



ADOT I-10 WIDENING PROJECT CASA GRANDE, ARIZONA

Application: The Arizona Department of Transportation (ADOT) used the Spectra® Roadway Improvement System, a mechanically stabilized layer incorporating Tensar® TriAx™ Geogrid, to create an unyielding and stable test construction platform over a short section of weak soils on the Interstate 10 roadway widening project.

The Challenge: ADOT engineers and Ashton Company, Inc., personnel discovered a section of problem soils approximately three miles long both after the initial geotechnical investigation and during construction. To meet required compaction specifications, they began to overexcavate the subgrade to remediate problem areas. During this

process, they were contacted by Aaron Schlessinger, regional project consultant for CONTECH Construction Products, Inc., who suggested using the Spectra System as a faster, more affordable option for tackling areas with weak subgrade.

Site Conditions: The subgrade consisting of highly saturated, silty soils exhibited very low shear strength (R-values less than 20) which was measured using a dynamic cone penetrometer (DCP).

Alternative Solutions: To compensate for the lower subgrade support value, Ashton personnel were removing up to 36 in. of saturated soils, drying the material and then recompacting it along with more stable fill and aggregate base. With this approach, Ashton soon encountered problems finding adequate space to stage and dry the unstable material. This issue, along with concerns for remediation expense and construction delays, prompted the project participants to incorporate the Spectra System utilizing TriAx Geogrid as part of a mechanically stabilized layer (MSL) test section.

“Looking at the geotechnical report for the next phase of work, we were anticipating a lot of saturated soils with little bearing pressure,” says Carter McKune, ADOT senior resident engineer. “Those conditions were prompting us to look at alternatives to overexcavation.”



Tensar® TriAx™ Geogrid delivered an affordable option to remediate problem areas with weak soils.

PROJECT HIGHLIGHTS

Project:

Structural Section Enhancement

Location:

Interstate 10 South of Picacho Peak

Installation:

April 2009

Product/System:

Spectra® Roadway Improvement System
Incorporating Tensar® TriAx Geogrid

Owner/Developer:

Arizona Department of Transportation (ADOT)

Design Engineer:

ADOT Intermodal Transportation Division

General Contractor:

Ashton Company Inc.

Materials Supplier:

CONTECH Construction Products, Inc.



UNPAVED APPLICATION

CASE STUDY

The Solution: The test section consisted of the Spectra System with one layer of Tensar TriAx Geogrid reinforcement. The design allowed the contractor to bridge the saturated soils by placing the TriAx Geogrid directly on the in-situ subgrade.

“Minimizing time-consuming excavation requirements is a key advantage of the Spectra System with TriAx Geogrid,” says TIC regional manager Lars Nelson. “Testing shows it is a more ‘3-D’ product, which provides further base confinement and strength.”

Ashton completed the installation by removing 20 in. of soil and leveling, as well as rolling the subgrade. They covered the exposed subgrade longitudinally with the TriAx Geogrid followed by 12 in. of crushed aggregate base (CAB) and 8 in. of asphalt base and wearing course.

“The TriAx Geogrid worked really well in the area where we tried it,” says Jim Tidwell, ADOT transportation engineering specialist. “There was no pumping or collecting. Based on how it went in, it would have been a big time saver on the other areas with wet soils.”

The test section provided performance that was equivalent to the areas that had been treated with traditional methods.

The Spectra System Advantage: More owners are selecting the Spectra System to not only simplify and speed construction while increasing the performance of pavement structures but also to decrease labor and equipment requirements. Additional advantages include reduction of aggregate fill thickness as well as a reduction in undercut, overexcavation and removal requirements.

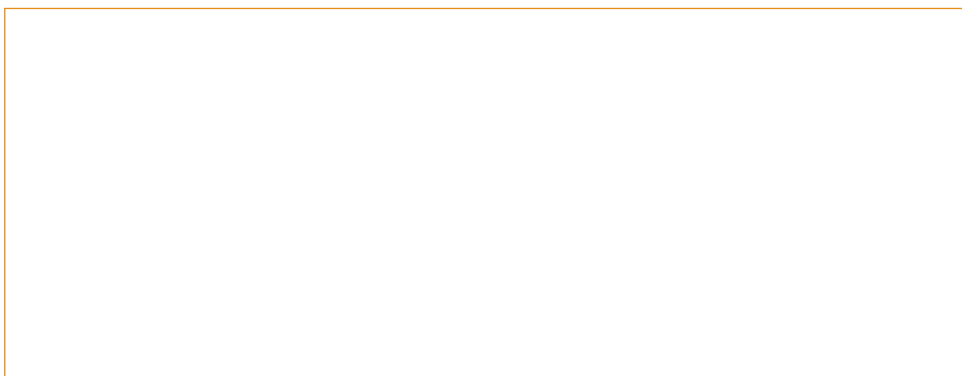
Additional Information and Services:

Tensar International Corporation, the leader in geosynthetic soil reinforcement, offers systems for improving structures such as roadways, railyards, 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 Spectra Roadway Improvement System or other Tensar Systems, call **800-TENSAR-1**, e-mail info@tensarcorp.com or visit www.tensar-international.com.

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