Corrosion Resistance

Featuring Polyshield HT-101™

Project:
Steel Cooling Towers

Location:
Everett, Washington

Owner:
Major Airplane Manufacturer

Applicator:
Cascade Industries

Coating System:
Polyshield HT-101™
EP-100 (Epoxy Primer) & EPL-8

Date Completed:
October 2008

PROBLEM:

Steel cooling towers at a major airplane manufacturing plant in Washington State are constantly exposed to the harsh regional environment. As a result, the towers quickly started to rust and corrode. To minimize the facilities downtime, the owner needed a long-term solution, with a fast turn-around time.

SOLUTION:

SPI's Polyshield HT-101™ was the best solution. It provided a flexible, resilient, and tough monolithic protective coating, with excellent water and corrosion resistance.

As always, proper surface preparation was critical prior to the coating application. Surface preparation included pressure washing, and grinding the steel substrate to remove existing rust and corrosion. To ensure adhesion, the substrate was primed with SPI's EP-100™ (Epoxy Primer).

SPI's self-leveling EPL-8™ was applied to the hard-to-reach areas. Polyshield HT-101™ was then applied at a thickness of 60-80 mils. Each cooling tower took an average of 2-3 days to completely prep, prime, and coat with Polyshield HT-101™. Once applied, Polyshield HT-101™'s fast-set physical properties allowed for a quick return to service time.

RESULTS:

The towers' service life has been extended, and can easily be cleaned and maintained going forward. Upon final inspection, the owner was pleased with the results and said he would use these products for future projects.

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Corrosion Control

Featuring Polyshield HT™

Project:
HVAC Air Handling Systems

Location:
Thousand Oaks, CA

Owner:
Pharmaceutical Laboratory

Applicator:
Poly Coatings Inc.

System:
POLYSHIELD HT™ Polyurea light grey, high pigmented, UV resistant with AE-4 (adhesion enhancer)

Total Area:
29 air systems, 800 square feet each of surface was prepared and coated

Completion Date:
December 2004

PROBLEM:

The HVAC air handling systems at a major pharmaceutical laboratory were severely corroded and began to leak. The air handling units had previously been coated with epoxies and needed recoating, due to numerous failures.

SOLUTION:

The project owner decided to use SPI's Polyshield HT™ polyurea because of the product's water resistance and high elongation properties. Before the polyurea coating could be applied, the failed epoxy coating had to be removed, along with a great deal of rust and corrosion. Grinders were used to remove the epoxy coating and corrosion, and to provide an anchor profile for proper adhesion to the substrate. Polyshield HT™ with AE-4 (adhesion enhancer) was then spray applied at a thickness of 60-80 mils. The product's rapid curing properties allowed the air handling units to be quickly returned to service.

RESULTS:

The project manager was pleased with the Polyshield HT™ polyurea coating, stating "the workmanship was excellent, and the timely completion of the work was critical to laboratory operations". Due to failing epoxy coatings, there are numerous additional applications at this facility, as well as other plant locations that are experiencing similar corrosion and leaking issues.

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HVAC/Air Handler Buildings

Featuring Polyshield SS-100®

Project:
Cobo Hall Convention Center

Location:
Detroit, MI

Owner:
City of Detroit

System:
64 mils POLYSHIELD SS-100®

Total Area:
25,000 square feet

Completion Date:
December 1998

PROBLEM:
The City of Detroit is home to the expansive and impressive Cobo Center (formally Cobo Hall). On top of this giant 2,400,000 sqaure foot facility are 22 air handling buildings that contain the HVAC units required to keep the thousands of annual patrons cool and comfortable. This world class facility had serious problems when the air handling buildings started to leak water. The water was dripping down onto the venue floor and event attendees. Cobo Center management made several unsuccessful attempts to seal off the air handling buildings.

SOLUTION:
The city chose Polyshield SS-100® polyurea to coat the air handling building floors and walls. Polyshield SS-100® was the best solution because of its durable, seamless, and water-resistant properties.

After proper surface preparation, the floors and walls of the air handling buildings were coated with 64 mils of Polyshield SS-100®. The floors were then flooded for leak testing with 1" of water and left alone for 6 hours. There were no leaks in any of the 22 air handlers.

RESULTS:
The site was inspected one year later by a city official and an SPI representative. The results of the in-depth inspection found no leaks, cracks or deficiencies. City officials were pleased with the job and awarded additional projects to the contractor using SPI's Polyshield SS-100® (elevator entrance, floors, walkways, steps, dish washing room floor, standing seam air handler roofs and exterior duct work, etc.)

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Concrete Cooling Tower Protection

Featuring PTU™

Project:
Cooling Tower Protection

Location:
Goddard Space Flight Center
Greenbelt, Maryland

Owner:
NASA

Applicator:
Gibraltar Coatings

Coating System:
PTU™ Chemical Resistant
Polyurea Coating - 120 mils

Total Area:
2,500 sq. ft.

Date Completed:
May 2009

PROBLEM:
NASA's Goddard Space Flight Center is home to the nation's largest organization of combined scientists, engineers and technologists that build spacecraft, instruments and new technology to study the earth, the sun, our solar system, and the universe.

NASA's facility management team was experiencing issues with a recently constructed cooling tower. The cooling tower was essential for maintaining proper HVAC conditions in important operational buildings. Chemical solutions used to treat the water in the cooling tower were damaging the concrete and accelerating deterioration. Facility management was looking for a protective coating solution to stop the concrete erosion and avoid the need for expensive repairs. Any potential coating would have to be resistant to the water treatment chemicals, and also be able to flex with the concrete movement from annual thermal cycles.

SOLUTION:
Facility Management evaluated several different coating options: epoxy, urethane, polyurea, sheet goods, etc. They decided to use SPI's PTU™ polyurea coating. The decision was due to the coating's extended service life, strong chemical resistance, and elastomeric properties.

Gibraltar Coatings received the contract award because of their expertise with sealing and coating concrete.

The applicator started the surface preparation process by removing any surface latents, making sure they had a clean & dry substrate. Then a thin-film coating of Deep Seal® moisture barrier and Polyprime-100™ primer were roll-applied to seal the pores in the concrete surface.

After the surface was properly prepared, the applicator sprayed 120 mils of SPI's PTU™ chemical resistant polyurea over the concrete cooling tower's interior and exterior surfaces.

RESULTS:
The Goddard Space Flight Center facility management team conducted several inspections during and after the project was completed. The coating has maintained great adhesion to the surface. Facility managers were completely were completely satisfied with the results. They have a protective coating in place that will drastically increase the cooling tower's service life. NASA's investment in SPI's polyurea, protective coating provided a reliable solution at a fraction of the cost compared to replacing the cooling tower.

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