> | <b><u>Temperature</u></b> |
|------------------------|---------------------------|
| Coca Cola              | ambient (~70°F)           |
| Ketchup                | ambient (~70°F)           |
| Mustard                | ambient (~70°F)           |
| Red Wine               | ambient (~70°F)           |
| Balsamic Vinegar       | ambient (~70°F)           |
| Soy Sauce              | ambient (~70°F)           |
| Olive Oil              | ambient (~70°F)           |
| Wesson Oil             | (~250°F)                  |
| Coffee                 | (~120°F)                  |

### **Sample Preparation – Stain Repellency**

Samples were cleaned with Enviro Klean® 2010 All Surface Cleaner diluted with 10 parts water, allowed to dry and absorb atmospheric moisture for 24 hours prior to treatment. Both products were applied in accordance with the current PROSOCO, Inc. Product Data Sheet application instructions and allowed to cure for at least 72 hours.

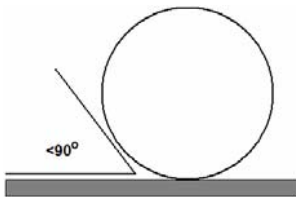
**Test Method – Stain Repellency****Surface Beading Evaluation**

The food and oil products were applied to the test areas by using a dropper creating a bead 0.5 – 1.0 cm in diameter. The beading properties of the oils and liquids were visually evaluated within two minutes after application. The results are reported as a rating based on the angle of contact between the base of the droplet and the substrate. A rating of “1 or 2” indicated the smallest angle of contact ( $<90^\circ$ ) which correlates to “above average” repellency. A rating of “3 or 4” indicates “average” repellency. A rating of “5 or greater” indicated that the oil quickly absorbed into the substrate and correlates to “below average” repellency.

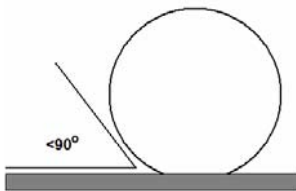
**Note: Non-free flowing staining agents such as ketchup and mustard are applied in a globular fashion and therefore are not evaluated for their beading properties.**

**Rating System (1-5)**

1. No wetting of contact area (no darkening); angle less than  $90^\circ$ .



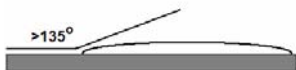
2. Wetting contained to the contact area (slight darkening); angle is less than  $90^\circ$ .



3. Wetting contained to the contact area (slight darkening); angle is greater than  $90^\circ$ , but less than  $135^\circ$ .



4. Wetting beyond the contact area (darkening); angle is greater than  $135^\circ$ .



5. Wetting beyond the contact area (darkening); angle is flat.

**Stain Removal Evaluation**

The soiling agents were allowed to dwell on the treated and untreated substrates for times of 24 hours, 4 hours, 1 hour, and 10 minutes. The test areas were then cleaned with Enviro Klean® 2010 All Surface Cleaner diluted 1 part concentrate to 10 parts fresh water and scrubbed under a stream of running water from a faucet. Samples were allowed to dry for 24 hours. Evaluation consisted of a visual examination of the tested areas to determine the percentage of staining removal.

**Test Results – Surface Beading**

| <b>“Rubble Timpanogos”</b>      |           |         |         |          |                  |           |           |            |            |
|---------------------------------|-----------|---------|---------|----------|------------------|-----------|-----------|------------|------------|
|                                 | Coco-Cola | Ketchup | Mustard | Red Wine | Balsamic Vinegar | Soy Sauce | Olive Oil | Wesson Oil | Hot Coffee |
| Untreated Control               | 5         | —       | —       | 5        | 5                | 4         | 5         | 5          | 5          |
| SLX100                          | 1         | —       | —       | 1        | 1                | 1         | 2         | 2          | 2          |
| STMP                            | 2         | —       | —       | 3        | 3                | 2         | 2         | 2          | 3          |
| <b>“Sandstone Summit”</b>       |           |         |         |          |                  |           |           |            |            |
|                                 | Coco-Cola | Ketchup | Mustard | Red Wine | Balsamic Vinegar | Soy Sauce | Olive Oil | Wesson Oil | Hot Coffee |
| Untreated Control               | 5         | —       | —       | 5        | 5                | 5         | 5         | 5          | 5          |
| SLX100                          | 1         | —       | —       | 1        | 1                | 1         | 1         | 1          | 2          |
| STMP                            | 2         | —       | —       | 3        | 2                | 2         | 2         | 2          | 3          |
| <b>“Kwik-fit Cedar”</b>         |           |         |         |          |                  |           |           |            |            |
|                                 | Coco-Cola | Ketchup | Mustard | Red Wine | Balsamic Vinegar | Soy Sauce | Olive Oil | Wesson Oil | Hot Coffee |
| Untreated Control               | 5         | —       | —       | 5        | 5                | 5         | 5         | 5          | 5          |
| SLX100                          | 1         | —       | —       | 1        | 1                | 1         | 1         | 1          | 1          |
| STMP                            | 2         | —       | —       | 3        | 2                | 2         | 1         | 1          | 4          |
| <b>“Mountain Ledge Leather”</b> |           |         |         |          |                  |           |           |            |            |
|                                 | Coco-Cola | Ketchup | Mustard | Red Wine | Balsamic Vinegar | Soy Sauce | Olive Oil | Wesson Oil | Hot Coffee |
| Untreated Control               | 5         | —       | —       | 5        | 5                | 5         | 5         | 5          | 5          |
| SLX100                          | 1         | —       | —       | 1        | 1                | 1         | 1         | 2          | 1          |
| STMP                            | 1         | —       | —       | 3        | 3                | 2         | 2         | 2          | 2          |
| <b>“Castle Windsor”</b>         |           |         |         |          |                  |           |           |            |            |
|                                 | Coco-Cola | Ketchup | Mustard | Red Wine | Balsamic Vinegar | Soy Sauce | Olive Oil | Wesson Oil | Hot Coffee |
| Untreated Control               | 5         | —       | —       | 5        | 5                | 5         | 5         | 5          | 5          |
| SLX100                          | 1         | —       | —       | 1        | 1                | 1         | 1         | 1          | 2          |
| STMP                            | 1         | —       | —       | 3        | 3                | 2         | 2         | 2          | 3          |

\*Indicates etching occurred due to the acidic nature of the staining agents.

**Test Results – Stain Repellency**

| <b>“Rubble Timpanogos”</b>                                   |                  |                |                |                 |                         |                  |                  |                   |                   |
|--|------------------|----------------|----------------|-----------------|-------------------------|------------------|------------------|-------------------|-------------------|
| <b>Untreated Control</b>                                     |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 50%            | 50%            | 95%*            | 98%*                    | 95%              | 70%              | 70%               | 90%               |
| <b>4 hour</b>  | 100%             | 100%           | 50%            | 95%*            | 98%*                    | 95%              | 70%              | 70%               | 90%               |
| <b>1 hour</b>  | 100%             | 100%           | 98%            | 95%*            | 100%                    | 100%             | 70%              | 70%               | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 98%*            | 100%                    | 100%             | 70%              | 70%               | 100%              |
| <b>Stand Off® SLX100 Water &amp; Oil Repellent</b>           |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 50%            | 50%            | 90%*            | 98%*                    | 100%             | 70%              | 60%               | 90%               |
| <b>4 hour</b>  | 100%             | 100%           | 100%           | 98%*            | 100%                    | 100%             | 90%              | 70%               | 90%               |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 70%               | 90%               |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</b> |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 50%            | 50%            | 95%*            | 100%                    | 100%             | 90%              | 60%               | 98%               |
| <b>4 hour</b>  | 100%             | 100%           | 50%            | 98%*            | 100%                    | 100%             | 100%             | 90%               | 100%              |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>“Sandstone Summit”</b>                                    |                  |                |                |                 |                         |                  |                  |                   |                   |
| <b>Untreated Control</b>                                     |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 50%*           | 50%*           | 90%*            | 90%*                    | 90%              | 90%              | 90%               | 100%              |
| <b>4 hour</b>  | 100%             | 100%*          | 50%*           | 90%*            | 90%*                    | 90%              | 90%              | 90%               | 100%              |
| <b>1 hour</b>  | 100%             | 100%*          | 100%*          | 90%*            | 90%*                    | 90%              | 90%              | 90%               | 100%              |
| <b>10 min.</b>   | 100%             | 100%*          | 100%*          | 90%*            | 90%*                    | 90%              | 100%             | 100%              | 100%              |
| <b>Stand Off® SLX100 Water &amp; Oil Repellent</b>           |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 50%*           | 50%*           | 100%*           | 100%                    | 100%             | 90%              | 90%               | 90%               |
| <b>4 hour</b>  | 100%             | 100%*          | 50%*           | 100%*           | 100%                    | 100%             | 90%              | 90%               | 90%               |
| <b>1 hour</b>  | 100%             | 100%*          | 100%*          | 100%*           | 100%                    | 100%             | 90%              | 90%               | 90%               |
| <b>10 min.</b>   | 100%             | 100%*          | 100%*          | 100%*           | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</b> |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 50%            | 50%            | 100%*           | 100%                    | 100%             | 90%              | 90%               | 100%              |
| <b>4 hour</b>  | 100%             | 100%           | 50%            | 100%*           | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |

\*Indicates etching occurred due to the acidic nature of the staining agents.

**Test Results – Stain Repellency**

| <b>“Kwik-fit Cedar”</b>                                      |                  |                |                |                 |                         |                  |                  |                   |                   |
|--|------------------|----------------|----------------|-----------------|-------------------------|------------------|------------------|-------------------|-------------------|
| <b>Untreated Control</b>                                     |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 95%*           | 50%*           | 70%*            | 100%*                   | 60%              | 60%              | 100%              | 100%              |
| <b>4 hour</b>  | 100%             | 95%*           | 50%*           | 100%*           | 100%*                   | 60%              | 60%              | 100%              | 100%              |
| <b>1 hour</b>  | 100%             | 100%*          | 100%*          | 100%*           | 100%*                   | 100%             | 100%             | 100%              | 100%              |
| <b>10 min.</b>   | 100%             | 100%*          | 100%*          | 100%*           | 100%*                   | 100%             | 100%             | 100%              | 100%              |
| <b>Stand Off® SLX100 Water &amp; Oil Repellent</b>           |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 50%            | 50%*           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>4 hour</b>  | 100%             | 100%           | 70%*           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>1 hour</b>  | 100%             | 100%           | 100%*          | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</b> |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 70%            | 60%            | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>4 hour</b>  | 100%             | 98%            | 70%            | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>“Mountain Ledge Leather”</b>                              |                  |                |                |                 |                         |                  |                  |                   |                   |
| <b>Untreated Control</b>                                     |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 80%            | 70%            | 90%             | 90%                     | 100%             | 80%              | 80%               | 100%              |
| <b>4 hour</b>  | 100%             | 80%            | 70%            | 90%             | 90%                     | 100%             | 80%              | 80%               | 100%              |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 90%             | 90%                     | 100%             | 80%              | 80%               | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 90%              | 90%               | 100%              |
| <b>Stand Off® SLX100 Water &amp; Oil Repellent</b>           |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 100%           | 90%            | 90%             | 90%                     | 100%             | 80%              | 80%               | 100%              |
| <b>4 hour</b>  | 100%             | 100%           | 100%           | 90%             | 100%                    | 100%             | 80%              | 80%               | 100%              |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 90%              | 90%               | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</b> |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 80%            | 80%            | 90%             | 90%                     | 100%             | 90%              | 90%               | 100%              |
| <b>4 hour</b>  | 100%             | 100%           | 80%            | 90%             | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |

\*Indicates etching occurred due to the acidic nature of the staining agents.

**Test Results – Stain Repellency**

| <b>“Castle Windsor”</b>                                      |                  |                |                |                 |                         |                  |                  |                   |                   |
|--|------------------|----------------|----------------|-----------------|-------------------------|------------------|------------------|-------------------|-------------------|
| <b>Untreated Control</b>                                     |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 70%            | 60%            | 90%*            | 90%*                    | 95%              | 80%              | 70%               | 90%               |
| <b>4 hour</b>  | 100%             | 70%            | 60%            | 90%*            | 90%*                    | 95%              | 80%              | 70%               | 90%               |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 90%*            | 90%*                    | 100%             | 80%              | 70%               | 90%               |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 90%*            | 100%*                   | 100%             | 90%              | 70%               | 100%              |
| <b>Stand Off® SLX100 Water &amp; Oil Repellent</b>           |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 60%            | 98%            | 95%*            | 100%*                   | 100%             | 80%              | 80%               | 90%               |
| <b>4 hour</b>  | 100%             | 100%           | 98%            | 95%*            | 100%*                   | 100%             | 90%              | 90%               | 90%               |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 98%*            | 100%*                   | 100%             | 98%              | 90%               | 90%               |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%*           | 100%*                   | 100%             | 100%             | 98%               | 100%              |
| <b>Stand Off® Stone, Tile &amp; Masonry Protector (STMP)</b> |                  |                |                |                 |                         |                  |                  |                   |                   |
|  | <b>Coca-Cola</b> | <b>Ketchup</b> | <b>Mustard</b> | <b>Red Wine</b> | <b>Balsamic Vinegar</b> | <b>Soy Sauce</b> | <b>Olive Oil</b> | <b>Wesson Oil</b> | <b>Hot Coffee</b> |
| <b>24 hr</b>   | 100%             | 70%            | 70%            | 98%*            | 100%                    | 100%             | 90%              | 80%               | 100%              |
| <b>4 hour</b>  | 100%             | 100%           | 70%            | 98%*            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>1 hour</b>  | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |
| <b>10 min.</b>   | 100%             | 100%           | 100%           | 100%            | 100%                    | 100%             | 100%             | 100%              | 100%              |

\*Indicates etching occurred due to the acidic nature of the staining agents.

**Photographs – Stain Repellency**

**“Rubble Timpangos”; Stains Applied**



**Untreated Control**

**Stand Off® SLX100 Water & Oil Repellent**

**Stand Off® Stone, Tile & Masonry Protector (STMP)**

**“Rubble Timpangos”; Stains Removed**



**Untreated Control**

**Stand Off® SLX100 Water & Oil Repellent**

**Stand Off® Stone, Tile & Masonry Protector (STMP)**

**Conclusions – Stain Repellency**

Based upon laboratory evaluations, both of the treatments evaluated improved the surface beading of the samples. In addition, both of the treatments evaluated improved the samples' resistance to the applied stains. In most cases, the treatments allowed less etching of the acidic staining agents.

**Recommendations – Stain Repellency**

Recommendations for stain resistance treatment for the manufactured stone submitted by Rocky Mountain Stone, Salt Lake City, UT are provided in the chart below. Recommendations are based on the treatments that proved most effective for providing stain repellency on the submitted samples.

| Sample                              | Stain Repellent  | Maintenance Cleaner                              |
|-------------------------------------|--|--|
| All Submitted<br>Manufactured Stone | Stand Off® SLX100 Water & Oil Repellent<br>OR<br>Stand Off® Stone, Tile & Masonry Protector (STMP) | Enviro Klean® 2010 All<br>Surface Cleaner (1:10) |

The ability of a stain repellent treatment to prevent staining is affected by a variety of factors. Therefore, on-site testing should be carried out for all installations with the recommended systems to ensure job site workmanship yields equivalent 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 stain repellent product and procedures for a particular project. See product literature for additional application and product information.



John Lancaster  
Project Testing Laboratory Technician



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Rocky Mountain Stone  
780 N Warm Springs Rd.  
Salt Lake City, UT 84116



*Project No. 0610-12 PTP*

*Prepared For:*  
**PROSOCO**  
SINCE 1939

*Prepared By:*  
AMT Laboratories  
January 2007

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