



# PALLET CARD PROGRAM LABORATORY REPORT



## 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

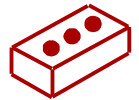
RECOMMENDATIONS ..... 10

### 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



# PALLET CARD PROGRAM LABORATORY REPORT



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Page 2

**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



# PALLET CARD PROGRAM LABORATORY REPORT



## 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<sup>®</sup> Custom Masonry Cleaner, and Sure Klean<sup>®</sup> 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<sup>®</sup> Saltguard<sup>®</sup>, Consolideck<sup>®</sup> Saltguard<sup>®</sup> WB and Stand Off<sup>®</sup> Color Enhancer were evaluated for their ability to provide water repellency to the submitted concrete pavers.

## ADVERSE EFFECTS PRODUCTS EVALUATED:

Sample	Sure Klean <sup>®</sup> Custom Masonry Cleaner	Sure Klean <sup>®</sup> 600 Detergent
All submitted paver samples	1:2	1:4
All submitted paver samples	1:4	1:6
All submitted paver samples	1:6	1:8

## WATER REPELLENT PRODUCTS EVALUATED:

Sample	Consolideck <sup>®</sup> Saltguard <sup>®</sup>	Consolideck <sup>®</sup> Saltguard <sup>®</sup> WB	Stand Off <sup>®</sup> Color Enhancer
All submitted paver samples	concentrate	concentrate	concentrate



# PALLET CARD PROGRAM LABORATORY REPORT



## 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.

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### 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.



# PALLET CARD PROGRAM LABORATORY REPORT



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Page 5

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## TEST RESULTS – Adverse Effects Evaluation:

### Red Concrete Pavers

#### Custom Masonry Cleaner

1:2 dilution

1:4 dilution

1:6 dilution

#### Effects

moderate removal of fines  
slight removal of fines  
very slight removal of fines

#### 600 Detergent

1:4 dilution

1:6 dilution

1:8 dilution

moderate removal of fines  
slight removal of fines  
very slight removal of fines

### Grey Concrete Pavers

#### Custom Masonry Cleaner

1:2 dilution

1:4 dilution

1:6 dilution

#### Effects

very slight removal of fines  
no adverse effects  
no adverse effects

#### 600 Detergent

1:4 dilution

1:6 dilution

1:8 dilution

very slight removal of fines  
very slight removal of fines  
very slight removal of fines

### Brown Concrete Pavers

#### Custom Masonry Cleaner

1:2 dilution

1:4 dilution

1:6 dilution

#### Effects

slight removal of fines  
very slight removal of fines  
very slight removal of fines

#### 600 Detergent

1:4 dilution

1:6 dilution

1:8 dilution

slight removal of fines  
very slight removal of fines  
very slight removal of fines



# PALLET CARD PROGRAM LABORATORY REPORT



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## 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.

**600 Detergent** evaluated at 1:4 on the brown concrete pavers, produced a slight removal of fines and a very slight removal of fines at dilutions of 1:6 and 1:8. Cleaning with **Custom Masonry Cleaner** resulted in a slight removal of fines at a 1:2 dilution, and very slight removal of fines at 1:4 and 1:6 dilutions.

On the red concrete pavers, **600 Detergent** produced moderate removal of fines at a 1:4 dilution, slight removal of fines at a 1:6 dilution and very slight removal of fines at a 1:8 dilution. **Custom Masonry Cleaner** produced moderate removal of fines at a 1:2 dilution, slight removal of fines at a 1:4 dilution and very slight removal of fines at a 1:8 dilution.

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.

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## RECOMMENDATIONS – Adverse Effects:

Based on test results, **Sure Klean<sup>®</sup> 600 Detergent** and **Sure Klean<sup>®</sup> 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.



# PALLET CARD PROGRAM LABORATORY REPORT



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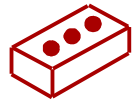
Page 7

## RECOMMENDED PRODUCTS AND DILUTIONS:

Sample	Sure Klean <sup>®</sup> Custom Masonry Cleaner	Sure Klean <sup>®</sup> 600 Detergent
Red Concrete Pavers	= 1:4	= 1:2
Grey Concrete Pavers	= 1:4	= 1:2
Brown Concrete Pavers	= 1:4	= 1:2



# PALLET CARD PROGRAM LABORATORY REPORT



## 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.





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## 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

#### Red Concrete Pavers

	<u>Results</u>
Untreated control	> 2.5 milliliters
Saltguard <sup>®</sup>	0.0 milliliters
Saltguard <sup>®</sup> WB	0.0 milliliters
Color Enhancer	0.1 milliliters

#### Grey Concrete Pavers

	<u>Results</u>
Untreated control	> 2.5 milliliters
Saltguard <sup>®</sup>	0.0 milliliters
Saltguard <sup>®</sup> WB	0.1 milliliters
Color Enhancer	0.0 milliliters

#### Brown Concrete Pavers

	<u>Results</u>
Untreated control	0.7 milliliters
Saltguard <sup>®</sup>	0.0 milliliters
Saltguard <sup>®</sup> WB	0.0 milliliters
Color Enhancer	0.0 milliliters



# PALLET CARD PROGRAM LABORATORY REPORT



## CONCLUSIONS - Protective Water Repellents:

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

## RECOMMENDATIONS - Protective Water Repellents:

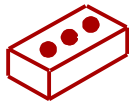
Select the desired product for each concrete paver type from the following table and apply all products in accordance with recommendations provided on container labels and product data sheets.

### WATER REPELLENT PRODUCTS RECOMMENDED:

Sample	Consolideck <sup>®</sup> Saltguard <sup>®</sup>	Consolideck <sup>®</sup> Saltguard <sup>®</sup> WB	Stand Off <sup>®</sup> Color Enhancer
Red Concrete Pavers	✓	✓	✓
Grey Concrete Pavers	✓	✓	✓
Brown Concrete Pavers	✓	✓	✓

\_\_\_\_\_  
C. Ryan Winders  
Technical Services Analyst

CRW/tdh



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**Laboratory Report**

**Pallet Card Evaluation**

**Groupe Tremca Inc.  
Iberville, Québec J2X 4W8**

**Project No. 9802-09 PC**

**Prepared For:**

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**Prepared By:**



**ProSoCo, Inc.  
July, 1998**