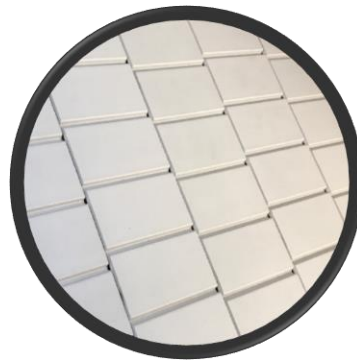




*Pallet Tag Program  
Laboratory Report*

**Acme Brick Company**  
Fort Worth, TX



*Project No. 1903-07 PTP*

***Prepared For:***



**PROSOCO**

***Prepared By:***

*J. Lucas Comadoll*

J. Lucas Comadoll  
Project Testing Technician  
AMT Laboratories

May 2019



# LABORATORY REPORT

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**FOR:** Bob Carter, Acme Brick Company  
**cc:** Bob Holmes  
Jake Boyer, PROSOCO, Inc.  
Al Morris, PROSOCO, Inc.

**SUBJECT:** Acme Brick Company  
Fort Worth, TX  
Pallet Tag Evaluation

**DATE:** May 8, 2019  
**PROJECT:** 1903-07 PTP

**SAMPLES SUBMITTED:**

Sample	Name	Color	Size
(5) Glazed Acme TC Cladding Terracotta Panels with an Engobe Finish	"FGY4521001"	White	24" x 12" x 0.375"

**SUBMITTED BY:** Bob Carter  
Acme Brick Company  
3024 Acme Brick Plaza  
Fort Worth, TX 76109

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**PURPOSE OF TEST:**

- To determine if Enviro Klean® 2010 All Surface Cleaner causes any adverse effects to the submitted terracotta panels.
- To measure the water absorption of the submitted panels.
- To determine the effectiveness of appropriate PROSOCO, Inc. products in the removal of graffiti staining on the submitted panels.
- To determine the effectiveness of the submitted panels in resisting food and oil staining.

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**PRODUCTS EVALUATED:**

<b>Maintenance Cleaning</b>	<b>Dilution:</b>
Enviro Klean® 2010 All Surface Cleaner	1:10

<b>Graffiti Removal</b>	<b>Dilution:</b>
Defacer Eraser® Graffiti Remover	N/A*
Enviro Klean® SafStrip®	N/A*

**\*NOTE: Per the product data sheet instructions, only use the product in concentrate. Do not dilute.**

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**TEST METHODS: Maintenance Cleaning**

Enviro Klean® 2010 All Surface Cleaner was evaluated to determine if the cleaner leaves the external surface looking like the uncleaned surface of the terracotta panel.

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

**Substrate Deterioration** is the visual examination of the sample comparing the uncleaned surface 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 uncleaned surface to the 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.

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

- 0 – **No change** compared to uncleaned surface
- 1 – **Slight change** compared to uncleaned surface
- 2 – **Moderate change** compared to uncleaned surface
- 3 – **Significant change** compared to uncleaned surface

**Cleaning Procedure:**

1. Pre-wet the surface and apply diluted cleaning solution according to PROSOCO, Inc. Product Data Sheet instructions.
2. Allow for an appropriate dwell time:  
2010 All Surface Cleaner .....3 minutes
3. Reapply cleaning solution; do not let cleaner dry into terracotta panel.
4. Rinse thoroughly with plenty of fresh water.\*
5. Allow the sample to dry for at least 18 hours and visually examine.
6. Compare the uncleaned surfaces to the cleaned surfaces for the best match.

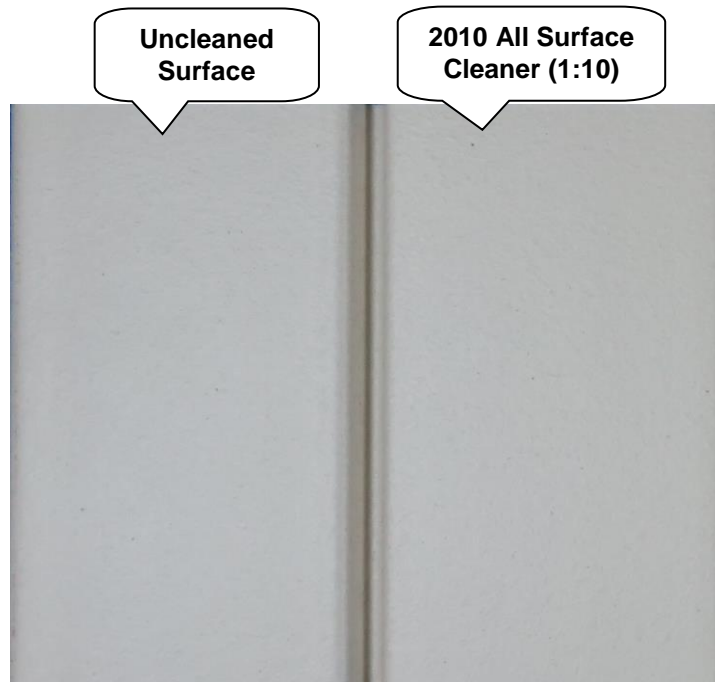
**\*Rinsing Equipment** – Masonry washing equipment generating approximately 700-800 psi with a water flow rate of 8 gallons per minute delivered through a 45 degree fan spray tip was used for rinsing.

**TEST RESULTS AND PHOTOGRAPHS: Maintenance Cleaning**

Scale used for reporting results of both categories:
0 – <b>No change</b> compared to uncleaned surface
1 – <b>Slight change</b> compared to uncleaned surface
2 – <b>Moderate change</b> compared to uncleaned surface
3 – <b>Significant change</b> compared to uncleaned surface

<b>Name:</b> "White" Terracotta Panel					
<b>Product</b>	<b>Dilution</b>	<b>Surface Finish Removal</b>	<b>Substrate Deterioration</b>	<b>Color Change</b>	<b>Staining</b>
2010 All Surface Cleaner	1:10	0	0	0	0

**"White" Terracotta Panel After Cleaning**





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## CONCLUSIONS – Maintenance Cleaning

In the cleaning test conducted, Enviro Klean® 2010 All Surface Cleaner diluted with ten parts water caused no change to the appearance of the submitted terracotta panels.

It is recommended that the selected cleaners always be used in the lowest possible concentration.

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## RECOMMENDATIONS: Maintenance Cleaning

Recommendations for maintenance cleaning for the terracotta panels submitted by Acme Brick Company, Fort Worth, TX are provided in the chart below.

Sample	Maintenance Cleaning
"White" Terracotta Panel	Enviro Klean® 2010 All Surface Cleaner (1:10)

The most appropriate cleaner and dilution should be determined on the specific job-site, and will be dependent primarily on the nature and severity of soiling present at that location.

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

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**TEST METHODS: Water Absorption**

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

The water absorption tube test simulating wind driven rain conditions was performed on the submitted terracotta panels. Tests were run with 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.

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**TEST RESULTS: Water Absorption**

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

**AA** = Above Average    **A** = Average    **BA** = Below Average

<b>"White" Terracotta Panel</b>	<b>Results in mL loss</b>	<b><u>Ranking</u></b>
Untreated Sample	-0.0	--

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**CONCLUSIONS: Water Absorption**

Based on the laboratory evaluation, the terracotta panel did not absorb any water during the RILEM tube tests.



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**TEST METHODS: Graffiti Removal**

This evaluation compares the effectiveness of graffiti removal products.

Spray paint and markers were applied as graffiti agents to the untreated sample. Removal of the graffiti agents was attempted 24 hours after application of the graffiti agents, using Enviro Klean® SafStrip® and Defacer Eraser® Graffiti Remover.

Chemical cleaners were evaluated using the following procedure:

1. Apply the product to a dry surface, soiled with graffiti.
2. Allow appropriate dwell time:
  - SafStrip..... 30 minutes
  - Graffiti Remover ..... 5 minutes
3. 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 AND PHOTOGRAPHS: Graffiti Removal**

"White" Terracotta Panel					
Untreated Sample	Red Paint	Black Marker	Red Marker	Blue Marker	% Avg. Removal
SafStrip®	98%	100%	100%	100%	<b>100%</b>
Graffiti Remover	90%	100%	100%	100%	<b>98%</b>

**"White" Terracotta Panel With Graffiti**



**Untreated Sample**

**"White" Terracotta Panel After Graffiti Testing**



**Untreated Sample**

**KEY**

**1 = SafStrip®**

**2 = Graffiti Remover**



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**CONCLUSIONS: Graffiti Removal**

Based upon laboratory evaluations, both graffiti removal products proved effective in removing the applied graffiti from the terracotta panels.

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**RECOMMENDATIONS: Graffiti Removal**

Recommendations for graffiti removal for the terracotta panels submitted by Acme Brick Company, Fort Worth, TX are provided in the chart below.

<b>Sample</b>	<b>Graffiti Removers</b>
"White" Terracotta Panel	Enviro Klean® SafStrip® OR Defacer Eraser® Graffiti Remover

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 removal product and procedure for a particular project.

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## TEST METHODS: Surface Beading Evaluation

### Food and Oil Products Evaluated for Stain Testing:

Coca Cola  
Ketchup  
Mustard  
Red wine  
Balsamic vinegar  
Soy sauce  
Olive oil  
Wesson oil  
Coffee

### Temperature:

ambient (~70°F)  
ambient (~70°F)  
ambient (~70°F)  
ambient (~70°F)  
ambient (~70°F)  
ambient (~70°F)  
ambient (~70°F)  
250°F  
120°F

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°) 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.

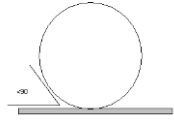
Note: Non-free flowing staining agents such as ketchup and mustard are applied in a blob and not evaluated for their beading properties.

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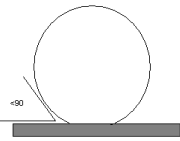
## TEST METHODS: Surface Beading Evaluation (cont.)

### Rating System (1-5)

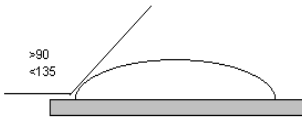
1. No wetting of contact area (no darkening); angle less than  $90^\circ$



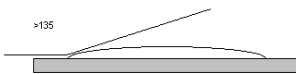
2. Wetting contained to the contact area (slight darkening); angle is less than  $90^\circ$



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.



**TEST RESULTS: Surface Beading Evaluation**

	Untreated
<b>Coca Cola</b>	3
<b>Ketchup</b>	N/A
<b>Mustard</b>	N/A
<b>Red Wine</b>	3
<b>Balsamic Vinegar</b>	3
<b>Soy Sauce</b>	3
<b>Olive Oil</b>	4
<b>Wesson Oil</b>	4
<b>Hot Coffee</b>	3

N/A – non-free flowing staining agent

**TEST METHODS: Stain Resistance Evaluation**

The soiling agents were allowed to dwell on the untreated substrate for times of 24 hours, 4 hours, 1 hour, and 10 minutes. The test area was then cleaned with Enviro Klean® 2010 All Surface Cleaner diluted with ten parts water and scrubbed under a stream of running water. The sample was 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 AND PHOTOGRAPHS: Stain Resistance Evaluation**

**“White” Terracotta Panel**

% Removal

Untreated Sample									
	Cola	Ketch.	Must.	Red Wine	Bals. Vin.	Soy Sauce	Olive Oil	Wess. Oil	Coffee
<b>24 hour</b>	100%	70%	50%	100%	100%	100%	100%	100%	100%
<b>4 hour</b>	100%	100%	100%	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%

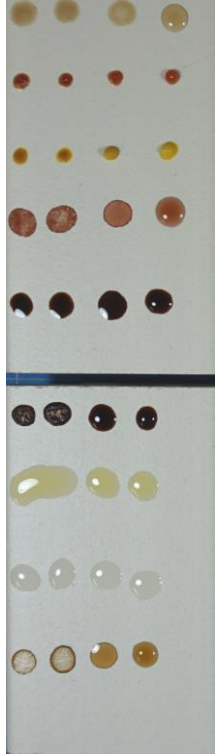
% Removal of stain following maintenance cleaning.

\* Indicates etching of surface treatment due to the acidic nature of the staining agent.

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**TEST RESULTS AND PHOTOGRAPHS: Stain Resistance Evaluation (cont.)**

**“White” Terracotta Panel With Stains**



**“White” Terracotta Panel After Stains**



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**CONCLUSIONS: Surface Beading and Stain Resistance**

In the surface beading evaluation, the untreated terracotta panel displayed “average” repellency based on the angle of contact with each stain.

In the stain resistance tests conducted, Enviro Klean® 2010 All Surface Cleaner was effective at cleaning the applied stains and the untreated terracotta panel proved very effective at repelling the applied stains.

*J. Lucas Comadoll*

J. Lucas Comadoll  
Project Testing Technician

**ALL SAMPLES SUPPLIED FOR THE ABOVE EVALUATION WILL BE DISPOSED OF THIRTY (30) DAYS AFTER THE ISSUE DATE OF THIS REPORT. IF SAMPLES ARE TO BE RETAINED FOR ADDITIONAL TESTING OR RETURNED TO THE SENDER, PROVIDE WRITTEN INSTRUCTIONS TO THE LABORATORY WITHIN THIRTY (30) DAYS OF THE ISSUE DATE OF THIS REPORT.**

Recommendations made within this report are based on laboratory test applications and observations. Final determination of the suitability of a product and/or procedure should be made only after thorough job testing on actual surfaces.