What are AllianceGeo RG Geogrids?
AllianceGeo RG geogrids are used to help retard reflective cracking in flexible and composite pavements. These products derive their reinforcement benefits from extremely stiff, fiber-glass strands which are coated with a polymer and then knitted together to form a grid structure. Adhesive material on the underside of the geogrid helps expedite installation and ensures a firm bond between the asphalt layers above and below.

How do AllianceGeo RG Geogrids work?
When an overlay is placed over an existing cracked pavement, the cracks will eventually be reflected at the surface. The AllianceGeo System effectively allows two components to form a composite material i.e. the tensile strength of the geogrid combines with the compressive strength of the asphalt. Cracks propagating upward are intercepted by the geogrid and prevented from immediately migrating further, thus extending the life of the overlay (2 to 3 times) and increasing the period between major rehabilitation events.
What kind of cracks can be treated using the AllianceGeo Pavement Interlayer System?

The four main types of reflective cracking are block cracks, thermal cracks, concrete pavement joint cracks and lane widening cracks. The AllianceGeo System can be used to retard the propagation of each of these. A full range of products are available to ensure that a specific crack problem can be treated with maximum effect. Further details on which particular AllianceGeo product should be used are available upon request.

What long-term cost savings can be attained?

For a relatively small increase in overlay cost, significant long-term savings can result from the use of the AllianceGeo Pavement Interlayer System.

The cost analysis presented below is for a typical road width and current material costs. As can be seen from this example, for a modest initial cost increase, long-term cost savings resulting from the use of the AllianceGeo Pavement Interlayer System can be significant. In addition, this approach results in less road closure time in the future.

COST ANALYSIS: AC overlay for road 32’ x 1 mile

<table>
<thead>
<tr>
<th>Without Geogrid Reinforcement</th>
<th>With Geogrid Reinforcement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Procedure</td>
<td>Cost ($)</td>
</tr>
<tr>
<td>2” A.C. Overlay</td>
<td>137,280</td>
</tr>
<tr>
<td>15 yr Mill/Overlay</td>
<td>137,280</td>
</tr>
<tr>
<td>30 yr Mill/Overlay</td>
<td>137,280</td>
</tr>
<tr>
<td>TOTAL COST</td>
<td>411,840</td>
</tr>
</tbody>
</table>

SAVINGS: $153,560 (37%)
Case Studies

MAIN STREET IN DOWNTOWN OTHELLO, WA
CLIENT: The City of Othello, WA
ENGINEER: Gray and Osborne
PRODUCT: AllianceGeo RG1010
DETAILS
The main street running through the City of Othello has been subjected to busy traffic over many years. This resulted in extensive reflective cracking and general pavement fatigue. The original design for rebuilding the failing street called for conventional “mill and overlay” but in the end, an AllianceGeo glass-fiber geogrid was incorporated into new layer of asphalt. The product was used to increase the life of the overlay and thereby reduce future maintenance costs.

PORT OF SEATTLE, TERMINAL 10, SEATTLE, WA
CLIENT: The Port of Seattle
CONTRACTOR: IMCO General Contractors
PRODUCT: AllianceGeo RG2010
DETAILS
Terminal 10 in the Port of Seattle is underlain by various contaminated soils. When the time came to reconstruct the terminal, the client elected to deal with possible contamination issues at the same time. The solution was to cap the existing soils with a 10 inch thick layer of hot mix asphalt concrete. The Port realized that if cracking of the asphalt occurred in the future, groundwater would seep into the sediment too quickly to properly contain it. The AllianceGeo Pavement Interlayer System was used to help retard reflective cracking in the new asphalt.

WALLACE KNEELAND BOULEVARD, SHELTON, WA
CLIENT: The City of Shelton
PRODUCT: AllianceGeo RGC1010
DETAILS
In order to address several problems at the same time, The City of Shelton elected to adopt a solution that incorporated an AllianceGeo RGC1010 product; this is a geocomposite formed by bonding a lightweight non-woven geotextile to the bottom of a glass-fiber geogrid. In addition to reducing future reflective cracking, the client was also able to reduce the thickness of the asphalt whilst maintaining the same design life. Once the asphalt spray soaked into the geotextile, it helped form an impermeable membrane thus minimizing the flow of water into the underlying pavement structure.