

# Energy Cured ProShine Coating Systems

Connfield Floors

Route 66 Marketing LLC



## ProShine Energy Cured Coating Has Proven To:

- Show through independent testing a reduction of E.Coli by 95% and Staph Aureus by 84% after 24 hours.
- Increased Floor Crew production by 76%
- Shown an increase of Air, Soil, and Water sustainability by 80%
- Increased throughput in ER allowing maximum census by midnight.
- ProShine has slip coefficient of .8
- Maintenance free for 12-18 months +





# Connfield Floors Inc.

*Special Coatings for Sheet Vinyl, Linoleum, Terrazzo, Rubber and VCT*

To All Concern:

The following microbiological analysis report was performed by Biosan Laboratories, Inc. The goal was to determine whether Connfield Floors Inc. energy cured Pro-Shine coating would provide protection from denigration to flooring caused by bacteria when compared to a well-known conventional floor finish used in healthcare environments.

The following are the results of those tests.

## Test Samples Submitted

VCT coated with conventional floor finish and Pro-Shine

## Test Method

JIS Z 2801:2010, Japanese Industrial Standard Test for Antimicrobial Activity and Efficacy in Antimicrobial Products, was followed. Specifics of the test method applied to this project are described below.

## Overview of Test Protocol

This test method is designed to evaluate (quantitatively) the antimicrobial effectiveness of agent(s) incorporated or bound into or onto mainly flat (two dimensional) hydrophobic or polymeric surfaces.

## Test Sample Identification

Lab ID		
13097	Sample ID	Pro-Shine
Control	Sample ID	Conventional Floor Finish

## Organisms Used

Staphylococcus aureus ATCC #6538f  
Escherichia coli ATCC #8739f

## Test Protocol Provided by Biosan

Submitted samples were inoculated with 0.4 ml of a 0.2% nutrient broth seeded with a standardized culture of the test organism in triplicate. The inoculated samples were covered with an inert film and incubated at  $36 \pm 2^{\circ}\text{C}$  in a humidity chamber for 24 hours. Surviving microorganisms were recovered via elution of the broth inoculum from the test sample into neutralizing broth. Microbial counts of the samples were determined and the percent reduction of microorganisms (treated versus untreated samples at time point) was calculated.

**Connfield Floors** (submitted as Multi-Clean)  
**Microbiological Analysis Report**

Project No: **13097****Results**

Tables 1 and 2 show the microbial resistance test results.

**Conclusions**

Connfield Floors (submitted as Multi-Clean) sample UV Pro-Shine (submitted as Pro-Shine) showed antimicrobial activity against *Escherichia coli* after 24 hours in the JIS Z 2801 test method with 84.84% reduction and an antimicrobial activity value of 0.82. UV Pro-Shine (submitted as Pro-Shine) showed 94.91% reduction and an antimicrobial activity value of 1.29 against *Staphylococcus aureus* after 24 hours. Percent reduction and antimicrobial activity were calculated against the control at the 24 hour timepoint.

*Silveria Cristo*  
Microbiologist

*Jason Kircos*  
Laboratory Manager

**Connfield Floors** (submitted as Multi-Clean)  
**Microbiological Analysis Report**

 Project No: 13097

Test Method: JIS Z 2801:2010

Table 1. Recovered Organisms from controls at Time = 0 hours

Lab Identification	<i>Escherichia coli</i> ATCC# 8739 cells/cm <sup>2</sup>
Control	3.51 x 10 <sup>4</sup>

Table 2. Recovered Organisms from controls and samples at Time = 24 hours

Lab Identification	<i>Escherichia coli</i> ATCC# 8739 cells/cm <sup>2</sup>	% Reduction	Antimicrobial Activity
Control	2.70 x 10 <sup>4</sup>	n/a	n/a
13097	4.09 x 10 <sup>3</sup>	84.84%	0.82

**Connfield Floors** (submitted as Multi-Clean)  
**Microbiological Analysis Report**

Project No: **13097**

Test Method: JIS Z 2801:2010

**Table 1. Recovered Organisms from controls at Time = 0 hours**

Lab Identification	<i>Staphylococcus aureus</i> ATCC #6538 cells/cm <sup>2</sup>
Control	2.58 x 10 <sup>4</sup>

**Table 2. Recovered Organisms from controls and samples at Time = 24 hours**

Lab Identification	<i>Staphylococcus aureus</i> ATCC #6538 cells/cm <sup>2</sup>	% Reduction	Antimicrobial Activity
Control	2.51 x 10 <sup>3</sup>	n/a	n/a
13097	1.28 x 10 <sup>2</sup>	94.91%	1.29

# Shoe Sole and Floor Contamination: A New Consideration in the Environmental Hygiene Challenge for Hospitals



October 31, 2018

[Environmental Hygiene, Transmission Prevention](#)



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By Kelly M. Pyrek

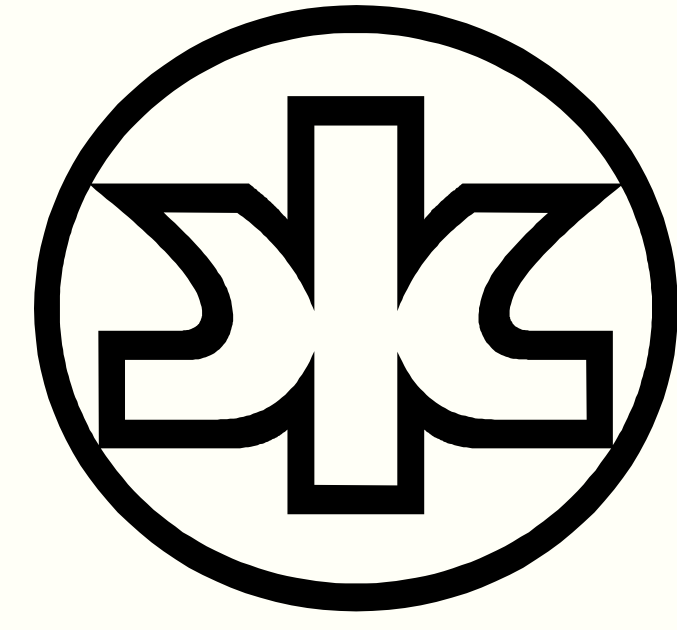
*Editor's note: This is the first in a series on fomites in the healthcare environment that are under the radar but deserve renewed attention.*

It sounds like the beginnings of a riddle: What do we wear and walk on daily but never truly think about, especially in terms of pathogen transmission? Shoe soles and healthcare facility floors are the workhorses of the environment, and yet their capacity for aiding and abetting infectious agents remains unclear. Recent research seems to confirm what common sense already tells us -- that items which contact the floor are contaminated and could serve as vectors; despite daily cleaning of high-touch surfaces such as floors, it has already been shown that bacterial and viral contamination returns rather quickly.

# Microbial Load of Reusable Cleaning Towels used in Hospitals

Laura Y. Sifuentes<sup>1</sup>, Peter K. Raisanen<sup>1</sup>, Charles P. Gerba<sup>1</sup>, David W. Koenig<sup>2</sup> and Ilona Weart<sup>3</sup>

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## ABSTRACT

Hospital cleaning practices play a critical role in the prevention of nosocomial infection transmission. To this end, reusable towels soaked in disinfectants are commonly used to clean and disinfect hospital surfaces. There are reports linking reusable cleaning towels to the outbreak of *Bacillus cereus*. It is known that reusable towels can interfere with the action of commonly used quaternary ammonium disinfectants. It is therefore important to understand if reusable towels can increase the risk for the transmission of pathogens in the hospital. The objective of this study was to investigate the prevalence of bacteria and fungi in reusable cleaning towels.

Reusable towels used for cleaning hospital rooms contained high numbers of microbial contaminants. Hospital laundering practices in this study appear to be either insufficient to remove microbial contaminants or even add contaminants to the towels. Furthermore, towels are known to interfere with the action of common hospital grade disinfectants. Independently and together these two factors may increase the risk for transmission of pathogens in the hospital. Importantly, these observations point to the need to critically re-evaluate current hospital cleaning practices associated with the use of reusable towels.

## MATERIALS AND METHODS

**Hospital survey.** Ten hospitals were surveyed regarding their cleaning practices after terminal discharge and the use of disinfectants.

**Collection of towels.** Laundered reusable cleaning towels were collected in triplicate from each hospital. Each collected towel was submerged in buffered peptone water (EMD Chemicals, Gibbstown, NJ) to extract microbes. The peptone broth was extracted from the towel by ringing the liquid out. The extract was assayed on selected media for the isolation of the various bacteria and fungi.

**Sampling of soak buckets.** The buckets used to soak the towels in disinfectants were sampled for 9 of the 10 hospitals. Each soak bucket was swabbed with a Sponge-Stick™ Swabs (3M™, St. Paul, MN) right above the disinfectant liquid line. Microbes were eluted from the Sponge-Stick™ Swabs in letheen broth with agitation. The extract was assayed on selected media for the isolation of the various bacteria and fungi.

**Enumeration of target organisms.** Quantitative plate count methods were used to determine the presence of heterotrophic bacteria, total coliform, aerobic spore formers, fungi, *Staphylococcus aureus*, methicillin resistant *S. aureus* (MRSA), *Escherichia coli*, and *Clostridium difficile*.

**Identification of organisms.** API® strips (bioMérieux, Durham, NC).



Hospital cleaning cart with a soak bucket and reusable cotton towels.



## RESULTS

### Numbers of Towels and Soak Buckets Positive for Microbes

	Viable Microbes	Total Coliform	<i>E. coli</i>	Aerobic Spore Formers	Fungi
<b>Towels</b>	28/30 <sup>a</sup> (93%) <sup>b</sup>	7/30 (23%)	1/30 (3%)	17/30 (56%)	4/30 (13%)
<b>Soak Buckets</b>	6/9 (67%)	1/9 (12%)	ND	4/9 (44%)	ND

ND = Not detected

<sup>a</sup> Number positive per number sampled

<sup>b</sup> Percent positive

### Microbial Contamination on Reusable Cleaning Towels (Mean log CFU/Towel ± SD; n=3)

Hospital	Heterotrophic Bacteria	Total Coliform	Aerobic Spore Formers	Fungi
1	4.1 ± 0.2	0.5 ± 0.5	3.3 ± 0.2	0.9 ± 1.6
2	1.1 ± 1.9	ND	1.7 ± 1.5	ND
3	3.8 ± 0.8	0.3 ± 0.5	1.0 ± 1.7	ND
4	3.9 ± 0.3	ND	1.0 ± 1.7	ND
5	3.5 ± 0.6	ND	1.9 ± 1.6	ND
6	5.0 ± 0.1	1.3 ± 0.5	3.6 ± 0.3	3.3 ± 0.3
7	3.0 ± 0.1	ND	ND	ND
8	3.7 ± 0.5	ND	1.5 ± 1.3	ND
9	3.8 ± 0.1	ND	3.9 ± 0.6	ND
10	2.3 ± 2.0	ND	ND	ND

ND = Not detected

### Microbial Contamination on Soak Buckets (CFU/100cm<sup>2</sup>; n=9)

Parameter	Heterotrophic Bacteria	Total Coliform	Aerobic Spore Formers
<b>Mean</b>	269	0.15	153
<b>Max</b>	1300	1.3	1320
<b>Min</b>	ND	ND	ND

ND = Not detected

### Bacteria Identified on Towels and Soak Buckets

<i>Aeromonas hydrophilica</i>	<i>Pantoea</i> spp
<i>Escherichia coli</i>	<i>Pasteurella pneumotropica</i>
<i>Klebsiella oxytoca</i>	<i>Pseudomonas luteola</i>
<i>Klebsiella pneumoniae</i>	<i>Serratia plymuthica</i>
<i>Micrococcus luteus</i>	<i>Vibrio fluvialis</i>
<i>Moellerella wisconsensis</i>	

Methicillin resistant *Staphylococcus aureus* (MRSA) and *Clostridium difficile* were not isolated from any of the towels or soak buckets.

### Impact of Towel Material on Contamination (log CFU/Towel ± SD)

	Cotton		Microfiber		p-value <sup>a</sup>
	n	Mean	n	Mean	
<b>Heterotrophic Bacteria</b>	24	3.17 ± 1.29	6	4.39 ± 0.88	0.0381
<b>Total Coliform</b>	24	0.07 ± 0.23	6	0.78 ± 0.70	0.0002
<b>Aerobic Spore Formers</b>	24	1.66 ± 1.63	6	2.28 ± 1.80	0.4152
<b>Fungi</b>	24	0.12 ± 0.58	6	1.67 ± 1.84	0.0012

<sup>a</sup>Multiple analyses of variance with a rejection region of 5% using the F distribution

## SUMMARY

- Reusable cleaning towels used for cleaning and disinfecting hospital rooms contain microbial contaminants.
  - Both cotton and microfiber towels harbored microbial contaminants.
  - Microfiber towels contained significantly more bacteria than cotton towels.
  - 93% of the towels sampled contained viable microbes.
  - 56% of the towels sampled contained spores.
  - 23% of the towels sampled contained coliforms.
  - 3% of the towels sampled contained *E. coli*.
  - 67% of the soak buckets sampled harbored viable bacteria.
  - 44% of the soak buckets sampled harbored bacterial spores.
- Typical hospital laundering practices are not sufficient to remove microbial contaminants in towels whether sent out to a central laundering facility or laundered in house.
- Although hospital grade disinfectants show efficacy against the microorganisms found in the towels, it appears that treatment practices should be re-evaluated.



Bed Out, Bed In Scrub And Recoat Time 1:41 min.





## Connfield Floors Inc.

UV Cured Coatings for Vinyl - Rubber - Linoleum - Terrazzo

### UV Pro Coating Systems- Cost Calculator Instructions

*Calculations are based on ISSA standards and industry experience*

This tool can be used for cost comparisons between conventional floor-care maintenance and UV Pro Coating Systems.

Values are based on ISSA standards and direct information from our customers.

The results of this tool found on page 3, is based on the information provided below.

It is not necessary to change any of the numbers on the Calculations or Results page.

#### **Step 1. Enter all relevant data below, including:**

10,000	Area Size (ft2)
52	Burnishing frequency, number of times per year, (5x's wkly=260 x's per yr)(2 x's wkly=104 x's per yr) etc.
3	Scrub and re-coat frequency (per year)
1	Strip and re-coat frequency (per year)
18.50	Conventional finish Cost/Gallon
15.00	Conventional stripper Cost/Gallon
30.00	Floor care labor cost/hour. Use a fully loaded rate - often an additional 25-50% of the hourly rate.

#### **Step 2. Determine costs for the following:**

40.00	UV Pro Primer Cost/Gallon
440.00	UV Pro Product Cost/Gallon
800	UV Pro Product Coverage - ft2 / gal
1200	UV Pro Product Coverage Restoration Applications - ft2 / gal

**Step 3. Review the calculations to evaluate savings projected over a 5 year period.**

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# Connfield Floors Inc.

UV Cured Coatings for Vinyl - Rubber - Linoleum - Terrazzo

## UV Pro Coating Systems vs. Conventional Floor Finish

	Year 1	Year 2	Year 3	Year 4	Year 5	Total	Labor Cost	Product Cost	Total
<b>Conventional Floor Finish</b>									
Initial application	1					1	\$ 1,080.00	\$ 925.00	
Burnishing	52	52	52	52	52	260	\$ 5,200.00	N/A	
Scrub/Re-coat	3	3	3	3	3	15	\$ 11,439.00	\$ 9,250.00	
Strip/Re-coat	1	1	1	1	1	5	\$ 7,275.00	\$ 5,375.00	
<b>Total</b>							\$ 24,994.00	\$ 15,550.00	\$ 40,544.00
<b>UV Pro Coating System</b> (suggested UV Pro application frequency is 18 months)									
Initial application	1					1	\$ 900.00	\$ 6,013.00	
Restoration- Scrub with special prep pad and recoat	0	0.5	0.5	0.5	0.5	2	\$ 2,400.00	\$ 7,593.33	
<b>Total</b>							\$ 3,300.00	\$ 13,606.33	\$ 16,906.33

Percent Change:	-86.8%	-12.5%	-58.3%
Estimated Savings - 5 Years			

Area Size (square footage)	10,000				
Floor Care Labor Cost/Hour	\$ 30.00				
UV Pro Coating System (\$\$ / gal UV & Primer)	\$ 480.00	\$ 440.00	\$ 440.00	\$ 440.00	\$ 440.00
Coverage of UV Pro Coating System(ft2 / gal)	800	1200	1200	1200	1200
Conventional finish Cost/Gallon	\$ 18.50				
Conventional stripper Cost/Gallon	\$ 15.00				

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# Connfield Floors Inc.

UV Crued Coatings for Vinyl - Rubber - Linoleum - Terrazzo

## UV Pro Coating Cost Calculator - Results

Based on the following input for **10,000** square feet of flooring:

Floors are burnished **52** times per year.  
 Floors are scrubbed and re-coated an average of **3** times per year.  
 Floors are stripped an average of **1** time(s) per year.

And the following cost parameters:

Floor Care Labor Cost/Hour \$ **30.00**  
 UV Pro Cost (per gallon) \$ **480.00**  
 Conventional finish cost/gallon \$ **18.50**  
 Conventional stripper cost/gallon \$ **15.00**

The below savings in floor care costs over 5 years using the UV Pro System:

Labor cost is expected to decline by: **86.8%** or **\$21,694**  
 For a total estimated cost savings of: **58.3%** or **\$23,638**

MAINTENANCE COST		Conventional		UV Pro Coating System	
Task	Labor	Product	Labor	Product	
Initial Application	\$ 1,080	\$ 925	\$ 900	\$ 6,013	
Burnishing	\$ 5,200	N/A	-	-	
Scrub & Recoat	\$ 11,439	\$ 9,250	-	-	
Strip & Refinish	\$ 7,275	\$ 5,375	-	-	
Restoration			\$ 2,400	\$ 7,593	
<b>Totals</b>	<b>\$ 24,994</b>	<b>\$ 15,550</b>	<b>\$ 3,300</b>	<b>\$ 13,606</b>	
<b>Total Costs</b>	<b>\$ 40,544</b>	<b>Conventional</b>	<b>\$ 16,906</b>	<b>UV Pro Coatings</b>	

SQUARE FOOT COST		Conventional		UV Pro Coating System	
Task	Labor	Product	Labor	Product	
Initial Application	\$ 0.108	\$ 0.093	\$ 0.090	\$ 0.601	
Burnishing	\$ 0.520	N/A	-	-	
Scrub & Recoat	\$ 1.144	\$ 0.925	-	-	
Strip & Refinish	\$ 0.728	\$ 0.538	-	-	
Restoration			\$ 0.240	\$ 0.759	
<b>Totals</b>	<b>\$ 2.499</b>	<b>\$ 1.555</b>	<b>\$ 0.330</b>	<b>\$ 1.361</b>	
<b>Total Sq Ft Costs</b>	<b>\$ 4.054</b>	<b>Conventional</b>	<b>\$ 1.691</b>	<b>UV Pro Coatings</b>	

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# Sustainability

## Soil Quality

For every gallon of UV Pro Products used, 10 gallon sized plastic containers are replaced and the chances of them entering into the environment are eliminated.

UV Pro Coating Systems are no-buff systems. Also eliminated from ever entering into the environment are buffing and stripping pads.

Ref: EPA

Buffing 5 X's Weekly Recoat Quarterly	Gal Jug & Pad Needs for 10,000 sq ft	Gal Jug & Pad Needs for 50,000 sq ft	Gal Jug & Pad Needs for 100,000 sq ft	Gal Jug & Pad Needs for 500,000 sq ft
<b>Conventional Floor Finish Pads Required Annually</b>	<i>4 Strip/Scrub 26 Buff Pads 30 Total Pads</i>	<i>16 Strip/Scrub 130 Buff Pads 260 Total Pads</i>	<i>32 Strip/Scrub 260 Buff Pads 292 Total Pads</i>	<i>160 Strip/Scrub 1300 Buff Pads 1460 Total Pads</i>
<b>Conventional Floor Finish Gallon Jugs Required Annually</b>	<b>90</b>	<b>450</b>	<b>900</b>	<b>4500</b>
<b>UV Pro Coating System Prep Pads Required Annually</b>	<b>5</b>	<b>10</b>	<b>20</b>	<b>50</b>
<b>UV Pro Coating System Gallon Jugs Required Annually</b>	<b>Setup Pre-Pro 16</b>	<b>Scrub and Recoat 50</b>	<b>Scrub and Recoat 100</b>	<b>Scrub and Recoat 500</b>

# Sustainability

## Air Quality

Occasionally the presents of VOC can be indentified by an odor. That said, odor in itself does not signify the level, type or even the presence of a harmful VOC.

One of the most commonly used commercial floor finish on the market today has a total formula VOC percent rating of .95. UV Pro-Shine has a total percent rating of .27.

### Coating Floors - VOC Comparisons

	VOC Emission at 2000 sq ft	VOC Emission at 10,000 sq ft	VOC Emission at 50,000 sq ft	VOC Emission at 100,000 sq ft
<b>XYZ Floor Finish</b> <b>Coats Required- 6</b>	<b>5.7</b>	<b>28.5</b>	<b>142.5</b>	<b>285</b>
<b>UV Pro-Shine</b> <b>Coats Required- 1</b>	<b>0.68</b>	<b>3.4</b>	<b>17.0</b>	<b>34.0</b>

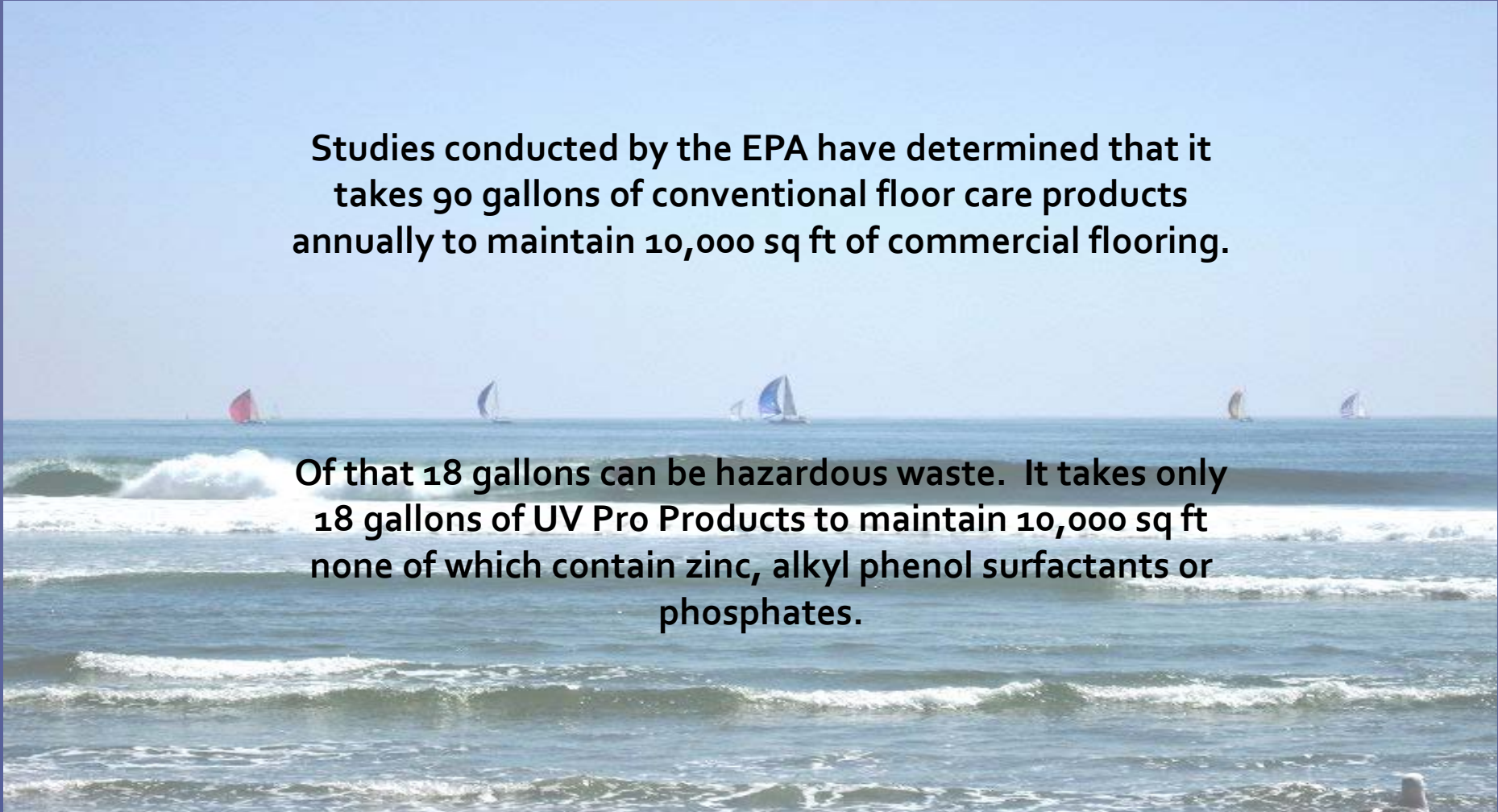
The deterioration of air quality by emission of harmful VOC's is only part of the equation. UV Pro-Shine is the foundation of a no-buff flooring protection system designed to address and protect air quality. XYZ floor finish requires buffing to maintain gloss and slip resistance claims as promoted.

# Sustainability

## Water Quality

Studies conducted by the EPA have determined that it takes 90 gallons of conventional floor care products annually to maintain 10,000 sq ft of commercial flooring.

Of that 18 gallons can be hazardous waste. It takes only 18 gallons of UV Pro Products to maintain 10,000 sq ft none of which contain zinc, alkyl phenol surfactants or phosphates.



September 18, 2009

Mr. Paul Hollenstein  
Multi-Clean  
600 Cardigan Road  
Shoreview, MN 55126

Dear Mr. Hollenstein:

As you requested, we have evaluated the static coefficient of friction of the tile sample labeled #3 Connfield Floors UV Pro-Shine with 1 coat UV Pre-Pro and 1 coat UV Pro-Shine.

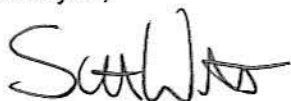
The sample was tested in accordance with ASTM D 2047-04, using the James Machine. The static coefficient of friction of the sample is listed below.

Tile	#3 Connfield Floors UV Pro-Shine
Slip Index ASTM D2047	0.8

Floor finishes having a static coefficient of friction of not less than 0.5, as measured by ASTM D 2047-04 and specified for interlaboratory and specification testing traditionally has been recognized as providing non-hazardous walkway surfaces.

If you have any questions, or if I can be of any further assistance, do not hesitate to contact me.

Thank you,



Scott Winter

cc: R. Berry  
Regional Manager





When Our Teams Work Together We Glide Forward Together.

- To Achieve the lowest cost per square foot hard floor care program available.
- Pride and accomplishment soar with your crew.
- Reduction of Air, Soil, and Water sustainability become a profit enhancer.