



## INYOKERN AIRPORT INYOKERN, CA

**Application:** The Indian Wells Valley District airport authority operates Inyokern Airport in a remote corner of the Mojave High Desert. This airport is designed to land almost any class of aircraft. In 1995 the airport authority needed to rehabilitate one of its runways in order to maintain this capability.

**The Challenge:** The Mojave High Desert climate experiences sudden and extreme temperature shifts. Inyokern's highest recorded monthly average temperature is 103°F in July and the lowest monthly average temperature is 30°F in January. The high thermal stresses resulted in serious cracking and degradation in the surface of Runway 15-33.



*Reinforcing the runway with the Glasgrid System retards the propagation of reflective cracks.*

**Site Conditions:** The runway was becoming extremely oxidized and brittle because of the harsh climate. The surface layer included thermal, alligator, transverse and longitudinal cracks with many of the transverse cracks up to 1 in. wide. The airport authority was concerned that these defects might affect aircraft movement and safety.

**Alternative Solution:** The airport authority considered adding a thicker overlay to the runway, however, this approach would have been very expensive. Experience also suggested that this approach would provide only a temporary solution since thermal stresses were likely to cause the thermal cracks to reflect back through to the surface at an approximate rate of 1 in. per year.

**The Solution:** The GlasGrid® Pavement Reinforcement System was recommended as a lower cost, longer lasting alternative to the installation of a thicker overlay. Reinforcing the runway with GlasGrid® 8501 would produce a strong interlayer solution capable of resisting the migration of reflective cracking.

During a return site visit on January 31, 2007, it was observed that the GlasGrid reinforced pavement had experienced only minor cracking after more than 11 years of service and thermal exposure. In contrast, the areas without the GlasGrid System demonstrated numerous cracks reflecting through to the surface. In these areas the cracking was more extensive and of greater size (up to 1 in. in width).

### PROJECT HIGHLIGHTS

**Project:**  
Inyokern Airport

**Location:**  
Inyokern, California

**Installation:**  
May 1995

**Product/System:**  
GlasGrid 8501, GlasGrid Pavement Reinforcement System

**Quantity:**  
18,000 square yards

**Owner:**  
Indian Wells Valley District Airport

**Design Engineer:**  
Hodges & Shutt and Kleinfelders

**General Contractor:**  
Granite Construction Company,  
Bakersfield, California

**Materials Supplier:**  
Road Solutions

CASE STUDY



Airport general manager Scott Seymour stated, "Prior to the rehabilitation of Runway 15-33, we were dealing with thermal transverse cracks. The use of the GlasGrid System in the rehabilitation overlay has resulted in delaying the propagation of these cracks significantly. Our experience with the GlasGrid System has been very good, and when a similar need arises in the future, we will certainly consider the use of this product again."

**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 System for reinforcement is generally considered



*The GlasGrid reinforced pavement had experienced only minor cracking after more than 11 years of service.*

the 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:**

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 GlasGrid System or other Tensar Systems, call **800-TENSAR-1**, e-mail [info@tensarcorp.com](mailto:info@tensarcorp.com) or visit [www.tensar-international.com](http://www.tensar-international.com).

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