GLASGRID®
ASPHALT REINFORCEMENT SYSTEM

Shreveport Airport (KDTN)

Shreveport, Louisiana

APPLICATION: At Shreveport Downtown Airport, Taxiway Foxtrot, which runs parallel with Runway 14-32, was one of the airport's most used taxiways. It was in need of a rehabilitation to specifically address the significant deficiencies that plagued this pavement. Greater loading strains had taken its toll.

THE CHALLENGE: Since Taxiway Foxtrot is located parallel to the main runway and situated on the terminal side of the runway, it is the preferred taxiway for the large proportion of plane maneuvers. This made it very difficult to provide maintenance to it without inconveniencing the valued users. The rehabilitation would need to be carried out efficiently and needed to perform effectively.

Examples of cracking at Taxiway Foxtrot

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SITE CONDITIONS: An inspection following 10 years of service indicated that the pavement had significant deficiencies such as large localized block cracking, alligator cracking directly in the landing gear paths, and it was riddled with both longitudinal and transverse cracks. The hot Louisiana sun had severely oxidized these asphalt pavements, leaving them brittle and prone to cracking under traffic loading during the cold winter temperatures.

ALTERNATIVE SOLUTIONS: Many times when airport pavements are in very poor condition, complete reconstruction is considered. However, due to financial costs, as well as the user's inconvenience, it was not the preferred option. Alternatively, the airport considered the commonly used strategy of removing and the replacing the oxidized surface asphalt with a double lift of new hot mix asphalt. Mr. Dennis Dean, the Project Engineer, stated this was not the ideal solution either, "One of the main concerns was the potential for the existing cracks to prematurely reflect through the new asphalt wearing course".

PROJECT HIGHLIGHTS

Project:
Shreveport Downtown Airport Taxiway Foxtrot

Location:
Shreveport, Louisiana

Installation:
August 2007

Product/System:
Glasgrid 8511

Owner/Developer:
Shreveport Airport Authority

Design Engineer:
AFJM, Inc.

General Contractor:
Best Yet Builders, LLC

Distributor/Installer:
Industrial Fabrics, Inc.
(Baton Rouge, LA)

THE SOLUTION:

The Shreveport Airport Authority approved the removal of 3.5" of old oxidized asphalt from the taxiway surface and replaced it with new asphalt pavement of the same thickness and included GlasGrid® 8511. GlasGrid 8511 is a pavement interlayer with a high modulus reinforcement element that reduces the potential for premature cracking. The GlasGrid® Pavement Reinforcement System was installed over a 1.5" leveling course and then covered with a 2" wearing course. By reinforcing the asphalt pavement with GlasGrid 8511, the wearing course was given a greater ability to resists tensile stresses and remain free of cracks for a longer duration.

In total, 21,000 SY of GlasGrid® 8511 was used to cover Taxiway Foxtrot and it was paved the same day it was installed. This impressed all of those involved with the project as it supported a very efficient paving operation, which generally leads to higher quality work. One of the important features of the GlasGrid product is that it can be easily incorporated into most paving projects without fear of site issues occuring at time of construction. In addition, the product's high quality pressure sensitive adhesive provides an immediate bond to the surface permitting the construction traffic to proceed without any delay over the GlasGrid.

THE RESULTS:

The condition of the taxiway was regularly monitor by the FAA and the airport authority. Seven years after installation, Mr. Dean summarized his findings in a communication that stated, "….the reinforced overlay has remained crack free and has met the expectations of our design." Mr. Dean concluded by adding, "It is our opinion that GlasGrid® 8511 provides excellent protection against reflective cracking in structurally sound pavements."

THE GLASGRID® SYSTEM ADVANTAGE:

Introduced in 1989, the GlasGrid System consists of stiff environmentally friendly fiberglass material coated with a specially formulated elastomeric polymer. It's considered the most expedient installed interlayer system available.

Taxiway after GlasGrid installation

GlasGrid 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 is the exlusive distributor in the Americas for GlasGrid System. As the leader in geosynthetic pavement reinforcement, we offer a variety of solutions for foundation and roadway applications. Our support services include site evaluation, design consulting and site assistance.

For innovative solutions to your site work 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, email info@tensarcorp.com or visit www.tensarcorp.com.

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