URETEK USA

ANDREWS AIR FORCE BASE RUNWAY REPAIR PROJECT

PROBLEM

LOCATION: ANDREWS AIR FORCE BASE, MARYLAND

SITUATION:

A significant dip (2" deep) had developed Runway 1L/19R at Andrews Air Force Base, Maryland. An engineering investigation revealed the settlement was caused by water infiltrating the pavement system and transporting soil particles through a leaking culvert underlying the runway. The settlement presented operational problems, particularly for small aircraft.

FACTORS FOR CONSIDERATION:

Runway 1L/19R is the primary runway for Air Force One. Disruptions to this runway cause far-reach impact. Consequently, U.S. Air Force engineers sought an alternative to reconstruction. URETEK USA provided an alternative that minimized runway downtime, security concerns, and upheaval of the President's schedule. In addition, URETEK USA delivered a solution that conservatively cost 50% than reconstruction.

LEADERSHIP

Leader in cost and time savings, accuracy and precision

Environmentally inert materials and processes

INNOVATION

Inventor of polymer-based technology in use today

Most patents in industry - Period

Ongoing engineering research and development

EXPERTISE

Developed the industry's most accurate, monitoring process

Developed URETEK 486 STAR material

Pioneered the URETEK Deep Injection Process

Most experienced technicians and best safety record in industry

PROVEN SUCCESS

85,000+ successful projects

20+ years experience solving complex soil/pavement problems

Industry-leading warranty and customer care

SOLUTION

URETEK USA's solution involved 5 key elements:

- Initial Slab Lifting Using High-Density Polyurethane

- URETEK Deep Injection® (UDI) Soil Stabilization

This unique process relies on a two-part polymer system, injected beneath the concrete through pre-drilled holes of 5/8-inch diameter (penny-size). The polymer system travels through tubing to elevations beneath the pavement surface characterized by weak soils (determined by cone penetration testing). Expansion of the polymer compacts the surrounding soils – eliminating voids in the soil mass and improving bearing capacity.

- Leaking Culvert Repair by Injecting Resin (from inside the culvert)

- Final Slab Alignment Using High-Density Polyurethane

- Pavement Joint and Crack Sealing Using Urethane Caulk

RESULTS

- URETEK USA realigned the 15 slabs fully encompassed in the 60′ x 88′ work area.

- URETEK USA stabilized the soft soils in the work area down to -14′ elevation (measured from the surface) using the UDI process.

- Acting as Prime Contractor, URETEK USA oversaw repair of the leaking culvert and pavement joint/crack sealing by hand-picked subcontractors.

BENEFITS

TRADITIONAL REPAIR METHODS
COST: $250,000 **REPAIR TIME:** 30 DAYS

URETEK USA REPAIR METHODS
COST: $125,000 **REPAIR TIME:** 10 DAYS

COST SAVINGS:	TIME SAVINGS:
$125,000	**20 DAYS**

Time Savings: Conservatively Reduced Runway Closure Time by 60% (versus the initial proposal of reconstruction).

Cost Savings: Conservatively Reduced Repair Costs by 50% (versus the initial proposal of reconstruction).

Performance: Repair was evaluated by USAF and their consultants in 2000, 2004, 2006, 2007 and found to be performing well each time.

Longevity: Sample excavated in December 2010 during a runway keel replacement project was still intact after 11+ years of service.

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