

Filtrex[®] Geogrid Systems

Slope & Wall Stabilization Technology

GEOGRID SYSTEMS

Description

Filtrex[®] Geogrid Systems are used with Filtrex[®] Bank stabilization, Severe slope stabilization, and Vegetated retaining wall systems and are specifically designed to **increase the structural stability of the system**. Geogrid materials recommended for Filtrex[®] applications shall be primarily composed of polyester and are either uniaxial or biaxial in construction. Bank stabilization applications may use biaxial geogrid, while Filtrex[®] Severe slope stabilization and Vegetated retaining wall systems may use either uniaxial or biaxial geogrids.

Geogrid is considered a structural reinforcement practice and Filtrex[®] International may be contacted for recommendations and consultation. Specific requirements for geogrid materials are often project and application specific, and in such case shall be determined by the Engineer. Geogrid brands may be substituted for other brands of equivalent strength and design capacity on specific projects (see Figure 8.1).

Geogrid is not to be used as a standalone practice or application for Filtrex[®] management practice installations.

Function

Geogrid is typically specified for two primary functions – soil stabilization and anchoring. With Filtrex[®] Severe slope stabilization or Filtrex[®] Bank stabilization, geogrid is intended as a reinforcement and/or anchoring method only. The installation and overall strength of the geogrid system results in a uniform tieback system of the FilterSoxx™ in these applications. Geogrid does not restrict vegetation establishment and growth.

Geogrid utilized in Vegetated retaining wall

(MSE walls) applications function as a soil stabilizer. For this application, the geogrid system provides a positive friction connection between the soil and the wall system, resulting in a Mechanically Stabilized Earth system (MSE) functional in load bearing situations.

Installation

1. Geogrid for use in Filtrex[®] applications shall be installed by a Filtrex[®] Certified Installer™.
2. Geogrid for use in any Filtrex[®] application shall be installed prior to each course of FilterSoxx™.
3. The connection of geogrid to the FilterSoxx™ shall be made by completely wrapping the fascia of the FilterSoxx™ and extending the geogrid back over stable ground at a predetermined length and distance based on project specifications.
4. Anchoring method to the slope shall utilize a uniform lateral anchor of wire rope, galvanized pipe, or equivalent. If this method is not warranted due to specific project conditions, other staking methods include ½ in (13mm) rebar, 2 in (50mm) x 2 in (50mm) x 36 in (900mm) hardwood stakes, or equivalent.
5. Where 2 layers of geogrid may make contact, a Bodkin type connection may be used where a schedule 40 PVC piping (or equivalent) is threaded through the two layers. This provides added connection strength between the layers of geogrid.

Inspection & Maintenance

If Geogrid system is damaged, is moved, or becomes disconnected from the soil or FilterSoxx™ it shall be repaired, replaced, and/or refastened or restaked to



the soil and the FilterSoxx™.

Method of Measurement

Bid items shall show measurement as Geogrid wrap for Bank stabilization, Severe slope stabilization, or Vegetated retaining wall system per square ft, per square yd, per square m, per linear ft or per linear m installed.

ADDITIONAL INFORMATION

For other references on this topic, including trade magazine and press coverage, visit the Filtrexx® Website at: <http://www.filtrexx.com/resourcespress.htm>.

For research reports not included in the Appendix, visit: <http://www.filtrexx.com/resourcesreports.htm>.

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Figure 8.1. GeoGrid Equivalency Chart Based on Long Term Design Strength.

Retaining Wall Geogrid Equivalency Chart based on Long Term Design Strength								
LTDS kN/m	Checkmate		Tensar	Checkmate	Strata	Mirafi	Huesker	LTDS kN/m
	RigidGrid	Gorilla Grid	MSE	FlexGrid			Fortrac	
	HDPE PP	Steel		PET				
110 104 98 92 86		BX120XS		UX150PET				110 104 98 92 86
76-86 74 72 70 68		BX100XS	UX1800 UX1700	UX100PET	SG700	20XT	35/20-20	76-86 74 72 70 68
66 64 62 60 58			UX1600		SG600	18XT 10XT		66 64 62 60 58
56 54 52 50 48		BX80XS		UX70PET UX50PET	SG550	8XT	110/30-20	56 54 52 50 48
46 44 42 40 38	UX120HD	BX60XS	UX1500		SG500	7XT	80/30-20	46 44 42 40 38
36 34 32 30 28	UX80HD		UX1400	UX & BX35PET	SG350	5XT	55/30-20	36 34 32 30 28
26 24 22 20 18	UX80PP UX50HD		UX1100		SG200	3XT	35/20-20	26 24 22 20 18
16 14 12 10 8	UX50PP UX35PP		UX1000 UX800		SG150	2XT		16 14 12 10 8

Equivalencies are in kN/m and based on MARV values in silt, sand, clay soils for private projects. AASHTO recommends a factor of safety (FoS) for uncertainties of 1.5 for permanent public projects. Testing done to ASTM, NCMA, and GRI standards. All data is for information purposes only. Engineers should confirm test data with each individual manufacturer

