



GREATER BINGHAMPTON AIRPORT RUNWAY REHABILITATION BINGHAMPTON, NEW YORK

Application: The Broome County Department of Aviation operates the Greater Binghamton Airport as a medium-size hub for four air transportation providers. In 1998, the department used GlasGrid 8502 Detail Repair System to address localized distress in its crosswind 10/28 runway. Seven years later, airport managers again turned to the GlasGrid® Pavement Reinforcement System when it was time to fully rehabilitate the airport's main 16/34 runway.

The Challenge: The airport relies on one primary and one secondary runway for all takeoffs and landings. The runways and all other facilities are located on a mountaintop in a region of the country that experiences long, severe winters and extensive snowfalls. These conditions contribute



*Installation of the GlasGrid System
at Greater Binghamton Airport.*

to significant thermal cycling and freeze-thaw conditions that promote reflective cracking and thereby can compromise the structural integrity of unreinforced pavements.

Site Conditions: During the initial project design stage in 1998, project staff noted localized transverse cracking, surface oxidation, and asphalt brittleness. They observed similar but much more widespread conditions on the main 16/34 runway in 2005.

Alternative Solutions: Airports commonly address pavement issues by milling and replacing defective sections or overlaying large areas with new asphalt pavement. In both cases, cracks usually reflect back through to the surface fairly quickly. In 1998, airports managers were interested in trying a longer lasting strategy for improving the 10/28 runway. Based on the results of that project, they immediately turned to the GlasGrid System as the best way to ensure long-term performance for the main runway project in 2005.

The Solution: The project consultant recommended GlasGrid 8501 Complete Road System as a full-coverage solution for the 16/34 runway's entire 7,100-foot length.

"Staging was a key concern on this project," says Saint-Gobain Technical Services Manager Greg Lyons. "All work had to be done at night, and the

PROJECT HIGHLIGHTS

Project:

Greater Binghamton Airport

Location:

Binghamton, New York

Installation:

1998 and 2005–2006

Product/System:

GlasGrid® 8502, Detail Repair System
GlasGrid 8501, Complete Road System

Quantity:

90,000 sq yds GlasGrid 8501 (2005)
18,000 sq yds GlasGrid 8502 (1998)

Owners:

Broome County Department of Aviation

Design Engineer:

McFarland-Johnson Inc.

General Contractor:

Fahs Rolston Paving Corporation

Materials Supplier:

Ramsco

CASE STUDY



runway had to be buttoned up each morning and ready for traffic."

The general contractor's crew began the installation process by milling a designated section of runway surface to a depth of approximately 3 inches. They then air cleaned the exposed surface and filled the largest cracks with rubberized crack sealer. The crew then installed a 1.75-inch-thick P401 asphalt cement concrete (ACC) leveling course to create an appropriate surface to receive the



Installation was completed at night to minimize conflicts with airport traffic.

GlasGrid 8501 material. The following evening they used a specialized mechanical installer to unroll the grid on the leveling course. To dissipate crack energy and safeguard the reinforcement effect, they overlapped all transverse joints by 3 to 6 in. and longitudinal joints by 1 to 2 in.

Before proceeding further, the crew placed the self-adhesive grid into place by rolling it with a pneumatic-tired roller. This incremental process was repeated through-out the work zone until all of the runway's main traffic area had been completely rehabilitated.

The GlasGrid System Advantage: The GlasGrid System has been successfully used within asphalt overlays throughout the world to combat reflective cracking initiated by one or more of the following:

- Concrete pavement longitudinal and transverse joints
- Thermal loading
- Lane widening
- Cement-treated or stabilized layer shrinkage cracks
- Block cracks
- Asphalt construction joints

Additional Information and Services:

Tensar International Corporation, the leader in geosynthetic soil reinforcement, offers a variety of solutions for foundation and roadway projects. Our products and technologies, backed by the most thorough quality assurance practices, are at the forefront of the industry. Highly adaptable, cost-effective and installation friendly, they provide exceptional, long-term performance under the most demanding conditions. Our support services include site evaluation, design consulting and site construction assistance.

For innovative solutions to your engineering challenges, rely on the experience, resources and expertise that have set the industry standard for more than two decades.

For more information on the GlasGrid System or other Tensar Systems, call **800-TENSAR-1**, e-mail info@tensarcorp.com or visit www.tensar-international.com.

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