



HECTOR INTERNATIONAL AIRPORT FARGO, NORTH DAKOTA

Application: The Municipal Airport Authority operates Hector International Airport as a connecting hub for flights throughout the Midwest, West and South. In 1996, the Airport Authority investigated options for using high-strength interlayer mesh to prolong the pavement life of its main runway.

The Challenge: Runway 13-31 is exposed to harsh conditions on a year-round basis. With the average high temperature being 82°F in July and the average high temperature being 16°F in January, wide temperature swings, severe weather conditions and heavy aircraft loadings were taking a toll on the runway.



Installation of the GlasGrid System allows the runway to resist the migration of reflective cracking.

Site Conditions: The existing asphalt runway was becoming extremely oxidized and brittle, creating a safety hazard for aircraft during takeoffs and landings. The surface layer distress types included a combination of thermal, alligator, block, transverse and longitudinal cracks.

Alternative Solution: Airport management considered installing an asphalt overlay with no reinforcement, but concluded that thermal stresses would likely cause cracks to reflect back through to the surface within a few years.

The Solution: The GlasGrid® Pavement Reinforcement System was recommended as a discrete solution that could be installed in the runway's central corridor while minimizing overall project life cycle costs. The use of the GlasGrid 8501 reinforcement produced a strong interlayer solution in the area of highest wheel loading.

The GlasGrid 8501 Complete Road System features a 0.5 inch open aperture grid that allows large-particle aggregate to bond through from the upper layer into the underlying layer to maximize performance. The product's 100kN by 100kN tensile strength ensures that the reinforced area can resist crack migration under extreme conditions.

The rehabilitation began by milling a 50-foot wide by 4 inch deep corridor down the center of Runway 13-31, and properly preparing the exposed surface. Next, a 2 inch leveling course

PROJECT HIGHLIGHTS

Project:
Hector International Airport

Location:
Fargo, North Dakota

Installation:
August 1996

Product/System:
GlasGrid® 8501, Complete Road System

Quantity:
18,000 sq yds

Owner:
Municipal Airport Authority

Design Engineer:
Ultieg Engineers

General Contractor:
Northern Improvement Company

Materials Supplier:
Brock-White Construction Materials



was installed over the existing surface. After the leveling course cooled, the self-adhesive GlasGrid reinforcement layer was adhered to the leveling surface using a specialized mechanical installer. Finally, a 2 inch wearing course layer was installed. All work on the project was completed in one day with minimal impact on normal airport operations.

A follow-up distress survey indicated the GlasGrid Pavement Reinforcement System is delivering very good performance after more than 10 years of service with only minor cracking in the high wheel loading areas. In contrast, the areas reinforced with paving fabric are delivering only “good” performance – even though these sections of the runway experience much less load and wear.

System Advantage: Introduced in 1989, the GlasGrid System consists of stiff environmentally friendly fiberglass material coated with an elastomeric polymer. The grid is rolled out over a thin leveling course placed before the main asphalt overlay. With its pressure-sensitive adhesive backing, installation of the GlasGrid product is easy and generally considered the



The GlasGrid System is a more economical and longer lasting alternative to installing thicker overlays.

most expedient installed interlayer system available. 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:

Tensor International Corporation, the leader in geosynthetic soil reinforcement, offers systems for improving structures such as roadways, railroads, construction platforms and parking lots. 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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