

TriAx[®]

Revolutionizing Railway Ballast & Sub-Ballast Stability, durability, and economy with Tensar TriAx Geogrids



SUB-BALLAST STABILIZATION

- ▲ Reduce construction time and costs
- ▲ Permits up to 50% reduction in sub-ballast thickness (with decrease in potential for differential settlement)
- ▲ Provide uniform support over varying conditions
- ▲ Proven performance in trials and monitored installations
- ▲ FilterGrid™ combines TriAx Geogrid's superior performance with the separation of a non-woven geotextile for simplified single layer installation

BALLAST STABILIZATION

- ▲ Reduces track deflection
- ▲ Large aperture product stiffens the ballast layer and minimizes aggregate movement
- ▲ Extend maintenance cycles by 2-3x or more
- ▲ Reduces life cycle costs
- ▲ Quick and easy installation for tight closure windows



Maintain track geometry



Reduce trackbed maintenance



Increase bearing capacity over soft soils



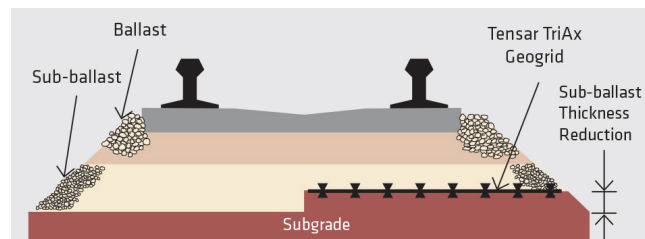
Sub-ballast Stabilization Project Frac Sands and Transload Facility Solving for High Aggregate Cost and Short Construction Window

An engineer designing roadway and rail sections for a facility in Oklahoma faced high aggregate costs and a narrow construction window. Tensor was contacted to help provide a cost-effective and structurally competent alternate design.

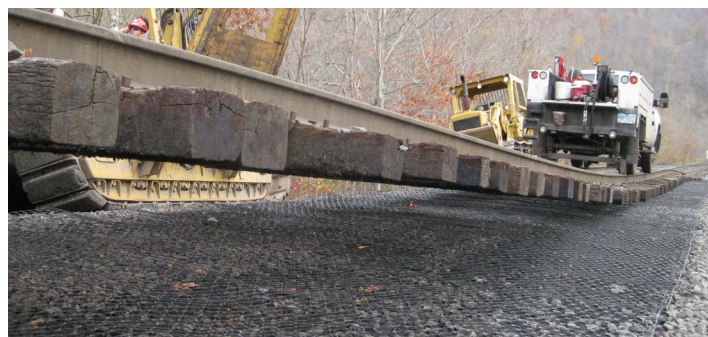
The rail areas were originally designed with 12 inches of subballast. By stabilizing the aggregate with TriAx Geogrid, the sub-ballast thickness was reduced to six inches with a 30% higher factor of safety. No changes were made to the ballast thickness.

The transload areas were originally designed with 22 inches of aggregate. By including TriAx in the design, the aggregate thickness was reduced to 10 inches without compromising performance.

Reducing the required aggregate by more than half saved the Owner significant time and money. Tensor provided on-site QC observation during construction as requested by the engineer. All project stakeholders were pleased with the results and continue to work with Tensor to lower the costs of their projects.



This diagram shows an example of aggregate reduction when the sub-ballast is stabilized with TriAx Geogrid.



TriAx Geogrid was installed in a test section of ballast in Ohio.



The geogrid was examined 9 months after installation and was still performing as designed.

Ballast Stabilization Project Railway Embankment and Ballast Pocket Stabilization in a Soft Soil Environment

In Ohio, a Class I track was experiencing excessive settlement and track deformation caused by poor subgrade conditions, high water table and poor drainage. Maintenance and surfacing were required every one to two weeks. Despite intensive maintenance, a five mph speed restriction was required.

TriAx Geogrid was installed in a test section of track. As a result, restrictions were lifted and 40 mph speed was restored on the revenue freight rail. Track maintenance was extended from weekly to yearly following TriAx installation. Yearly track maintenance continues after three years of in freight service.

**For more information visit:
info.tensarcorp.com/rail-solutions**

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