TABLE OF CONTENTS

SAMPLES SUBMITTED .......................................................................................................................... 2

PURPOSE OF TEST ............................................................................................................................. 3

PRODUCTS EVALUATED ....................................................................................................................... 3

SECTION A – ADVERSE EFFECTS

DESCRIPTION OF PRODUCTS EVALUATED ....................................................................................... 4

TEST METHODS .................................................................................................................................... 4

TEST RESULTS ...................................................................................................................................... 5

CONCLUSIONS ..................................................................................................................................... 6

RECOMMENDATIONS ......................................................................................................................... 6

SECTION B - PROTECTIVE WATER REPELLENTS

DESCRIPTION OF PRODUCTS EVALUATED ....................................................................................... 8

TEST METHODS .................................................................................................................................... 9

TEST RESULTS ...................................................................................................................................... 9

CONCLUSIONS ..................................................................................................................................... 10

RECOMMENDATIONS ......................................................................................................................... 10

ATTACHMENTS

SOP TEC015-1 RILEM Tube Testing

Technical Services TECH Note, RILEM Test Method No. II.4

Product Data sheets for tested products

Material Safety Data Sheets for tested products
FOR: André Limoges  
5096 Francois Cusson  
Lachine, Québec H8T 1B3

cc: Scott Buscher

SUBJECT: Groupe Tremca Inc.  
800 Boul Pierre Tremblay  
Iberville, Québec J2X 4W8

DATE: July 15, 1998

PROJECT: 9802-09 PC

SAMPLES SUBMITTED:
- Two new red concrete pavers
- Two new grey concrete pavers
- Two new brown concrete pavers  
  Size: 2 ¼” x 6” x 6”

- Two new red concrete pavers
- Two new grey concrete pavers
- Two new brown concrete pavers  
  Size: 2 ¼” x 6” x 7 ¼”

Submitted by: André Limoges  
5096 Francois Cusson  
Lachine, Québec H8T 1B3
PURPOSE OF TEST:

Samples of concrete pavers were submitted to ProSoCo’s Testing Laboratory with a request to determine if application of the cleaning products evaluated will produce any adverse effects during new construction cleaning operations. Additionally, the effectiveness of suitable water repellents will be evaluated.

A. Adverse Effects - Sure Klean® Custom Masonry Cleaner, and Sure Klean® 600 Detergent were tested at various dilutions to determine if they would produce adverse effects during the cleaning process. Adverse effects were evaluated visually and were based upon etching of the masonry unit or discoloration.

B. Protective Water Repellents – Consolideck® Saltguard®, Consolideck® Saltguard® WB and Stand Off® Color Enhancer were evaluated for their ability to provide water repellency to the submitted concrete pavers.

ADVERSE EFFECTS PRODUCTS EVALUATED:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Sure Klean® Custom Masonry Cleaner</th>
<th>Sure Klean® 600 Detergent</th>
</tr>
</thead>
<tbody>
<tr>
<td>All submitted paver samples</td>
<td>1:2</td>
<td>1:4</td>
</tr>
<tr>
<td>All submitted paver samples</td>
<td>1:4</td>
<td>1:6</td>
</tr>
<tr>
<td>All submitted paver samples</td>
<td>1:6</td>
<td>1:8</td>
</tr>
</tbody>
</table>

WATER REPELLENT PRODUCTS EVALUATED:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Consolideck® Saltguard®</th>
<th>Consolideck® Saltguard® WB</th>
<th>Stand Off® Color Enhancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>All submitted paver samples</td>
<td>concentrate</td>
<td>concentrate</td>
<td>concentrate</td>
</tr>
</tbody>
</table>
SECTION A – ADVERSE EFFECTS:

DESCRIPTION OF PRODUCTS EVALUATED – Adverse Effects:

**Sure Klean® Custom Masonry Cleaner** - A general purpose, concentrated acidic cleaner for concrete surfaces. Removes concrete splashes, excess mortar, mud, retarders, heavy efflorescence, embedded stains, rust and surface soiling from textured custom masonry surfaces. Liquid concentrate for dilution with 2-8 parts water. Apply by brush or low-pressure spray.

**Sure Klean® 600 Detergent** - A concentrated acidic cleaner for new masonry surfaces that are subject to vanadium, manganese and other metallic stains. Use on: grey, brown, white and most light-colored brick; natural stone; cast stone. Dissolves mortar smears and construction dirt quickly, leaving the masonry clean and uniform with no acid burning or streaking. Liquid concentrate for dilution with 4-6 parts water. Apply by brush or low-pressure spray.

====================================================================================

TEST METHODS - New Construction Cleaning

Dilution ratios refer to mixtures of concentrated cleaner: fresh water. Custom Masonry Cleaner was evaluated at dilutions of 1:2, 1:4 and 1:6, and 600 Detergent was evaluated at dilution of 1:4, 1:6 and 1:8, using the following procedure:

1. Prewet the surface with water.
2. Apply the cleaner at the appropriate dilution.
3. Allow a 5-minute exposure time for 600 Detergent and a 3-minute exposure time for Custom Masonry Cleaner.
4. Reapply the product 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 800 psi with a cold water flow rate of 2.1 gallons per minute.
### TEST RESULTS – Adverse Effects Evaluation:

#### Red Concrete Pavers

<table>
<thead>
<tr>
<th>Cleaner</th>
<th>Effect 1:2 dilution</th>
<th>Effect 1:4 dilution</th>
<th>Effect 1:6 dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom Masonry Cleaner</td>
<td>moderate removal of fines</td>
<td>slight removal of fines</td>
<td>very slight removal of fines</td>
</tr>
<tr>
<td>600 Detergent</td>
<td>moderate removal of fines</td>
<td>slight removal of fines</td>
<td>very slight removal of fines</td>
</tr>
</tbody>
</table>

#### Grey Concrete Pavers

<table>
<thead>
<tr>
<th>Cleaner</th>
<th>Effect 1:2 dilution</th>
<th>Effect 1:4 dilution</th>
<th>Effect 1:6 dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom Masonry Cleaner</td>
<td>very slight removal of fines</td>
<td>no adverse effects</td>
<td>no adverse effects</td>
</tr>
<tr>
<td>600 Detergent</td>
<td>very slight removal of fines</td>
<td>very slight removal of fines</td>
<td>very slight removal of fines</td>
</tr>
</tbody>
</table>

#### Brown Concrete Pavers

<table>
<thead>
<tr>
<th>Cleaner</th>
<th>Effect 1:2 dilution</th>
<th>Effect 1:4 dilution</th>
<th>Effect 1:6 dilution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Custom Masonry Cleaner</td>
<td>slight removal of fines</td>
<td>very slight removal of fines</td>
<td>very slight removal of fines</td>
</tr>
<tr>
<td>600 Detergent</td>
<td>slight removal of fines</td>
<td>very slight removal of fines</td>
<td>very slight removal of fines</td>
</tr>
</tbody>
</table>
CONCLUSIONS – Adverse Effects:

On the grey concrete pavers, application of 600 Detergent produced very slight removal of fines at all evaluated dilutions. Cleaning with Custom Masonry Cleaner resulted in very slight removal of fines when evaluated at a 1:2 dilution, however, no change in appearance occurred when evaluated at 1:4 and 1:6.


None of the observations that report a removal of fines would be considered an adverse effect. Cleaning procedures which incorporate an acidic cleaner and a cementitious substrate would be expected to result in the removal of the surface fines. Fine deposition at the surface is usually reflected by a lighter, pasty appearance. Typically, removal of the fines results in the cleaned surface reflecting the substrate’s true color and texture.

RECOMMENDATIONS – Adverse Effects:

Based on test results, Sure Klean® 600 Detergent and Sure Klean® Custom Masonry Cleaner at appropriate dilutions are recommended for job site testing to remove excess mortar, grout, job dirt and related new construction soiling on any of the submitted concrete paver samples.

To minimize potential for surface erosion or etching, remove excess mortar, grout, job dirt or similar cementitious staining as soon as practical. Apply all products in accordance with the manufacturers 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.
RECOMMENDED PRODUCTS AND DILUTIONS:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Sure Klean® Custom Masonry Cleaner</th>
<th>Sure Klean® 600 Detergent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Concrete Pavers</td>
<td>= 1:4</td>
<td>= 1:2</td>
</tr>
<tr>
<td>Grey Concrete Pavers</td>
<td>= 1:4</td>
<td>= 1:2</td>
</tr>
<tr>
<td>Brown Concrete Pavers</td>
<td>= 1:4</td>
<td>= 1:2</td>
</tr>
</tbody>
</table>
SECTION B - PROTECTIVE WATER REPELLENTS:

DESCRIPTIONS OF PRODUCTS EVALUATED - Protective Water Repellents:

**Consolideck® Saltguard®** - A general-purpose siloxane-based water repellent and chloride screen for concrete and masonry surfaces. Saltguard® protects horizontal and vertical surfaces from moisture intrusion and chemical attack of chloride salts, reducing rebar corrosion and surface spalling.

**Consolideck® Saltguard® WB** – A ready-to-use waterbased, silane/siloxane water repellent and chloride screen for the protection of concrete and masonry surfaces. Saltguard® WB penetrates more deeply than conventional water- or solvent-based water repellents. Low odor and alkaline stable, Saltguard® WB is ideal for field or in-plant applications. Saltguard® WB protects horizontal and vertical surfaces from moisture intrusion and chemical attack by chloride salts.

**Stand Off® Color Enhancer** – A water-based blend of high-quality silicones, modified to provide excellent water repellency and color enhancement to interlocking concrete, fired clay, porous tile and many types of natural stone surfaces. Stand Off® Color Enhancer penetrates and reacts with the surface to form a chemical bond, providing long-term durability, alkaline resistance and superior breathability.

=================================
SAMPLE PREPARATION - Protective Water Repellents:

The submitted concrete pavers were scored to separate testing areas, oven dried and allowed to reabsorb atmospheric humidity for 24 hours prior to treatment. Saltguard®, Saltguard® WB and Color Enhancer were applied in saturating wet-on-wet brush applications and allowed to cure for 7 days prior to testing.
TEST METHODS - Protective Water Repellents:

Water Absorption Tube Test: RILEM II.4, 2.5 milliliters, 20 minutes

The water absorption tube test simulating wind driven rain conditions was performed. Tests were run with 2.5-milliliter head pressures, which simulate an 83-mph dynamic wind pressure.

See SOP TEC015 and attached copy of RILEM II.4 Tech Note for additional information.

---

TEST RESULTS - Protective Water Repellents:

Water Absorption Tube Test: Rilem II.4, 2.5 milliliters, 20-Minutes

<table>
<thead>
<tr>
<th></th>
<th>Red Concrete Pavers</th>
<th>Grey Concrete Pavers</th>
<th>Brown Concrete Pavers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results</td>
<td>&gt; 2.5 milliliters</td>
<td>0.0 milliliters</td>
<td>0.7 milliliters</td>
</tr>
<tr>
<td>Untreated control</td>
<td></td>
<td>0.0 milliliters</td>
<td></td>
</tr>
<tr>
<td>Saltguard®</td>
<td></td>
<td>0.0 milliliters</td>
<td>0.0 milliliters</td>
</tr>
<tr>
<td>Saltguard® WB</td>
<td></td>
<td>0.1 milliliters</td>
<td></td>
</tr>
<tr>
<td>Color Enhancer</td>
<td></td>
<td>0.0 milliliters</td>
<td>0.0 milliliters</td>
</tr>
</tbody>
</table>
CONCLUSIONS - Protective Water Repellents:

Saltguard®, Saltguard® WB and Color Enhancer all provided excellent water repellency to the submitted concrete pavers.

RECOMMENDATIONS - Protective Water Repellents:

Select the desired product for each concrete paver type from the following table and apply all products in accordance with recommendations provided on container labels and product data sheets.

WATER REPELLENT PRODUCTS RECOMMENDED:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Consolideck® Saltguard®</th>
<th>Consolideck® Saltguard® WB</th>
<th>Stand Off® Color Enhancer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red Concrete Pavers</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Grey Concrete Pavers</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Brown Concrete Pavers</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

C. Ryan Winders  
Technical Services Analyst

CRW/tdh
Laboratory Report

Pallet Card Evaluation

Groupe Tremca Inc.
Iberville, Quebéc J2X 4W8

Project No. 9802-09 PC

Prepared For:

André Limoges
5096 Francois Cusson
Lachine, Quebec H8T 1B3

Prepared By:

ProSoCo, Inc.
July, 1998