

**PROJECT:**

Aerospace Acid Wing  
Dipping Process - Tank Lining

**LOCATION:**

Fredrickson, WA

**OWNER:**

Northwest Plane Manufacturer

**APPLICATOR:**

Cascade Industries

**SYSTEM:**

PTU<sup>TM</sup> (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<sup>TM</sup>) 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<sup>TM</sup> 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<sup>TM</sup> chemical resistant polyurea coating has been in place at their facility for 5½ years and is still performing well. The PTU<sup>TM</sup> 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.

