

## TriAx® | FilterGrid™

### FilterGrid: The Single Composite Solution

Combining TriAx Geogrid's superior performance with the separation of a non-woven geotextile

When stabilizing paved or unpaved structures it is important to not only consider the appropriate geogrid product and thickness of granular fill, but also whether adequate filtration and separation of dissimilar materials will be maintained throughout the life of the structure. While Tensar TriAx geogrid frequently provides adequate confinement of the 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 patented TriAx technology along with the added assurance of a non-woven geotextile – all in a single composite product.

#### Benefits of FilterGrid

- ▶ **Multi-Functional:** Provides aggregate stabilization, filtration, and separation.
- ▶ **Economical:** Optimizes the structural thickness to save time and money.
- ▶ **Eco-friendly:** Permanent, safe alternative to the use of chemical stabilization agents.
- ▶ **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.

#### How does FilterGrid Work?

FilterGrid stabilizes working surfaces, such as paved and unpaved roadways, airfields, crane pads and other working surfaces by providing confinement, separation and filtration. FilterGrid combines the stabilization benefits of TriAx with the separation and filtration benefits of a non-woven fabric.



*The high profile ribs and nodes of TriAx geogrid allow full aggregate strikethrough when combined with a nonwoven geotextile..*

TriAx's unique structure provides a high degree of in-plane stiffness through a mechanism known as lateral restraint. Lateral restraint is the ability to confine and stabilize aggregate particles within the plane of the geogrid. As granular base courses are stress-dependent materials, the confinement offered by properly designed, stiff geogrids improves the modulus of an aggregate material, improves load distribution, and maintains that modulus over a much longer period of time than an unstabilized aggregate. This confinement improves speed of construction, reduces fill requirements, and enhances the performance and durability of these working structures over time.



## Case Study: Glenchamber Wind Farm

**The Challenge:** Renewable energy firm RES needed to build a new access road and tracks, plus improve public highways to allow construction and maintenance traffic (including freightliner trucks carrying wind turbine sections) to reach the site of Glenchamber Wind Farm. As the site is surrounded by peat bogs, the access roads and wind farm tracks had to be capable of supporting heavy loads, while being economic to build.

Digging out peat and replacing it with site-worn granular material to form a stable road foundation would have been time-consuming and expensive, so Luce Bay Group and its geotechnical consultant JNP Group worked with Tensar to come up with an alternative design.

**The Solution:** The access road and wind farm track design incorporated both Tensar's TriAx geogrid and Tensar's TriAx FilterGrid. The design met project requirements, while minimizing the use of aggregate compared with a traditional 'dig and replace' solution.

These 'floating roads' were capable of supporting the heavy construction traffic and will also perform throughout the wind farm's operational life.

### THE TRIAX FILTERGRID SOLUTION

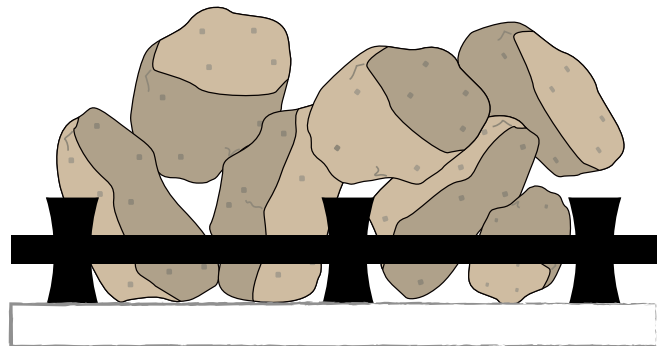
The non-woven filter fabric laminated to TriAx provides separation and filtration. Fine grained subgrades, especially those consisting of low plasticity silts and clays, present separation and possibly filtration needs. Tensar's Spectra-Pave Software provides tools to assess if a separator is needed. This tool is based on guidance outlined in many resource documents including those of Cadergren, Terzaghi, Peck and Mesri where piping and uniformity ratios are set based on the soil type.

### COMPLIMENTARY PROJECT EVALUATION

In addition to design tools and software, Tensar offers complimentary project evaluation and site assistance to determine the best solution for your project. To get started and have us run a design for you, contact us by calling **800-TENSAR-1** or e-mailing [info@TensarCorp.com](mailto:info@TensarCorp.com).

*"Tensar's products minimized the use of aggregate over areas of soft peat and firmer ground, delivering roads that performed immediately, allowing the project to be completed in time for the arrival of the turbines".*

David McCracken, Project Manager  
Luce Bay Group



### FilterGrid - High Profile Lamination

The thick rib height and high aspect ratio of TriAx geogrid allows for improved interlock of aggregate. In combination with the light lamination of the geotextile, this eliminates the trampoline effect and results in better performance compared to fully laminated biaxial geogrid composites.



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