

## Product Evaluation

### RE: Review of Review of Geocell/Geo Cell/Envirogrid

#### **PRODUCT**

The Geocell/Geo Cell/Envirogrid is a cellular confinement system consisting of flexible, expandable high density polyethylene panels that are easily transported, handled and installed. Geocell/Geo Cell/Envirogrid is fabricated by GeoProducts located in Houston, Texas and distributed by Nilex Inc. and Layfield Geosynthetic Ltd. (Edmonton). Website: <https://www.geoproducts.org/>

#### **VENDOR CLAIMS AND INFORMATION**

##### **CLAIMS**

The Geocell/Geo Cell/Envirogrid improves fill strength by increasing fill shear strength and stiffness. The individual cells in each Geocell/Geo Cell/Envirogrid panel generate confinement forces that utilize the passive resistance of each adjacent cell. Because each cell confines its own volume of material, the traditional progressive failure of an unsupported soil mass is prevented, and the structure is stabilized. It is an efficient and cost-effective solution for confining materials in slope erosion protection, ground stabilization, channel protection and vertical walls.

##### **DESCRIPTION**

Envirogrid is a three dimensional cellular confinement system that provides confinement and reinforcement to granular material. The Envirogrid sections are manufactured from 58 strips of HDPE, resulting in a section length of 29 cells. Each strip is the approved width and 142 inches (3.6m) in length.

##### **POTENTIAL USAGE**

Envirogrid can be used for load support, erosion control, slope protection, and for retaining wall construction.

##### **STANDARDS**

ASTM D1505 Minimum Polymer Density	ASTM D1693 Environmental Stress Crack Resistance
ASTM D1603 Carbon Black Content	ASTM D5199 Nominal Sheet Thickness

#### **ALBERTA TRANSPORTATION COMMENTS**

##### **EXPERIENCE**

Alberta Transportation has used this product only for erosion and sediment control purpose.

##### **APPLICABLE STANDARDS**

Transportation and Economic Corridors does not have a standard for cellular confinement systems for soil stabilization purpose. Therefore, the cellular confinement systems shall follow the ASTM standards used by the manufacturer for soil stabilization purpose.

For erosion and sediment control purpose, the installer shall follow the Best Management Practices, BMP#15 of Alberta Transportation Erosion and Sedimentation Control Manual (2010).

##### **RECOMMENDATIONS**

Geocell/Geo Cell/Envirogrid be listed as a Potential Product under Alberta Transportation Products List, – Stabilization (Soil) – Cellular Confinement Systems – Proprietary, based on the information provided. Final acceptance as a proven product will be based on field performance.

Geocell/Geo Cell/Envirogrid be listed as a Proven Product under Alberta Transportation and Economic Corridors Product List, Erosion and Sediment Control Systems – Cellular Confinement System – Proprietary.

##### **RESTRICTIONS ON USE**

Caveats: The Cellular Confinement Systems shall be designed by a qualified engineer registered with APEGA and should be designed for the specific site conditions.

**TRIAL PROJECTS**

Drumheller area (fall of 2002) on SH841:02 and SH837:02 for erosion control purpose.

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