

Tensar TriAx Geogrids: Free-Draining Separation Barrier Between Granular Fills and Subgrades

The use of geogrids for stabilizing granular materials such as aggregate and sand is well documented. One aspect that is less well known is that Tensar TriAx Geogrids can also provide a separation barrier between these types of fills and natural subgrade materials, when established filter criteria are met.

FULL-SCALE LABORATORY TESTS

Tensar Geogrids have been used for subgrade stabilization for over 30 years. During this time, they have been subjected to extensive testing by a variety of independent agencies to assess their stabilization and separation benefits.

Studies such as FHWA/MT-99-001/8138 and DOT/FAA/RD-92/25, conducted by the Department of Civil Engineering at Montana State University and the U.S. Army Corps of Engineers, respectively, concluded that a properly graded aggregate layer stabilized with Tensar Geogrids prevented mixing of the subgrade and base coarse aggregate, and also mitigated upheaval of the subgrade into the base material.

FIELD DEMONSTRATIONS

The ability of geogrid to separate granular materials and subgrade soil has also been demonstrated in the field. In the example shown here, the geogrid was placed over a fine-grained subgrade below the base course. After 11 years of use beneath heavy equipment and fully-loaded trucks, the base course was exhumed to observe if there was significant intermixing of the subgrade and aggregate fill material. The photo shows geogrid effectively maintained separation.



The boundary between the base and the subgrade remains distinct 11 years after installation. Tensar Geogrid was the only material used to separate the base and the subgrade.

For more information about using TriAx Geogrid or FilterGrid for stabilization and separation, please contact **George Charalambous** at (404) 435-5778, email gcharalambous@tensarcorp.com or visit www.tensarcorp.com.

The successful use of TriAx Geogrids with clean, well-graded sand has also been observed on many projects across the State of Florida. On multiple occasions, TriAx Geogrids were installed directly on top of saturated in situ soils with a layer of clean sand to establish stability and maintain adequate filtration and separation, as shown here.



Tensar TriAx Geogrid being installed as a stabilization and separation layer between clean sand and a saturated natural subgrade.

FILTERGRID: ANOTHER GREAT ALTERNATIVE

Although TriAx Geogrids frequently provide adequate confinement of granular fill to achieve both filtration and separation, there are times when specifiers recommend a geotextile in conjunction with the geogrid. FilterGrid provides the superior performance of Tensar's TriAx technology along with the added assurance of a non-woven geotextile – all in a single composite product.

BENEFITS OF USING FILTERGRID:

- ▶ **Simple and Efficient:** Rather than installing a geotextile and TriAx in two separate steps, FilterGrid deploys as a single layer, saving time and labor costs.
- ▶ **Economical:** Optimizes the structural thickness to save time and money.
- ▶ **Multi-Functional:** Provides stabilization, filtration, and separation of the granular fill material.

