

# Coatings That Work

Course Number: EL901

Day, Date, and Time: Thursday, June 21, 2018

10:30 AM – 11:30 AM

Learning Units: 1.00 LU HSW GBCI RIBA

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SHERWIN-WILLIAMS®

COATINGS THAT WORK:  
*Innovations that Transcend  
Protection & Appearance*

PRESENTED BY:  
Rebecca Smith

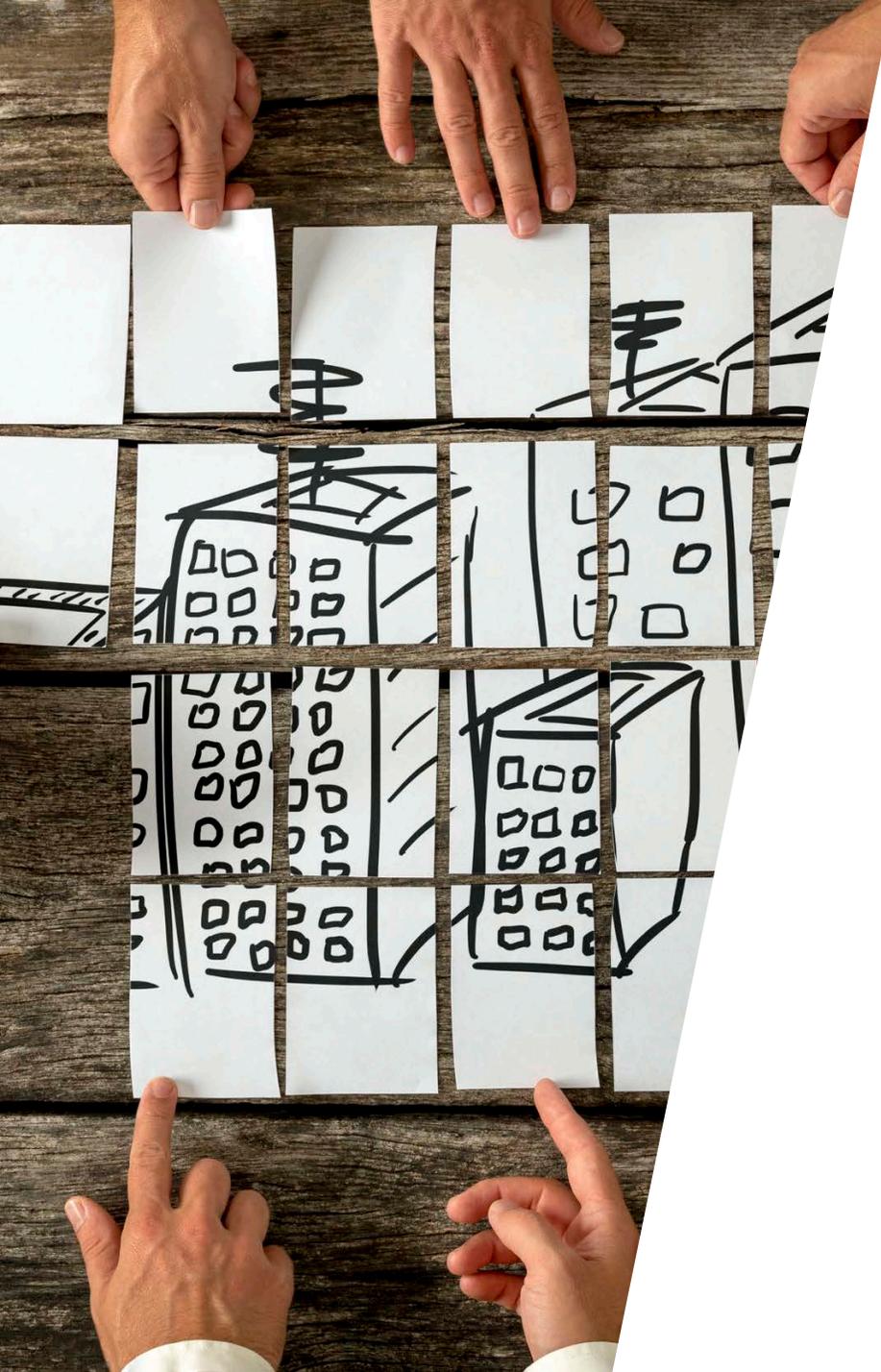
AIA Provider K065



# Course Description

Owners look to you for products that help buildings look better longer. Greater expectations for space utilization and project design are reframing how traditional building products should contribute to the efficient use of resources and promote well-being for the occupant.

This course will highlight coating innovations engineered to work harder. We will walk through the new generation of coatings and review how they can be utilized on new and renovation projects.

A collage of hands holding up a grid of paper sketches of buildings on a wooden table. The sketches are arranged in a 3x5 grid, showing various architectural drawings of buildings with windows and roofs. The hands are positioned around the edges of the grid, suggesting a collaborative review or presentation of the designs.

# Learning Objectives

1

Introduce the *next generation of interior coatings*, and discuss their applicability to promote occupant well-being and minimize resource usage on new construction and renovation projects.

2

Introduce an *exterior coating technology that is able to self-clean*, resulting in lower maintenance costs for the owner.

3

Review the conditions that merit a *concrete restoration and protection system*, minimizing the environmental impact and cost of total resurfacing.

4

Learn how new technologies also support *green building standards, sustainable building practices*, and meet stringent *VOC regulations*.

All projects are different.



All paint is not created equal.

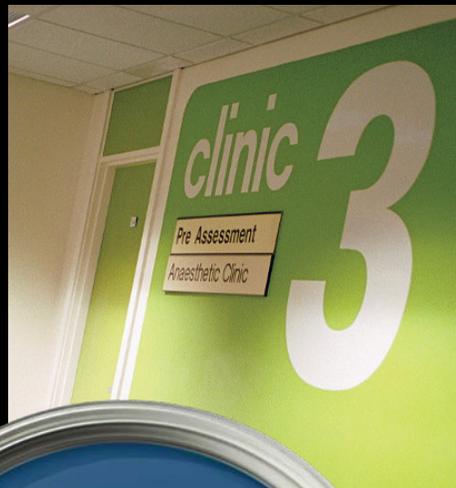


# Evolution of Paint & Coatings Technology

**THEN:** Had protective properties but was primarily used to change color and sheen on a substrate.

**NOW:** Innovative paint and coating technologies have been engineered to protect, beautify and help target problems common to the interiors and exteriors of new commercial construction as well as renovations renovations.

**BENEFITS:** Specifying a particular technology for can result in a paint film that works as an active problem-solver for the owner and the eventual occupants.



PAINTS & COATINGS  
FOR  
INTERIORS



What ~~do~~es your owner expect?

What **SHOULD** your owner expect?

# Coatings and Indoor Air Quality

By the time we reach the  
age of 70,  
we will have spent

**60 years** indoors<sup>1</sup>

Concentrations of  
pollutants inside are  
often much higher than  
those outside<sup>2</sup>



# Interior Spaces

Put the Walls To Work



Provide Lighting Efficiency



Make Cleanup Easy

Help Eliminate Ambient Odors



Kill Certain Disease-Causing Bacteria on Paint Film



Create a Hard & Tough Finish



Resist Abrasion From Pedestrian & Wheel Traffic



Block or Resist Stains



Provide Chemical Resistance



Stand Up to Performance Demands



Complement Design Scheme



# Organic Odors



Unpleasant odors can detract from even the most beautiful design scheme and can negatively impact satisfaction and the bottom-line

- **RISE IN MULTI-USE FACILITIES** *that include fitness areas, coffee shops, and pet grooming can result in a building with a unique blend of odors of organic origin*
- **ODORS IN THE EMPLOYEE LUNCH ROOM** can detract from an otherwise positive workplace environment
- **ASSISTED LIVING FACILITIES** *Residents, visitors and employees of assisted living facilities prefer a facility to smell fresh and free of organic odors*
- **MULTI-FAMILY UNITS WITH TOUGH, LINGERING ODORS** from pets, cooking or smoking can be expensive and time consuming to make ready for a new resident



# Sources of Organic Odors

Foul smells of organic origin can affect the comfort of the employee, resident, patient or guest.



# Odor-Eliminating Technology: This is How It Works in Paint



Air-borne odor molecules come into contact with a surface painted with a coating containing odor-eliminating technology



The foul-smelling compound is broken down



Dried coating neutralizes the odor



Unpleasant smells dissipate



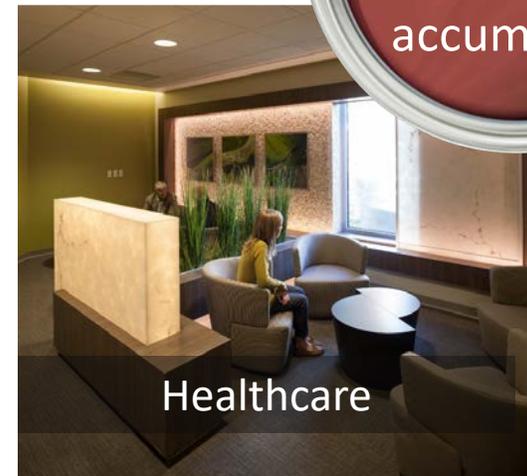
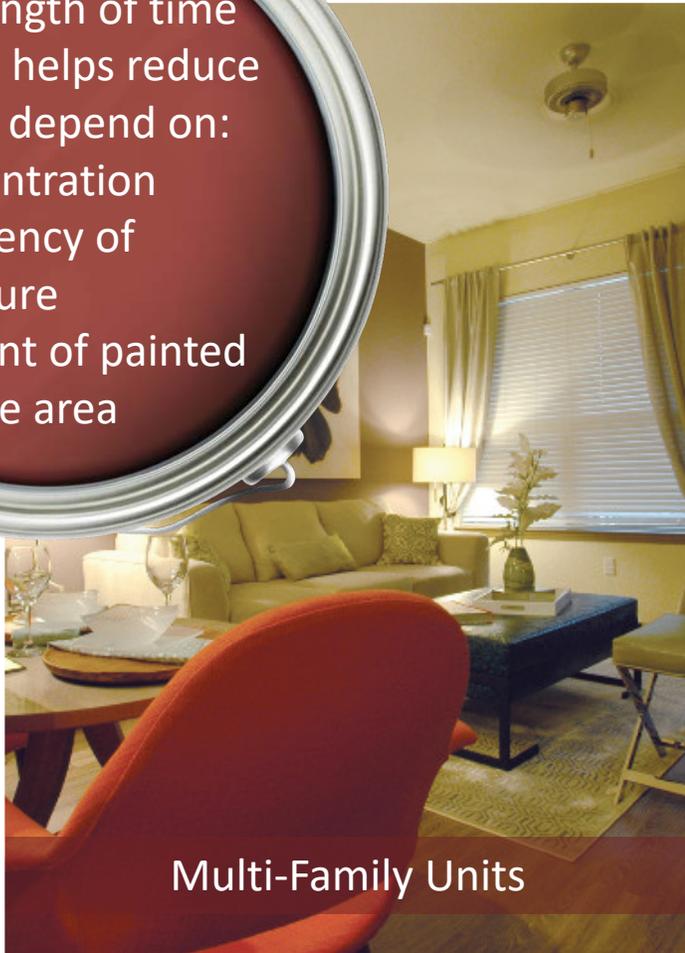
Washing the walls does not affect the odor-reducing abilities of the coating

# Specifying Coatings With Odor-Eliminating Technology

The length of time coating helps reduce odors depend on:

- Concentration
- Frequency of exposure
- Amount of painted surface area

Specify in areas where odor can accumulate





# Disease-Causing Bacteria

*According to the EPA, the average American spends nearly 90% of their time indoors where disease-causing bacteria can thrive and multiply on painted surfaces like walls, door frames and hand rails\*.*

- Bacteria such as Staph, MRSA and E.coli have been found in crowded, closed environments such as athletic facilities, schools, hotels, office buildings, hospitals and more
- Once harmful bacteria are present, they are notoriously difficult to kill and eradicate through normal cleaning procedures
- Even surfaces that look clean might be hosting these disease-causing bacteria

\*Source: [www.epa.gov](http://www.epa.gov)

# Microbicidal Paint



EPA-registered  
microbicidal paint  
kills **99.9%** of  
disease-causing  
bacteria\*  
within 2 hours on a  
painted surface

Continues  
to kill 90% of  
bacteria\* even  
after repeated  
contamination  
of painted  
surfaces

Effectiveness  
lasts up to  
4 years when  
surface  
integrity  
is maintained

Supplement  
to routine  
cleaning  
practices

\*Staph (*Staphylococcus aureus*), MRSA (Methicillin-resistant *Staphylococcus aureus*), E. coli (*Escherichia coli*), VRE (*Vancomycin-resistant Enterococcus faecalis*), Enterobacter aerogenes



# How Microbicidal Paint Works

The active ingredient in the first EPA-registered microbicidal paint is quaternary ammonium compound, “quat”

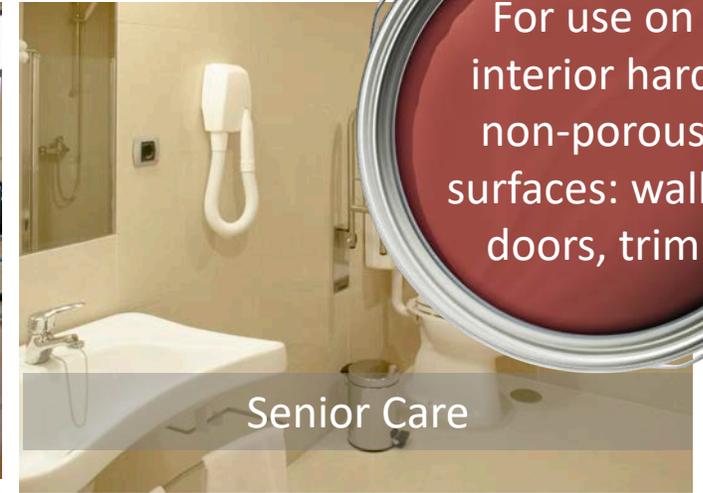
This microbicidal paint technology delivers continuous protection by killing certain disease-causing bacteria\*

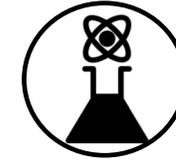
By killing certain disease-causing bacteria, microbicidal paint offers owners an additional tool to help prevent the spread of bacteria on painted surfaces

Cleaning does not impact the bacterial reduction performance of the painted surface provided the surface integrity is maintained

\*Staph (*Staphylococcus aureus*), , MRSA (Methicillin-resistant *Staphylococcus aureus*), *E. coli* (Escherichia coli), VRE (Vancomycin-resistant *Enterococcus faecalis*), *Enterobacter aerogenes*

# Specifying Microbicidal Paint



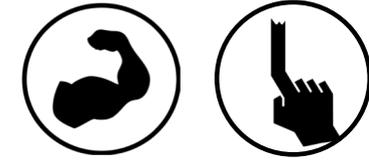


# High-Traffic Areas

High-traffic areas demand durability, performance and the ability to withstand repeated cleanings.

Painted surfaces in these spaces will be tested with foot and wheel traffic, stains, chemical exposure and more.

# High-Performance (HP) Acrylic Coating



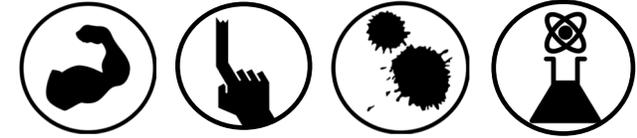
- Offers high-performance durability and lasting protection against physical abrasion
- Waterbased formulation means fewer VOCs and lower odor than solvent-based coatings
- Smooth finish stands up to demands of many high-profile commercial spaces



# HP Acrylic Coatings



# Pre-Catalyzed WB Epoxy

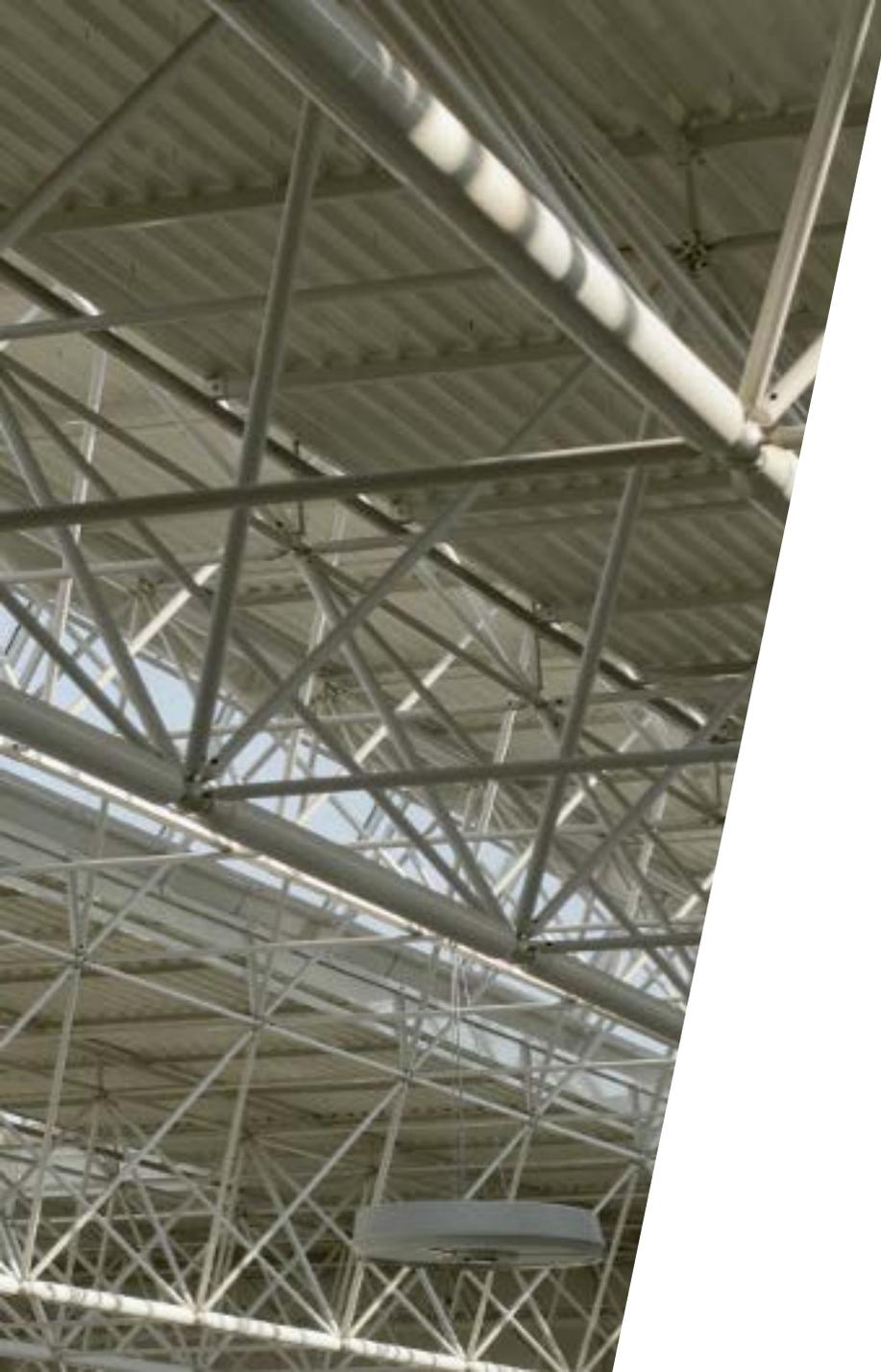


- Waterbased (WB) formulation means fewer VOCs and lower odor than solvent-based epoxies
- Can be applied in occupied areas, reducing downtime and disruptions in busy, high-traffic areas
- Offers lasting protection against stains and physical abrasion
- Durable finish reduces need for repaints, which saves on long-term maintenance costs



# Pre-Catalyzed WB Epoxy Coatings





# Exposed Ceilings

Repainting exposed ceilings in commercial, warehouse and manufacturing facilities can be a challenge.

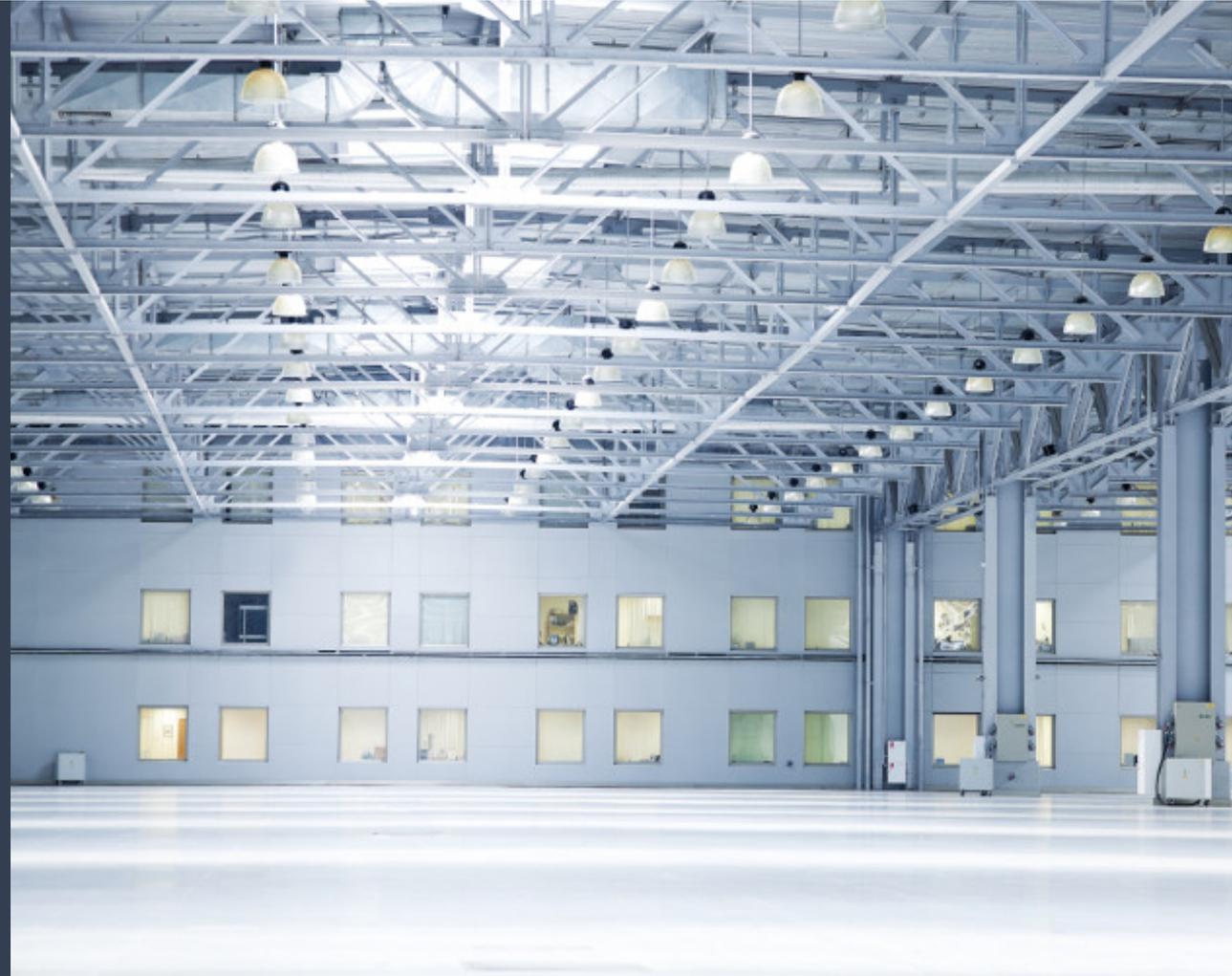
The ideal coating would be easy to apply, easy to cleanup, and would dry rapidly without affecting the expensive machinery, equipment and floors below.

A dryfall coating is available that not only greatly reduces cleanup costs, but also provides light reflectance, contributing to greater lighting efficiency within the space.

# Waterborne Acrylic Dryfall



- Bright white color delivers light reflectance and boosts lighting efficiency
- May be applied to a wide variety of substrates
- For ceilings greater than 10' high



# Waterborne Acrylic Dryfall



- Overspray dryfalls to dust for quick and easy cleanup
- Not just limited to white – use color to take advantage of the 5<sup>th</sup> wall





# Commercial Floor Coating Systems

# Considerations for Commercial Floor Coating Systems



## PERFORMANCE CHARACTERISTICS

- Chemical Exposure
- Traffic conditions
- Wet or Dry Environment
- UV Exposure
- Hygiene, cleanability, dust control
- Maintenance Regimen
- Substrate Condition



## AESTHETICS

- Color
- Design
- Gloss Rating
- Finish Texture



## SCHEDULING

- Some systems allow for quick installation
- Others require cure times of up to 1 week
- Most epoxy and urethane systems require concrete to be at least 30 days old prior to installation



## TOTAL COST

- Factor downtime, life cycle of the system, repair work and maintenance to calculate total cost





# SEAMLESS RESINOUS FLOORING

3 TYPES OF  
FLOOR SYSTEMS

*COATINGS* <30 mils  
(no aggregate)

*SLURRIES* 40 mils to 1/4"  
(some aggregate)

*MORTARS* 3/16" to 3/8"  
(lots of aggregate)





# EPOXY TERRAZZO

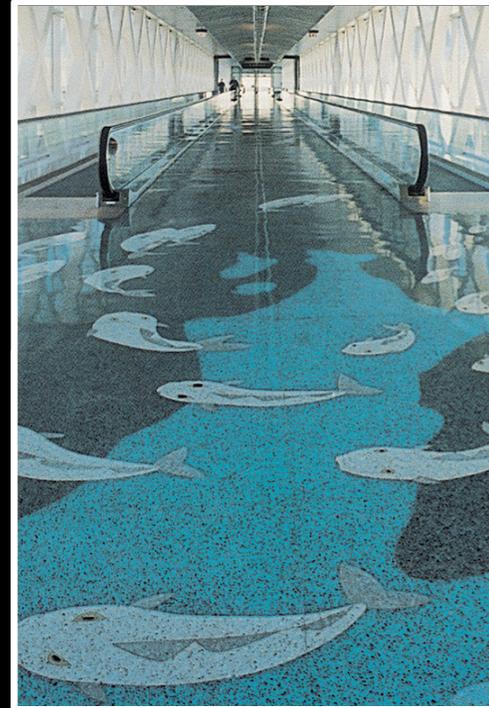
*Provides lasting durability*

*Rich in color capabilities and design options*

*Promotes better indoor air quality:*

- Non-porous and seamless so moisture and radon will not penetrate
- Contains no VOCs, eliminating off-gassing in manufacture, installation or life of the floor

*Easy and cost-effective to maintain and restore*



# Interior Paint & Coating Recap

Paint can be an active problem-solver in new builds and renovations

High-performance coatings can provide protection in high-traffic, high-exposure commercial spaces

Many of today's advanced coatings are waterbased and meet stringent VOC regulations

You don't to have sacrifice aesthetics for performance



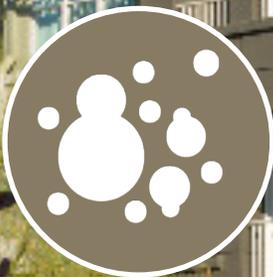
PAINTS  
& COATINGS  
FOR  
INTERIORS



# Exterior Coatings

Exterior surfaces  
pose different challenges.

# Exterior Surfaces





Reinforced  
Concrete is One  
of World's Most  
Common  
Building  
Materials

Concrete is  
a Versatile  
Building  
Material

Concrete Can Take  
Many Shapes  
Horizontal & Vertical  
Applications



# Condition Survey

Before completing a concrete restoration project, it's important to know what you're working with.

- *Detection of underlying causes of damage*
- *More accurate estimates of repairs and materials needed*
- *Better understanding of scope & cost of repairs; fewer surprises*
- *Greater quality, longevity, and cost efficiency in repairs*
- *Data to prioritize and schedule repairs*

Condition surveys can be as simple as looking at the substrate or as invasive as a core sample analysis.

Use of an engineer is recommended

# Considerations for Concrete Coating Restorations



## SUBSTRATE CONDITION

*As determined in the condition survey.  
Problems will need to be repaired prior to coating application*



## COATING REQUIREMENTS

- *Ease of application, dry time/recoat time*
- *Improve the appearance of the substrate – color, gloss*
- *Acceptable for service conditions (chemical and/or abrasion resistance, longevity, etc.)*
- *Ease of ongoing maintenance*



## APPLICATION CONDITIONS

- *Environment – such as temperature and humidity*
- *Occupation of area*
- *Ventilation*
- *Power sources*
- *Structures – including machinery and equipment*



## OWNER REQUIREMENTS

*Noise, vibration, dust, water, turnaround time, life cycle*





# Old, Worn Concrete Surfaces

Old and worn concrete patios, walkways, and pool decks are unsightly

Replacement is expensive

More cost-effective to repair existing concrete substrate than to replace

# Broom Repair Finish



## LIKE-NEW FINISH FOR LESS

*Final appearance is that of freshly poured and broomed concrete without the expense of new concrete  
Creates a high-impact and abrasion-resistant finish that stands up to pedestrian and vehicle traffic*



## BEFORE THE FINISH

- *Trowel and squeegee application for interior and exterior surfaces*
- *Able to slope and fill spalls and low areas*
- *Can be broomed or troweled smooth*
- *Broom-finished texture will enhance the fresh concrete look and provide slip-resistance*
- *Can be tinted or stained for integral color*
- *Finish coat is ready to be sealed to protect against staining*



## EXCELLENT FREEZE/THAW RESISTANCE

*Excellent bond and freeze/thaw resistance make broom repair finish ideal for driveways, parking decks and other concrete surfaces in any climate*





# Water Intrusion

Protecting exterior concrete substrates from water intrusion is an ongoing challenge for property managers and owners.

- Water can penetrate concrete, freeze and expand inside it
- Rebar can corrode if moisture, oxygen and chloride ions penetrate the concrete, contributing to the deterioration of concrete

Moisture protection is available for horizontal and slab on-grade concrete structures, pool decks, patios, walkways and balconies.

# Flexible Concrete Waterproofer



## PROTECT VARIOUS CONCRETE SURFACES FROM WATER INTRUSION

*Single-component waterbased coating offers unmatched versatility for positive and negative side waterproofing above grade  
Can be used as a stand-alone product or over-coated to provide maximum performance in high-traffic areas*



## COATING BENEFITS

*Flexible concrete waterproofer provides a durable, slip-resistant, breathable finish on new or existing concrete structures*



## QUICK RETURN-TO-SERVICE

*Coating bridges hairline cracks, reducing prep and repair time prior to application  
Fast drying time minimizes downtime and inconvenience to occupants during restorations*





# Maintenance of Exterior Concrete Buildings

Protecting and maintaining a building exterior from dirt and water penetration are often primary concerns to extending the life of the concrete and maintaining aesthetic appeal.

A masonry coating that sheds water and dirt, helps the building remain cleaner-looking longer and extends the maintenance cycle for exterior masonry.



# Hydrophobic Acrylic Coating

/hīdrə'fōbik/

Tending to repel or fail to mix with  
water

Concrete and masonry coating  
formulated to be self-cleaning by  
shedding dirt upon rain or water  
contact



# Advanced Dirt-Shedding Technology



## EXCELLENT WEATHERING PROPERTIES

*Includes resistance to UV, alkalinity, efflorescence and chalking, keep properties looking fresh long after standard masonry coatings have faded — or failed*



## BREATHABLE PAINT FILM

*Allows the masonry substrate to release moisture vapors while maintaining excellent adhesion. This reduces the potential for blistering or coating failure*



## RESISTS GROWTH OF MOLD/MILDEW

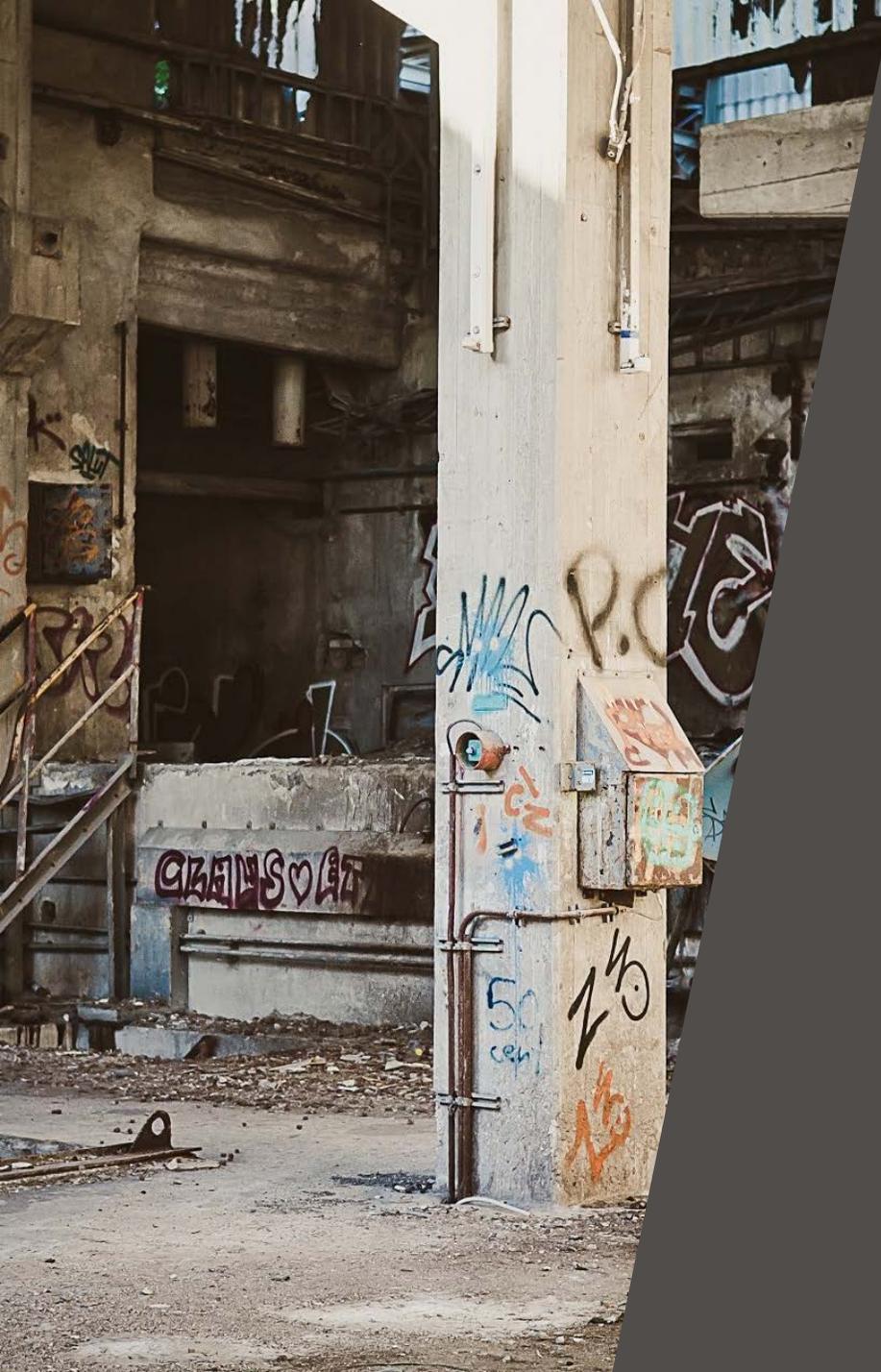
*Contains agents that inhibit the growth of mildew on the surface of this coating's film — making it even easier to keep surfaces clean*



## IDEAL FOR MULTIPLE MASONRY SURFACES

*Engineered to provide excellent protection over properly prepared bare or previously coated above-grade concrete, stucco, masonry or cement board surfaces*





# Graffiti

Graffiti is an expensive burden for a building's owner as well as the community

- *Lowers property values*
- *Hampers economic development*
- *Affects quality of life for residents*
- *Requires maintenance time and money*

# Anti-Graffiti Coatings



## EXCELLENT GRAFFITI RESISTANCE

*One-component, ready-to-use siloxane coating offers excellent resistance from graffiti over properly prepared concrete surfaces*



## UV RESISTANCE

*Coating resists ultra violet (UV) light or sunlight. UV light, or sunlight, will cause non-resistant materials and surfaces to fade or discolor..*

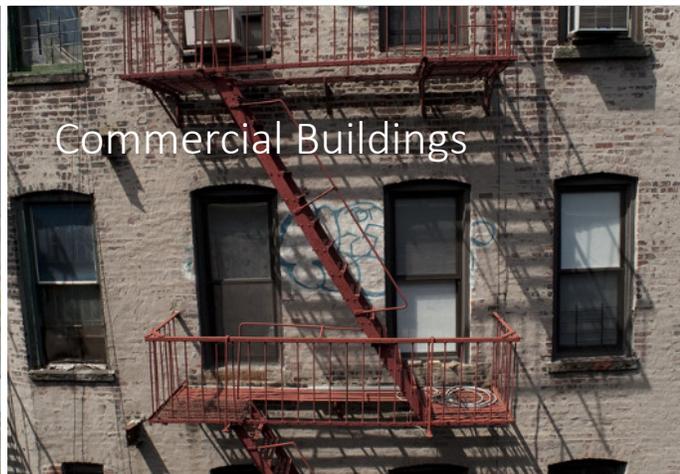


# Anti-Graffiti Coatings

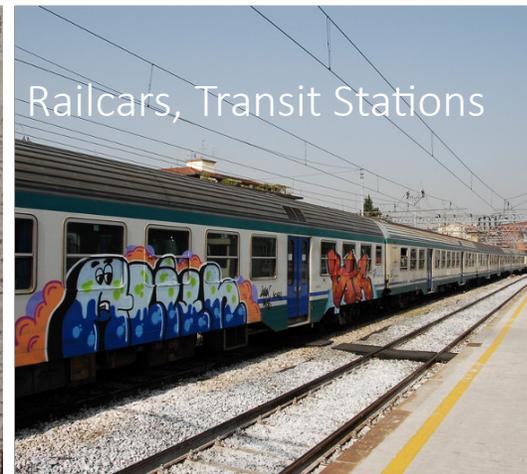
Schools



Commercial Buildings



Railcars, Transit Stations



2002

New Construction



Bridge Abutments, Overpasses



Use over interior or exterior concrete surfaces that need protection from graffiti defacing

# Exterior Surfaces Recap



Exterior concrete surfaces pose different challenges



Existing concrete substrates may require restoration before coating



Next gen exterior coatings are available that may lower maintenance costs and minimize environmental impact



An aerial photograph of a person standing on a rooftop. The person is wearing a black long-sleeved shirt, orange shorts, and grey sneakers. The rooftop is light-colored and has several white pipes or conduits running across it. A dark blue circular overlay is positioned in the lower right quadrant of the image, containing white text. The overall scene is brightly lit, suggesting a sunny day.

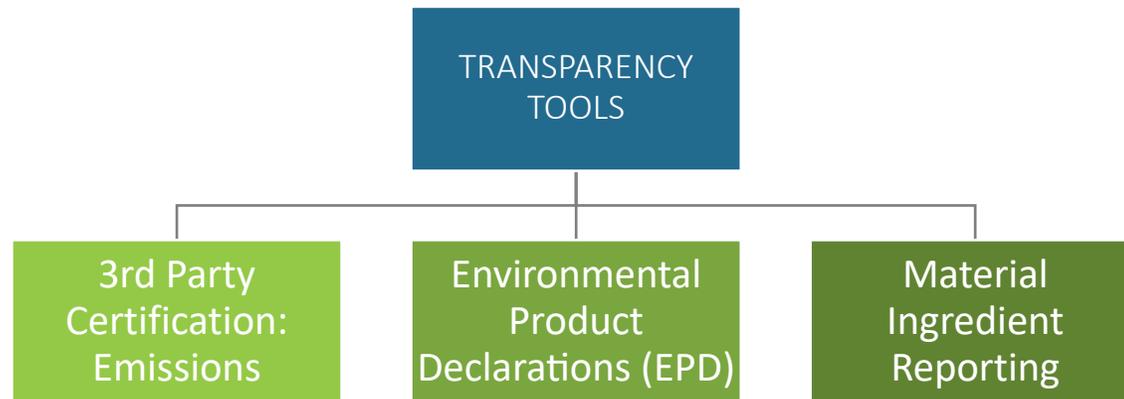
# NAVIGATING PRODUCT CLAIMS

Where to find paint & coating products that meet VOC regulations, requirements for green building programs

# Importance of Transparency

New focus on product transparency of materials:

- What ingredients are in materials
- The effect those components have on people, environment



## LOW CHEMICAL EMISSIONS



GREENGUARD Certification helps specifiers identify interior products and materials that have low chemical emissions

Website:  
<http://greenguard.org>

## ENVIRONMENTAL PRODUCT DECLARATION

The image is a sample Environmental Product Declaration (EPD) form. It includes a header with the NSF logo and 'Certified Environmental Product Declaration' text. The form contains fields for 'Product Name', 'Manufacturer', 'Product Category', and 'PCRs'. A large 'Sample' watermark is overlaid on the form. The bottom section includes a table for 'Material Units' and 'Design Life'.

NSF® International is a 3<sup>rd</sup> party that certifies products, to standards for quality, safety, performance, efficiency, sustainability

Result is an Environmental Product Declaration (EPD)

## MATERIAL INGREDIENT REPORTING

The image is a 'Product Lens' material ingredient reporting form. It includes a header with the UL logo and 'Product Lens a materials health assessment' text. The form contains sections for 'Company and Product Info', 'Qualifications', 'Materials / Ingredients Information', and 'Exposure Indicator'. A table lists materials with columns for 'Supply Chain', 'Result', and 'End of Use'. A large 'Sample' watermark is overlaid on the form.

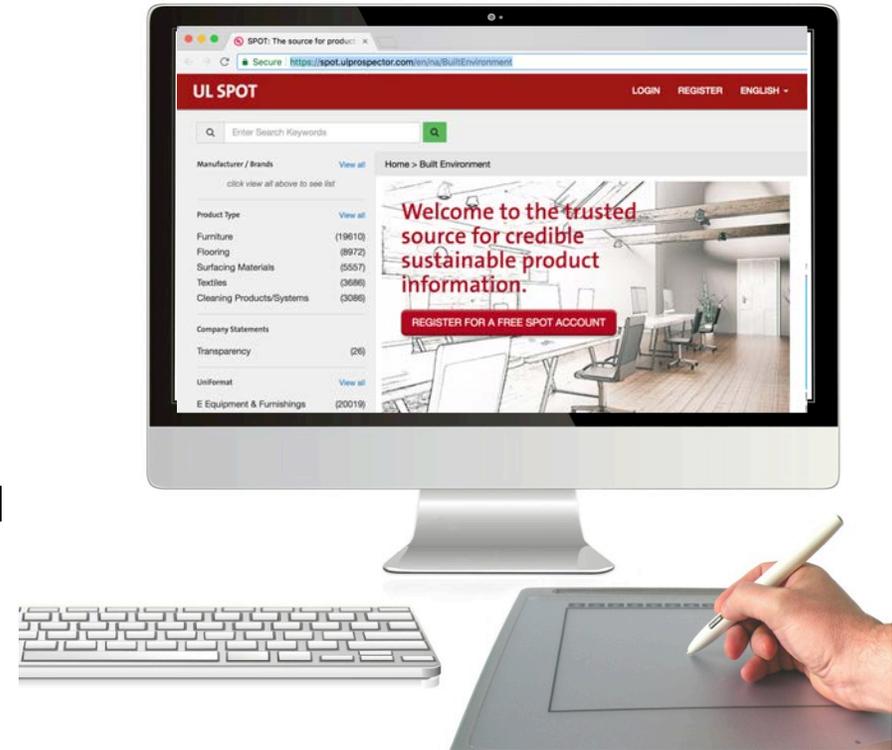
Comprehensive, hazard-based chemical information disclosure  
 Exposure risk assessment

Stresses the significance of chemical exposure during usage

Specify with confidence with 3<sup>rd</sup> party

# UL SPOT™ Product Database

- Search UL SPOT™ product database at [www.greenguard.org](http://www.greenguard.org) for a complete list of approved products by product name or manufacturer
- UL SPOT™ lists products ranging from Adhesives/Sealants to Wood Finishing Products
- Product listings provide links to certification documents for GREENGUARD® certification as well as Environmental Product Declarations and Health Product Declarations, if available
- Lists applicable Sustainable Credit Categories, should you specify that product



Certification Mark(s):





# Delivering Next Gen Coating Benefits to Owners

# Describing Paint Requirements in Your Specs: Div. 9 Specifications

## Generic Description

- Interior/Exterior
- Sheen (Gloss, texture, aesthetics)
- Resin or solvent (Vehicle Type)

## Special Characteristics

- Zero VOCs
- Odor eliminating technology
- Moisture resistant
- Mold and mildew resistant
- Anti-microbial
- Microbicidal
- Rust inhibitive
- Hydrophobic
- Abrasion or impact resistant

## Reference Standards

- Measurable and comparable performance standards
- ASTM for Hardness, Abrasion Resistance, Adhesion

## Basis of Design

- Establishes an enforceable level of quality
- Helps with submittal review
- Deliver what's important to the owner
- List specific manufacturer, make and/or model number

A close-up photograph of a person's hand, wearing a blue long-sleeved shirt, dipping a brush into a can of white paint. The can is open, and the brush is partially submerged in the paint. The background is a blurred, light-colored surface, possibly a wall or a piece of equipment.

# Coating Maintenance Manual

- Simplify the maintenance painting process for owners
- Each customized maintenance manual may include:
  - Color samples
  - Care and cleaning instructions
  - Specific paints used
  - Touchup tips
  - Product data pages
  - Material Safety Data Sheets
- List a Coating Maintenance Manual to the Closeout Document Requirements in your specifications
  - Section 1.1 submittals



# Key Takeaways

- 1 Today's advanced interior paint and coatings “put the walls to work” by offering unique benefits and added protection in high-profile, high-traffic and high-exposure commercial spaces.
- 2 Concrete is a popular building material that is used in everything from roof tiles to pool decks. Certain conditions merit a concrete restoration and protection system, which minimizes the environmental impact and cost of total resurfacing.
- 3 You can help owners lower maintenance costs by specifying an exterior coating technology that is able to self-clean by shedding dirt and water on contact.
- 4 Navigating product claims can be a challenge. Look to sources like UL SPOT to easily identify paints and coatings that support green building standards, sustainable building practices, and meet stringent VOC regulations.



# Thank You!



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