

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.

COMPLETION DATE:
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 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.

