

## Product Evaluation

### RE: Review of Tensar TriAx Geogrids – TX5, TX7, TX160

#### **PRODUCT**

Tensar TriAx Geogrids – TX5, TX7, TX160, are manufactured Tensar International based in Alpharetta, GA. Company website: <https://www.tensarcorp.com/>.

### **VENDOR CLAIMS AND INFORMATION**

#### **CLAIMS:**

Tensar TriAx Geogrid is a new geogrid. The triangular structure of TriAx geogrid, coupled with the increased rib thickness and junction efficiency, greatly improves aggregate interlock and confinement – leading to optimal structural performance of the mechanically stabilized layer.

#### **DESCRIPTION:**

Biaxial geogrids offer tensile stiffness primary in 2 directions. TriAx Geogrids have 3 principal directions of stiffness that are further enhanced by their rigid triangular geometry, delivering high radial stiffness throughout the full 360 degrees. The 3-dimensional load distribution acts in a radial manner at all levels within the aggregate. They are manufactured from an extruded sheet of polypropylene. Each sheet is punched with an array of holes and then stretched to create triangular apertures with greater confinement characteristics. This process yields a geogrid with 100% junction efficiency to offer optimal rib-to-rib stress transfer; effective for paved and unpaved road applications.

#### **POTENTIAL USAGE:**

Superior performance for paved and unpaved roads; and reduction of excavation and pavement component thickness requirements.

#### **STANDARDS:**

ASTM D4759-02 – Roll value	GR1-GG2-87 – Load transfer and ultimate strength
USACOE – Torsional rigidity	ASTM D6637-01 – Radial stiffness and tensile stiffness
Giroud-Han Method – unpaved road	AASHTO 1993 Design Guide – paved road
EPA 9090 – Loss of strength due to chemical environment	
EPA 9090 – Loss of strength due to ultra-violet light	

### **ALBERTA TRANSPORTATION AND ECONOMIC CORRIDORS COMMENTS**

#### **EXPERIENCE:**

Alberta Transportation and Economic Corridors has trialed TriAx Geogrid at HWY63:06 19.319KM – 20.740KM, but the result was inconclusive.

#### **APPLICATION STANDARDS:**

Alberta Transportation does not have a standard for geogrids. All geogrids applications must be properly designed by a Professional Engineer (e.g., registration with APEGA). The use of extensible reinforcement in MSE bridge abutments or wing walls shall conform to the Standard Specifications for Bridge Construction Section 25, Mechanically Stabilized Earth Walls.

#### **RECOMMENDATIONS:**

Tensar TriAx Geogrids – TX5, TX7, TX160, be listed as a Reviewed Product under Alberta Transportation and Economic Corridors Products List, Geosynthetics – Geogrids – Tri-Axial Geogrid - Proprietary, based on the information provided.

**TRIAL PROJECTS**

TriAx-TX5 at Beaver Hill Road Lac La Biche,  
Geo Grid Test Section HWY63:06 19.319KM – 20.740KM

Rishi

cc New Product Evaluation Group – Roger Skirrow, Wayne Mah