Safety Markings

Featuring AMP-100™

Project:
Concourse Striping

Location:
Newark International Airport

Owner:
Continental Airlines/Port Authority of NY/NJ

Applicator:
Ramp Engineering

System:
AMP-100™ (Aliphatic Modified Polyurea) with AE-4 (Adhesion Enhancer) and reflective glass spheres added

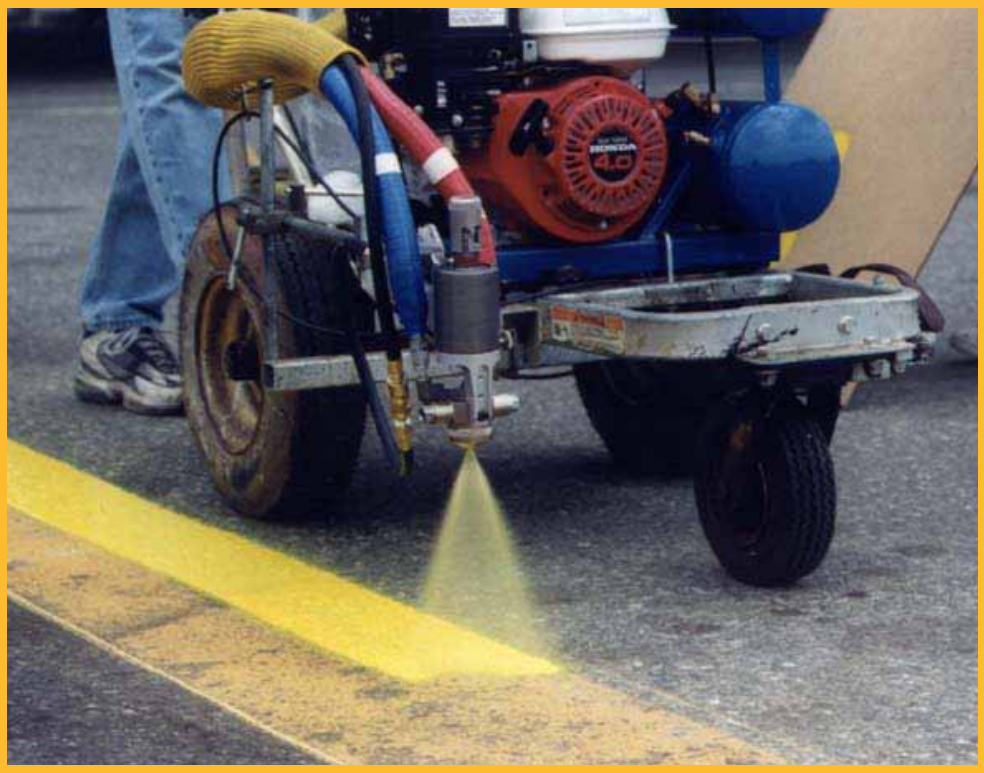
Total Area:
Approximately 60,000 square feet

Completion Date:
2001- 2003

PROBLEM:
Challenged with constantly repainting safety markings on the tarmac at the Newark International Airport, Continental Airlines and the Port Authority were looking for a long-term marking solution using polyurea.

SOLUTION:
SPI's AMP-100™ an aliphatic modified polyurea was chosen due to its superior color stability, and its outstanding abrasion resistance. The old tarmac markings were removed with ultra-high water pressure. The new markings, yellow, red, white, blue and black were put down with Ramp Engineering's patented application system: AMP-100™ with AE-4 (Adhesion Enhancher), adding reflective glass spheres to the second 20 mil coat of AMP-100™.

RESULTS:
This was the first time in which reflective spheres were added to the stream of AMP-100™. Continental Airlines was very satisfied with the final product. The Port Authority of New York/New Jersey wrote a specification to use polyurea on future aviation projects. The owner performed a follow-up inspection two years later that showed total adhesion to the concrete and good color stability.



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Monitor Window Encapsulation

Featuring Glass Shield-100™

Project:
Glass Windows
Pontiac East Truck Plant

Location:
Detroit, MI

Owner:
General Motors

Applicator:
Blastech

System:
SPI GLASS SHIELD-100™ Polyurea applied at 24 mils on glass window inside and outside.
SPI A102™ Polyurethane exterior topcoat (1 gallon / 100 sq. ft.)
Interior finished with acrylic paint.

Total Area:
140,000 square feet

Completion Date:
March 1999

PROBLEM:

The monitor glass windows in GM's Pontiac truck plant's were aging and beginning to leak. Several of the deteriorated windows started falling out and crashing down onto the plant floors. These windows became a serious safety hazard. They needed to be stabilized and sealed, but due to the age of the windows, it had to be done without any type of surface preparation. The windows would have to remain in place and be encapsulated to prevent further damage, while eliminating any further risk of injury.

SOLUTION:

The project owner decided to use SPI's Glass Shield-100™ polyurea because of it's durability and water resistant properties. The contractor applied Glass Shield-100™ polyurea at 24 mils on the inside and outside of the windows. Upon request from General Motors, SPI's A102 (single component polyurethane) was custom matched to their company colors and sprayed as a topcoat on the exterior.

RESULTS:

The Glass Shield-100™ polyurea coating system stabilized and sealed the leaking, aging windows. Plant officials were satisfied with the solution, and relieved to have the safety issue resolved. The project owner awarded several new projects to the applicator in 2000 and 2002.

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Protective Liner

Featuring Polyshield HT™

Project:
"The Atomic Train"
Low-Level Radiological
Waste Shipping Program

Location:
Cincinnati, OH

Owner:
United States Department
of Energy (DOE)

Applicator:
Acme Fisher Tank Lining Company

System:
POLYSHIELD HT™
with AE-4 (adhesion enhancer)

Total Area:
34 rail cars

Completion Date:
Spring/Summer 1999

PROBLEM:
The United States Department of Energy's (DOE) Low Level Radiological Waste Shipping Program was looking for a protective coating to be applied on the interior holding area of their railcars, which are used for transporting waste. The ability to maintain abrasion resistance with excellent adhesion to the surface was imperative.

SOLUTION:
Polyshield HT™ with AE-4 (adhesion enhancer) was selected because of its high tensile strength and superior adhesion. Polyshield HT™ with AE-4 was applied at 60-80 mils directly over the properly prepared steel surface (3-mil anchor profile). Due to the tenacious bond achieved with the AE-4 additive, (exceeds 1750 PSI in pull-off tests) no primers were required, saving time and money.

RESULTS:
The Department of Energy (DOE) Project Manager, John Hall writes, "SPI product has been successfully patched in the field by our project personnel using SPI patch kit materials." A one-year Inspection was completed by John Hall. The material has proven durable over a complete weather cycle in southwest Ohio under an aggressive inspection and repair program.

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Secondary Containment Systems

Featuring Polyshield SS-100®

Project:
Aviation Fuel Hydrant Pits

Location:
Anchorage, AK

Owner:
Signature Flight Service

Applicator:
H.P.C. Painting Company

System:
POLYSHIELD SS-100® Polyurea

Total Area:
200 Aviation Fuel Hydrant Pits

Completion Date:
1990-1994

PROBLEM:
Anchorage International Airport was looking for a coating to prevent spilled fuel in the jet fueling pits from leaking into the ground. The coating had to be resistant to a variety of fuels and applied over potentially contaminated substrates. In addition, the coating needed to be flexible enough to resist cracking during Alaska's annual freeze/thaw cycles. Airport management needed a reliable solution, easily applied, with an immediate return to service.

SOLUTION:
Polyshield SS-100® polyurea was chosen due to its corrosion resistant, high-elongation, and rapid cure properties. The coating will enable the owner to quickly return the fuel hydrant pits back to service, and will move with the substrate expansion and contraction during the freeze/thaw cycle.

The applicator spray-applied 80 mils of a translucent yellow Polyshield SS-100® polyurea. The color yellow was chosen to contrast the darker substrate, making it easy to visually determine the thickness of the coating. The polyurea coating was applied over various substrates (concrete, geo-textile fabric, and directly onto the ground).

RESULTS:
Polyshield SS-100® is performing exceptionally well. These pits are continually exposed to water, anti-icing agents, and jet fuel. The coating has some color change, but no signs of deterioration.

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Extending Concrete Service Life

Featuring Polyshield SS-100®

Project:
Beaucatcher Tunnel

Location:
Asheville, NC

Owner:
North Carolina Dept.
of Transportation (NCDOT)

Contractor:
Orbit International

System:
50 mils (1.3 mm) POLYSHIELD SS-100®
4 mils (0.1 mm) PS-70 Primer

Total Area:
85,000 square feet

Completion Date:
July 1997

PROBLEM:
A sixty-eight year old tunnel was renovated to restore damaged concrete, and fix water problems. Previous coatings proved to have no longevity, and began cracking and peeling after only a short time. The North Carolina Department of Transportation (NCDOT) had previously used epoxies and paints, but were dissatisfied with the performance of these coatings.

SOLUTION:
Polyshield SS-100® was selected because of its superior strength and elasticity. The entire tunnel was sandblasted to remove the old coatings, cleaned with a high pressure wash, and primed with PS-70 Primer. Polyshield SS-100® was then applied at 50 mils. The tunnel's new protective coating has been preserving the concrete and is easily cleaned using a high pressure wash, providing reduced maintenance costs.

RESULTS:
2009: According to a NCDOT representative, maintenance personnel reported that the Polyshield SS-100® is holding up well and no repairs have been necessary since renovations in 1997.

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Extending Service Life of Concrete

Featuring Polyshield SS-100®

Project:
Lewis Street Underpass Spall Repair

Location:
Pasco, WA

Owner:
City of Pasco Public Works Department

System:
120 mils POLYSHIELD SS-100® to railing cap and 60 mils POLYSHIELD SS-100® to railing below cap. Primed with Devoe 167 Penetrating Sealer.

Total Area:
20,000 square feet

Completion Date:
October 1998

PROBLEM:
The Lewis Street Underpass was built in the 1930's with a low grade concrete. The concrete railing was spalling and falling on the cars below. Until the underpass could be replaced in the next 5-10 years, the city of Pasco needed an economical way to prevent the spalling. Because the underpass has a high volume of pedestrian and automobile traffic, a major concern for the project engineer was a quick turnaround time.

SOLUTION:
Polyshield SS-100® was chosen for its strength and quick curing time. In order to create a more even rail surface, the concrete was first hydro-blasted at 10,000 psi, then primed with three coats of Devoe 167 penetrating sealer. Next, a quick-set grout was used to fill the larger gaps on the rail cap. Another coat of penetrating sealer sealed the grout. The rail caps were then coated with 120 mils of Polyshield SS-100® and the vertical rail surfaces were coated with 60 mils.

RESULTS:
The City Engineer checked the condition of the project three months after completion. He was pleased with the Polyshield SS-100® protection of the concrete and impressed by its resistance to vandalism.

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Primary Containment

Featuring PTU™

Project:
Aerospace Acid Wing
Dipping Process - Tank Lining

Location:
Fredrickson, WA

Owner:
Northwest Plane Manufacturer

Applicator:
Cascade Industries

System:
PTU™ (Polythiourea)
Chemical Resistant Polyurea

Total Area:
1100 Square Feet

Completion Date:
2004

PROBLEM:
A commercial airplane manufacturer was looking for ways to optimize productivity in their wing cleaning assembly line. This massive operation consists of 13 (18´ X 180´) wing dipping tanks. Interruptions would be costly, and a quick "return to service" was key. The goal was to reduce the film-growth generated during the dipping procedure. Manufacturing plant personnel identified a film-growth developing on the drain trays and tank lids, from reactions with the different chemical baths. The film-growth problem was compounded by temperature changes and moisture condensation from transferring wing components between the heated dipping tanks. The film-growth, and accelerated corrosion began to clog the filtration systems, resulting in costly facility downtime.

SOLUTION:
In the beginning of 2004, Specialty Products, Inc. (SPI) provided three samples of its new chemical resistant polyurea (PTU™) to a plant engineer responsible for the dipping operations. To test the coating's performance, SPI suggested the engineer place the samples in the most corrosive and/or hazardous chemicals being used. The 3¨ by 4¨ plates of stainless steel, with a hole in them for mounting, were encapsulated with 100 mils of PTU™ polyurea and immersed for approximately 120 days. The airplane manufacturer performed several internal tests, and was impressed with the chemical resistant properties of the polyurea coating.

RESULTS:
To date, SPI's PTU™ chemical resistant polyurea coating has been in place at their facility for 5½ years and is still performing well. The PTU™ polyurea protected the drain trays and dipping tank lids. This allowed their recycling program to properly filter and recycle their wing cleaning mixture, reducing man hours, and the cost of replacing the solution in the dipping tanks. Plant officials were very pleased with the reduction of downtime and waste.

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