Product Evaluation

Product ID: 8131-1
Initiation Date: January 9, 2003
Revision Date: January 13, 2005
Expiry Date:

RE: 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 Geosynthethic Ltd. (Edmonton).

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:
Geocell/Geo Cell/Envirogrid panels have three-dimensional cells that contain, confine and reinforce a variety of fill materials. It comes in sizes of 2”, 3”, 4”, 6” and 8” heights and compact bundles of 3.4m x 0.13m and can be fully expanded to 2.44m x 6.1m.

POTENTIAL USAGE:
Used in landscape, construction and erosion control uses.

STANDARDS:
ASTM D1505 Minimum Polymer Density
ASTM D1693 Environmental Stress Crack Resistance
ASTM D1603 Carbon Black Content
ASTM D5199 Nominal Sheet Thickness
Seam Peel Strength per US Army Corps of Engineers Technical Report GL-86-19, Appendix A
Nilex Inc. and Layfield Ltd. have developed installation hints for the installation of this product.

ALBERTA TRANSPORTATION COMMENTS

EXPERIENCE:
Alberta Transportation has no prior experience with cellular confinement systems. AT has conducted trials of cellular confinement systems in highway ditches in medium to high erosion areas, especially in the Drumheller area (H841:02 and H837:02) last summer.

APPLICATION STANDARDS:
Standards for the cellular confinement systems follow the guidelines for Erosion and Sedimentation Control Design (2003), Best Management Practices, BMP#15.

RECOMMENDATIONS:
Geocell/Geo Cell/Envirogrid cellular confinement system be listed as a Proven Product under Alberta Transportation Product List, Erosion Control Systems – Cellular Confinement System – Proprietary, based on the information provided.

TRIAL PROJECTS

Used on trial sites in the Drumheller area (fall of 2002) on SH841:02 and SH837:02.

Performance will be monitored in spring of 2003 after heavy rainfall has occurred.

Fred Cheng

cc New Product Evaluation Standing Committee – Terry Willis
Roger Skirrow