



NCAT Pavment Test Track

Opelika, Alabama

APPLICATION: Asphalt pavement reinforcement for National Center for Asphalt Technology (NCAT) test track.

THE CHALLENGE: The Alabama Department of Transportation requested that GlasGrid® 8501 be installed on the NCAT test track so that any construction difficulties or performance issues could be documented. In June 2000, GlasGrid 8501 was installed between a pair of two inch layers of stone matrix asphalt (SMA) on section W1 of the inaugural NCAT Pavement Test Track.



The GlasGrid Pavement Reinforcement System was installed at the National Center for Asphalt Technology (NCAT) pavement test track in Opelika, AL.

TESTING CONDITIONS: The entire track is supported by 20 inches of hot mix asphalt (HMA) base to isolate distresses to the top four inches. The first 100 feet of section W1 contained no reinforcement and acted as a control section for testing. The Marshall SMA test mix consisted of a 3/4 inch nominal maximum aggregate size, crushed granite and flyash mineral filler. A 6.2 percent SBR-modified PF76-22 liquid binder was specified. An emulsion tack coat of type CSS-1h was applied at a rate of 0.03 gallons per square yard before the placement of each lift of asphalt; the GlasGrid was placed after the application of the tack coat on the binder course. In 2006, the section was excavated and tested after 20 million ESALs of trafficking, which is the equivalent to more than 20 years of service for an interstate pavement.

2006 RESULTS: Following trafficking, longitudinal cracking was observed in the control test section. No longitudinal cracking was observed in the last 100 feet where GlasGrid was used to reinforce the asphalt. The cracking in the unreinforced area appeared along the centerline joint between the inside and outside lanes.

A core sample removed prior to the main excavation revealed that the GlasGrid was still intact and bonded to the sandwiching layers of the SMA mix (see photo next page). Buzz Powell, Test Track Manager of the NCAT organization, noted “GlasGrid did not create any problems during the installation of the product.”

2011 SITE FOLLOW-UP: In the fall of 2011, the NCAT fleet of triple trucks had run over six million miles around the 1.7 mile course of the test tack. During this period, over 40 million ESALs of

PROJECT HIGHLIGHTS

Project:
NCAT Pavement Test Track

Location:
Opelika, Alabama

Installation:
NCAT Test Track Section W1
June 2000

Product/System:
GG8501
GlasGrid System

Quantity:
300 square yards

Owner/Developer:
Auburn University

Product Manufacturer:
Saint-Gobain – ADFORS

Product Distributor:
Tensar International Corporation

accelerated pavement damage have been induced, the equivalent of approximately 60 years of load induced damage for the typical interstate.

The GlasGrid installation was examined once again. Due to the high quality of the SMA mix sandwiching the GlasGrid product, there was no significant difference in performance found between the first 100 ft (the control section) and the last 100 ft (the GlasGrid System treated section). However, longitudinal cracking was found in the control section along the centerline joint and between the inside and outside lanes while no longitudinal cracking was observed in the GlasGrid treated section. A slab was cut from the pavement section and revealed that the GlasGrid product was intact and still bonded to the SMA sandwiching layers after 5-1/2 years and 20 million additional ESALs since the first pavement excavation.



Core sample showing GlasGrid 8501 bonded to the sandwiching layers of SMA mix.

2018 SITE FOLLOW-UP The NCAT site was visited once again in 2018 after 60 million ESALs of loading. Observations revealed that the unreinforced section had more cracking present in addition to the joint cracking first observed in 2006. Also, there was now random cracking within the lane area as well as additional cracking extending from the centerline cracking. As for the GlasGrid reinforced section, cracking was now appearing, however, it is limited to only the 18 year old construction joint.



During the 2018 site visit, additional cracking was observed in the unreinforced section.



The GlasGrid reinforced section was also evaluated in 2018. After 60 million ESALs, cracking was starting to appear but limited to the 18 yr. old construction joint.

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.

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, email info@tensarcorp.com or visit www.tensarcorp.com

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