

MYTH VS. FACT

Tensar Geogrids

MYTH

#1

Tensile strength is the most important factor in performance.

FACT

Tensile properties do little to enhance performance.

In February of 2003, the ACOE released Engineering Technical Letter (ETL) 1110-1-189. "In the early stages of research regarding geogrid reinforcement of pavement systems, the tensioned membrane effect was thought to be the primary reinforcement mechanism. However, subsequent investigations have shown that reinforcement benefits are obtained without significant deformation of the pavement section. Thus, lateral restraint has been identified as the primary reinforcement mechanism..." as confirmed by many subsequent full scale tests of pavements.

MYTH

#2

Chemical stabilization works better than geogrids.

FACT

Ingios Geotechnics completed testing of three pavement sections along Cabeza Road in 2014 and then again in 2015. Two TriAx (TX) geogrid stabilized sections (both TX130S and TX5) and a control section were tested.

The subgrade for all sections consisted of a cement treated subgrade (6% nominal by dry weight).

Immediately after construction, no benefit was observed in the TriAx stabilized sections. However, in 2015, after a year of weather cycles (i.e. rain, temperature changes), the sections were again tested and the TriAx stabilized sections were providing 2-5 times the support compared to the control section. In other words, TriAx will be there for the long haul.

In 2018, the University of Texas at Austin conducted a pavement condition survey, which indicated that the TriAx stabilized sections had reduced environmental cracking in the road surface compared to the chemically stabilized control section.

MYTH

#3

Geogrids cannot be used with smaller sized aggregate or sand.

FACT

When stabilizing aggregate layers, The FHWA (2008) recommends that the aperture size of the geogrid not exceed the average (D50) particle size of the fill material placed in contact with the geogrid. SpectraPave takes this into consideration within the Data Input Screen. Once the particle size is entered, the software automatically selects a geogrid matching the D50 criteria.

- 2008 FHWA

MYTH

#4

A fabric is required with a geogrid to achieve separation.

FACT

If the correct gradation of stone is used, with some contents of sand, you will get the filtration desired.

Tensar can perform the calculations (Piping Ratio for Clays, and Average Size for Silts) to determine if a non-woven geotextile is necessary. TriAx FilterGrid, which combines TriAx with a nonwoven separator, can be considered if separation is required.



MYTH

#5

Geogrid is difficult to install.

FACT

Tensar TriAx Geogrids do not require any special equipment. Typically it can be rolled out easily by 2 workers. Tensar is glad to provide on-site assistance to help answer questions and discuss project specific needs.



MYTH

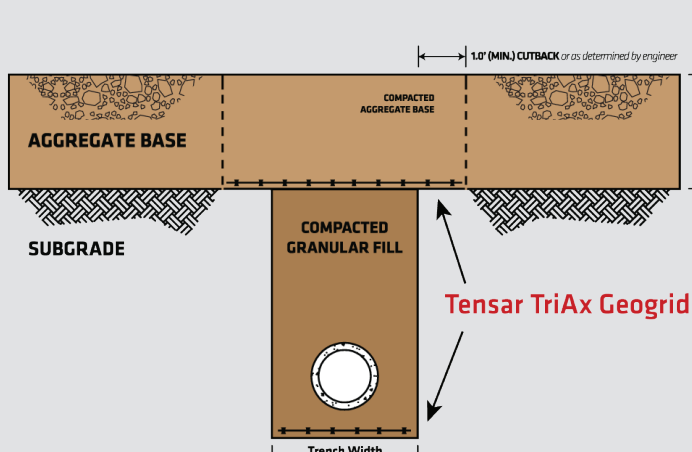
#6

Geogrids cannot be used when utilities are in the road since you cannot cut through the grid.

FACT

TriAx Geogrid has been used in many roads where trenching was required. Cutting /trenching through TriAx is quick and it does not pull out roadway materials. In fact, it helps keep materials together and minimizes the potential of pavement undermining.

VIDEO: See for yourself how to trenching through TriAx www.TensarCorp.com/trenching



MYTH

#7

Geogrids can only be used for soft soils.

FACT

According to AASHTO designation R 50-09: Geogrids provide significant improvement compared to a traditional roadway design with no geosynthetic. This is true for all soil strengths. Recent testing performed by the US Army Corp of Engineers and others have demonstrated that TriAx provided significant benefit over firm to stiff subgrades.

Standard Practice for

Geosynthetic Reinforcement of the Aggregate Base Course of Flexible Pavement Structures

AASHTO Designation: R 50-09¹

1. SCOPE

- 1.1. This standard practice provides guidance to pavement designers interested in incorporating geosynthetics for the purpose of reinforcing the aggregate base course of flexible pavement structures. Geosynthetic reinforcement is intended to provide structural support of traffic loads over the life of the pavement.
- 1.1.1. For the purpose of this guide, base reinforcement is the use of a geosynthetic within, or directly beneath, the granular base course.
- 1.1.2. When referring to geosynthetics, the discussion is limited to geotextiles, geogrids, or geogrid/geotextile composites.

