



## San Diego International Airport Parking Lot

### San Diego, California

**APPLICATION:** The San Diego Regional Airport Authority operates the busiest single-runway commercial airport in the United States. For this project, it sought bids to relocate and expand two employee surface parking lots to a different section of the airport campus.

**THE CHALLENGE:** The client needed a construction strategy for Lot 6 and Lot 8 that would be affordable, efficient, and reliable despite poor subgrade conditions.

**SITE CONDITIONS:** The airport is located next to the San Diego harbor. The subgrade soils consist of clay and sand with pockets of shallow groundwater with a resistance value of 10 (R-Value = 10).



*Tensor® TriAx® Geogrid allowed for an optimized pavement section to reduce the aggregate base layer by 45% while providing superior base confinement.*

**ALTERNATIVE SOLUTION:** Standard construction methods would have entailed installing an 11-inch-thick aggregate base in combination with an asphalt top layer. The owner decided not to pursue this approach because of concerns over cost, construction scheduling and life cycle performance.

**THE SOLUTION** The Airport Authority instead decided to use the Spectra® Roadway Improvement System, a mechanically stabilized layer incorporating Tensor® TriAx® TX7 Geogrid, as a lower cost, longer lasting alternative to using a thick base layer.

“The TriAx Geogrid is a breeze to install,” says Project Superintendent Larry Miller of Hazard Construction, the General Contractor on the project. “We would normally install one foot of aggregate. With this geogrid, we were able to install one million square feet of parking on just six inches of compacted aggregate. We had areas with jello-like subgrade and had no problems bridging that stuff.”

Hazard Construction began the installation by removing the subgrade soil and leveling and rolling the subgrade. Next, they covered the subgrade with TriAx TX7 Geogrid. They overlapped each row by 18 inches and loosely secured them together using standard zip ties. To prepare the base, they installed 6 inches of Class 2 aggregate base and vibrated it to 95 percent compaction. With the base prepared, they were able to install two 2-inch lifts of hot asphalt mix. In areas with significant groundwater and soft soils, they excavated the saturated material, installed an additional layer of TX 7 Geogrid, and covered it

### PROJECT HIGHLIGHTS

**Project:**

San Diego International Airport  
Parking Lot

**Location:**

San Diego, California

**Installation:**

Lot 6: November 2012  
Lot 8: January 2013

**Product/System:**

Tensor® TX7 Geogrid

**Quantity:**

1,000,000 sq ft

**Owner/Developer:**

San Diego Regional Airport Authority

**Design Engineer:**

Kleinfelder

**General Contractor:**

Hazard Construction Company

**Materials Supplier:**

Tensor International Corporation

with aggregate to return the subgrade to the required profile depth.

“The TriAx Geogrid’s rib has a higher profile and the grid has a unique hexagonal shape that gives 360 degree load distribution,” says Tensar International Corporation regional manager Lars Nelson. “These properties allowed the project engineer to optimize the pavement section, reducing the aggregate base layer by 45 percent, while still providing superior base confinement and strength. This advantage allowed the contractor to install a single lift of aggregate base material on top of the TriAx Geogrid, which saved approximately 15,000 cubic yards of aggregate base material and 1,200 aggregate base trucks on the project while also increasing the speed of construction.”

Miller says he was skeptical about using TriAx Geogrid at first. “I thought it wouldn’t work. But a year later, the parking lots look great. The stuff is amazing.”

**THE SPECTRA SYSTEM ADVANTAGE:** Owners are selecting the Spectra System incorporating TriAx Geogrid to optimize pavement sections to:

- Simplify and speed construction while increasing the performance of pavement structures
- Decrease labor and equipment requirements
- Reduce aggregate fill thickness
- Reduce undercut, overexcavation and removal requirements
- Improve durability by changing the dynamics of load interaction with the subgrade and more evenly distributing load pressures.
- Enable construction to proceed even in difficult working conditions.



*By installing TriAx Geogrid, approximately 15,000 cubic yards of aggregate base material was saved while also increasing the speed of construction.*

#### **ADDITIONAL INFORMATION AND SERVICES:**

Tensar International Corporation, the leader in geosynthetic soil reinforcement, offers systems for improving structures such as roadways, rail yards, 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 three decades.

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**For more information on the Spectra System or other Tensar Systems, call 800-TENSAR-1, email [info@tensarcorp.com](mailto:info@tensarcorp.com) or visit [www.tensarcorp.com](http://www.tensarcorp.com).**

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