

## Dulles International Airport

**Problem:** A major challenge for airport preventative maintenance is obtaining adequate access for the replacement of severely damaged and rapidly deteriorating pavement areas. These areas are exposed to the greatest stress due to the heavy share of traffic load. Dulles International Airport faced such a challenge in 2001: three rigid airfield pavement panels, in high-traffic areas, needed immediate repair without slowing down day-to-day flight operations.

**Factors for Consideration:** The main point of concern for Dulles's engineering team was speed of repair. The areas due for repair could not be shut down during regular hours and would have to be open during peak aircraft traffic times. This meant traditional repair (ripping the damaged sections and pouring new concrete) simply would not suffice. Dulles decided to go with The URETEK Method® of concrete pavement lifting in conjunction with pre-cast concrete panels and the URETEK Stitch-in-Time technology.

**Method/Process Applied:** URETEK's patented Stitch-in-Time technology uses 1/2" fiberglass inserts called stitches to bind adjacent concrete panels. Saw cuts are made in the perimeter of a panel, stitches are placed, and a glue-like polymer holds the stitch in place. In conjunction with the use of pre-cast panels, and The URETEK Method, Stitch-in-Time is the quickest complete, pavement repair systems in the industry.

**Result:** Pre-cast panels were poured off-site and delivered to the taxiway. The damaged sections were removed and the new panels put in their place. The URETEK Method was then used to bring the panels to grade. With the alignment complete, the stitches were installed to improve overall load transfer and improve panel strength and rigidity. The final results were fast, efficient runway/taxiway panel replacement without disruption of aircraft operations.

**Benefit:** The successful completion of this project gave Dulles International Airport a new way to approach taxiway repair. All construction could be completed during off-peak hours in the short time frame allotted to the crews. With pour-in-place panel replacement, Dulles would have suffered 14 to 21 days of 24 hour shut down. With pre-cast panels, the URETEK Method, and Stitch-in-Time used together, this project required only six days for completion. Dulles Airport operations was able to shave 65% of the time required to conventionally repair their runway problems and have absolutely no aircraft operations disruption. In essence, Dulles was able to restore their runway/taxiway surfaces back to specification at the lowest cost and least disruption possible. A 'win' for the Dulles operations organization, the airlines, airline passengers, and URETEK!

**Inexpensive, Fast, Quiet, Effective,  
Pavement Lifting and Soil Stabilization. CONTROL.**



**CASE STUDY PICTURES**



**Creating Pre-Cast Panels, Off-Site**



**Placing Panels, During Off Hours**



**Finished Product**