





An American Institute of Architects (AIA) Continuing Education Program

Course Format: This is a live, instructor-led webinar course.
Course Credit: 1 AIA Health Safety & Welfare (HSW) CE Hour

Completion Certificate:

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IDCEC Course Code: XXXX
This program qualifies for 1.0 HSW Hour.

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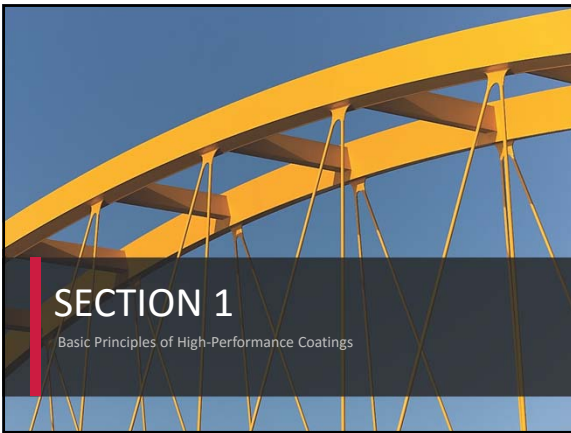
Course Overview

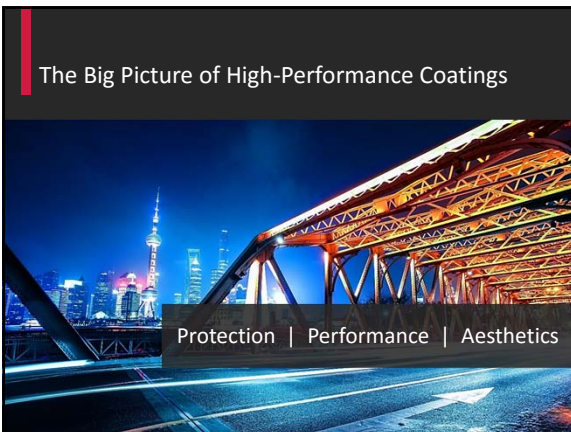
This CEU will increase your general awareness of not only what high-performance coatings are and where they are used, but also to introduce factors that influence performance, service life, and selection.

Learning Objectives

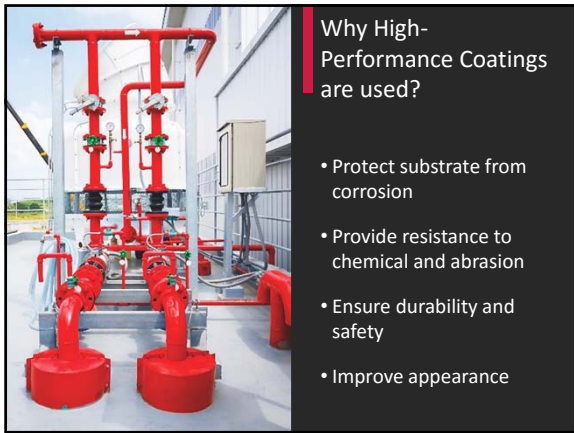
Upon completing this course, you should be able to:

- Explain the purpose and common applications of high-performance coatings
- Explain how high-performance coatings help control corrosion
- Describe the benefits of a three coat system
- Identify the factors that influence the coating system selection



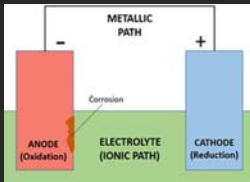








Metallic Corrosion

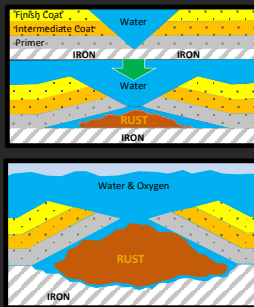


• Four components are required for corrosion to occur:

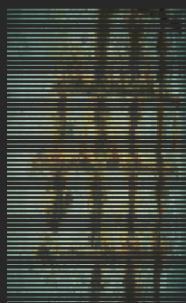
- Anode – an “active” metal component
- Cathode – a less active metal component
- Metallic Pathway – a direct connection between the anode & cathode
- Electrolyte – a medium that conducts electricity, like water

Metallic Corrosion

- Metal expand 23x original size
- High-performance coatings control corrosion




Metal Corrosion



Corrosion Rate

- **Several factors influence Corrosion**
 - Chemicals
 - Temperature
 - Moisture
 - Substrate Design



Polling Question

High-Performance Coatings: Corrosion Control

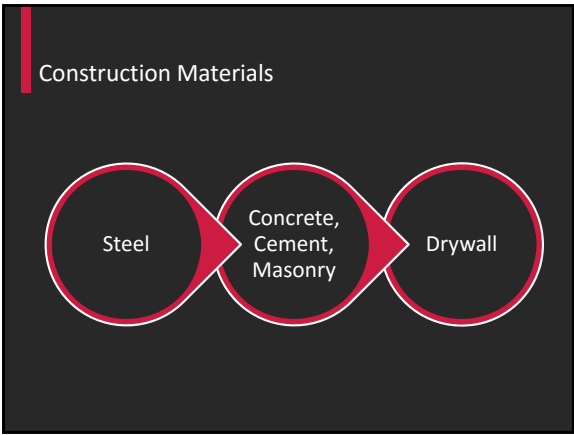
Barrier between substrate and water	Insulates the substrate from contact with soil	Protects substrate from contact with chemicals
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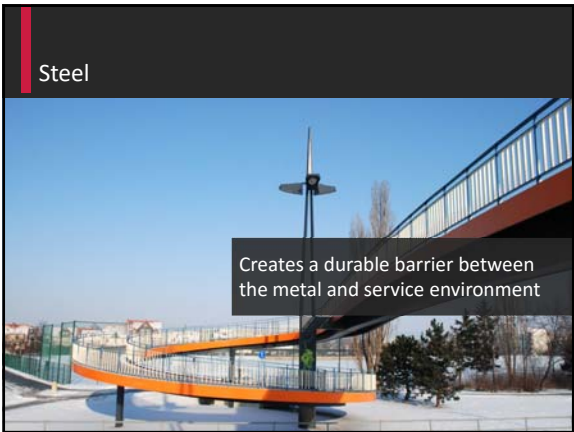






High-performance coatings are not limited to industrial purposes.





Concrete, Cement, Brick Masonry



Drywall



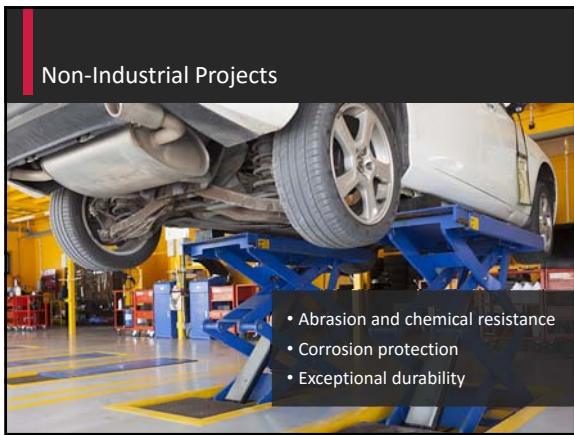
What other types of spaces and structures require exceptional durability?

--Enter responses in the question box--



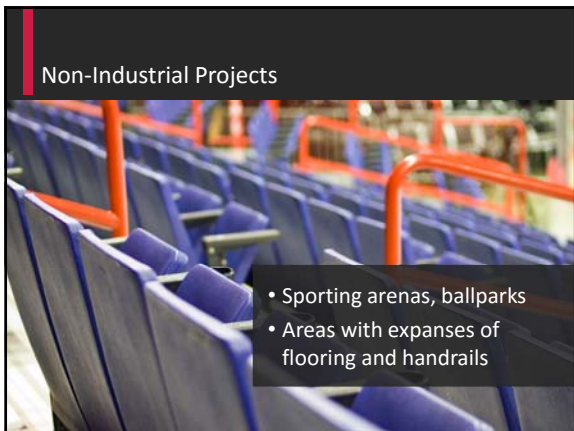
Non-Industrial Projects

- Hospitals and healthcare facilities
- Restaurants, hotels, and retailers



Non-Industrial Projects

- Abrasion and chemical resistance
- Corrosion protection
- Exceptional durability



Non-Industrial Projects

- Sporting arenas, ballparks
- Areas with expanses of flooring and handrails



Warehouse and Distribution Centers

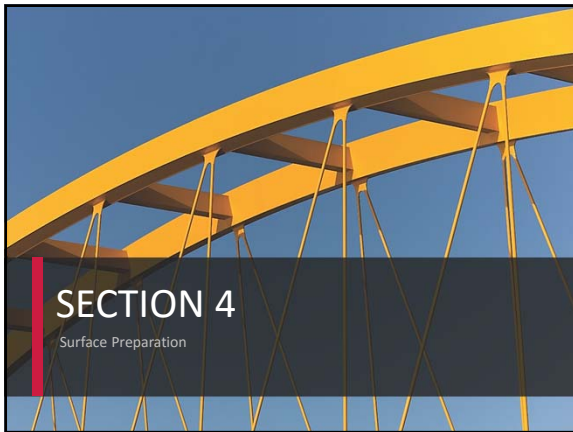
- Wear and tear of construction equipment
- Heavy machinery
- Lift tires, oil fuel, material spills

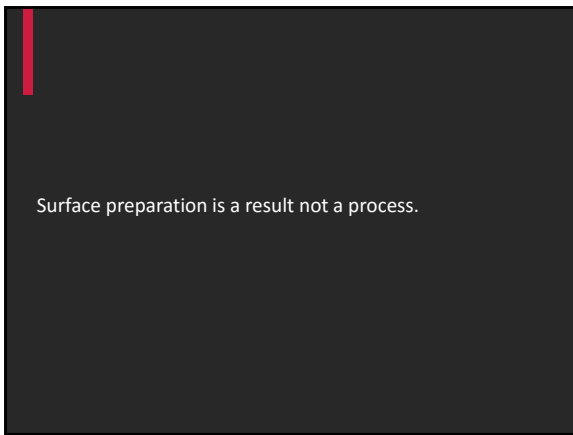


Building Maintenance & Facilities Room

- Tanks and pipes
- Color-coding

Polling Question









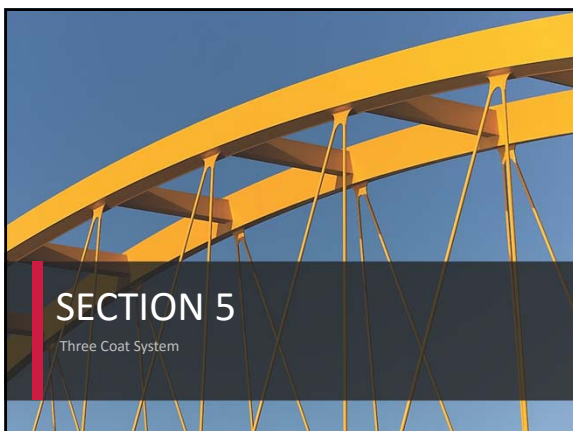
Surface Preparation

- **Techniques vary**
 - Based on coating
 - Service environment



Surface Preparation and Priming Standards

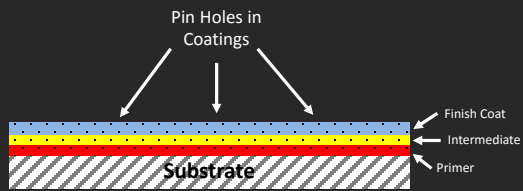
- Industry standards
- Technical publications
- Training and certification



SECTION 5
Three Coat System

Three Coat System

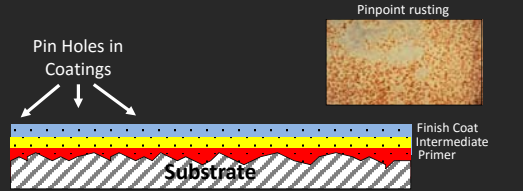
- Number of coats is more important than thickness
- Protection in layers



The diagram shows a cross-section of a substrate with three layers of coating: a bottom primer layer (red), a middle intermediate layer (yellow), and a top finish coat (blue). Three arrows labeled 'Pin Holes in Coatings' point to small gaps in the top finish coat layer. Labels on the right side identify the 'Finish Coat', 'Intermediate', and 'Primer' layers.

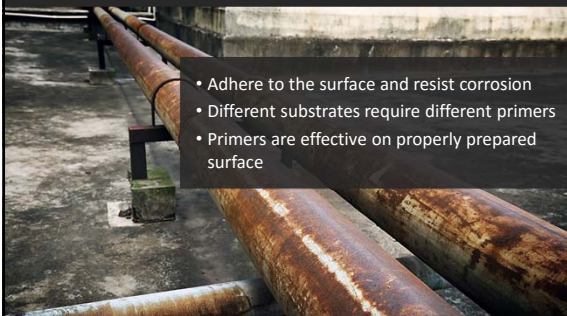
Three Coat System

- Surface profile should be buried by the dry film of primer.
- Insufficient coating results in pinpoint rusting



The diagram is similar to the first one but shows a wavy surface profile on the substrate. An inset image labeled 'Pinpoint rusting' shows a brown, pitted surface. Arrows labeled 'Pin Holes in Coatings' point to gaps in the top finish coat. Labels on the right side identify the 'Finish Coat', 'Intermediate', and 'Primer' layers.

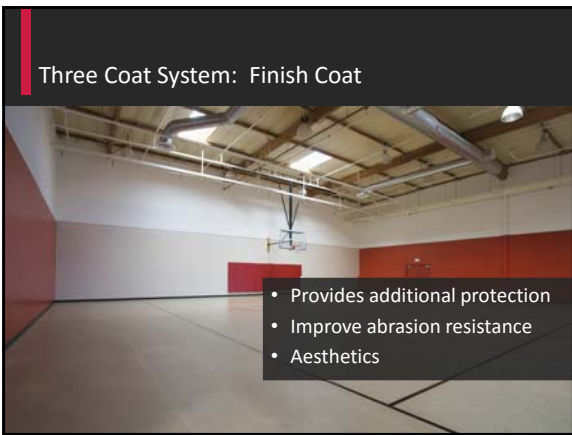
Three Coat System: Primers



- Adhere to the surface and resist corrosion
- Different substrates require different primers
- Primers are effective on properly prepared surface

The photograph shows several large, horizontal industrial pipes that are heavily rusted. A semi-transparent text box is overlaid on the image, containing the three bullet points listed.



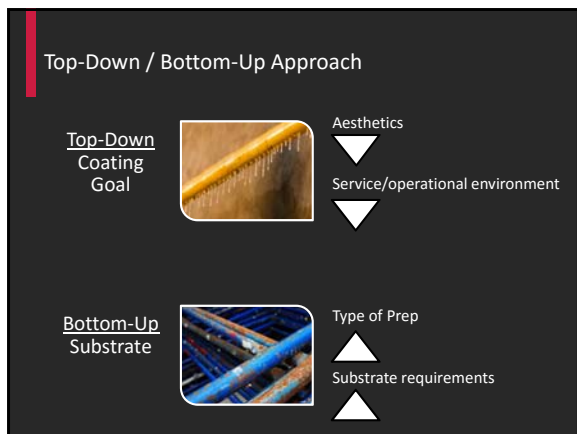


**Paint Thickness in
measured in Mils?
True or False**

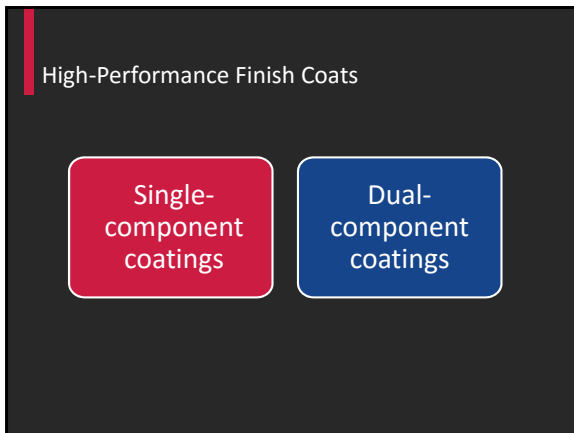
--Enter response in question box--

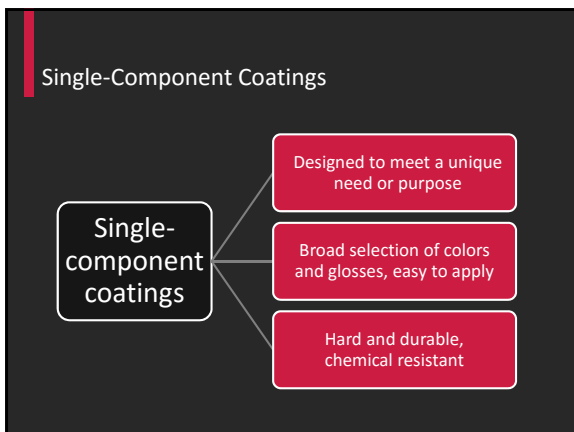
Polling Question

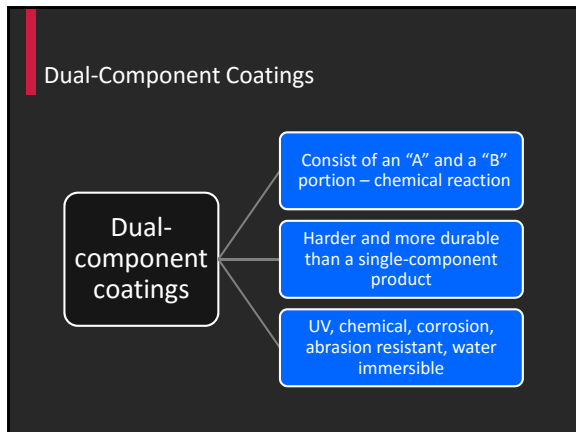


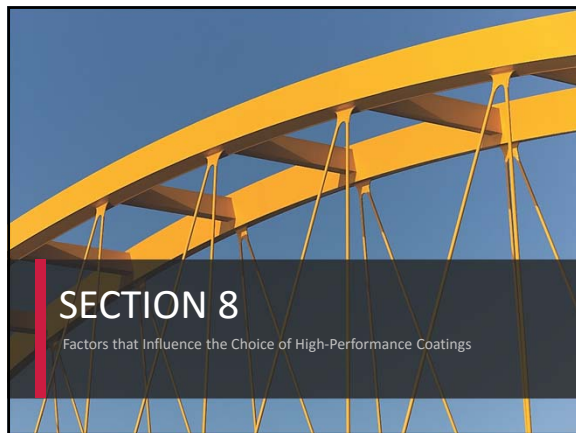








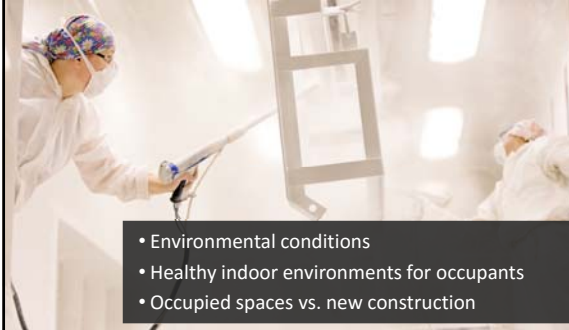




Environmental & Operations Conditions

- **Interior and exterior spaces**
 - Interior spaces: heat, high humidity, and particulate matter
 - Exterior spaces: freeze-thaw conditions, heat and humidity, UV exposure, salt

Environmental & Operations Conditions



Factors that Influence the Choice of High-Performance Coating System

- **Anticipated use and exposure**
 - ✓ Service environment
 - ✓ Expected exposure
 - ✓ Job type
 - ✓ Substrate type
 - ✓ Surface Preparation
 - ✓ Budget
 - ✓ Customer Expectations

Standards and Specialists

- **Rely on standards and specialists**
 - Applications and surface preparation standards can mitigate confusion
 - Coating manufacturers are a valuable resource
 - With guidance, projects can be done properly

Do environmental conditions only apply to exterior spaces?

True or False

--Enter response in question box--

Summary

At first glance, the world of high-performance coatings may appear overwhelming. But a good starting point for understanding these coatings is to recognize that the same benefits high-performance coatings provide for large-scale industrial projects can be applied to non-industrial projects.

So when exceptional durability, safety, and longevity are needed or required specify a high-performance coating system. These coatings are designed specifically to protect substrates from chemicals, abrasion, and corrosion, and enhance project aesthetics.

Thank You



Thank you for your interest in high-performance coating systems. This concludes the American Institute of Architects Continuing Education Systems and IDCEC Course.

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Resources

Master Painters Institute. www.paintinfo.com
NACE International. www.nace.org
National Paint & Coatings Association. www.paint.org
Society for Protective Coatings. www.sspc.org
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