

5.3 LockDown™ Netting

PURPOSE & DESCRIPTION

Filtrex[®] LockDown™ Netting is a single net rolled erosion control product (RECP) that is designed to increase the slope stabilization and erosion control capabilities of Temporary Seeding, Filtrex[®] Compost Erosion Control Blanket [CECB]™, and Filtrex[®] Compost Storm Water Blanket [CSWB]™.

LockDown Netting is typically stapled to the slope prior to application of these practices; however, where high wind velocity conditions are anticipated, LockDown Netting should be installed on top of these practices. LockDown Netting is available in two different materials - HDPE and polypropylene. LockDown Netting is recommended for slopes between 3:1 and 2:1, and is required for slopes greater than 2:1. Slope protection should not be applied at slopes greater than 1:1 without additional support from erosion control armoring devices or practices. For LockDown Netting Material Specifications see Table 3.1. See Filed Application Photo Reference for example of LockDown Netting installation. See Figure 3.1 for design details of LockDown Netting installed under a CECB and Figure 3.2 for design details of LockDown Netting installed on top of a CECB.

FUNCTION

LockDown Netting is categorized as an erosion control net (ECN) (ECTC, 2004) and is used to increase soil surface roughness and stability of disturbed soils on hill slopes. The primary purpose of LockDown Netting is to provide a structural surface to increase the stability of the Temporary Seeding, CECB, or CSWB at the soil interface, particularly on steep grades. LockDown Netting is not sufficient to be used alone as a form of slope stabilization or erosion control, and is to be used as a permanent stabilization practice. LockDown Netting is available in a variety of materials of differing tensile strength, functional longevity (6 mo.- 4 yrs), and degradability. LockDown Netting is typically applied to bare hill slopes prior to application of CECB. During installation, LockDown Netting is installed horizontally down slope and anchored to the soil using 6-8 in (150-200mm) sod staples to be driven along the entire perimeter of the net with approximately one sod staple per square yard (0.8 square m) within the net perimeter. See Installation specifications for more details.

PERFORMANCE

Research from the San Diego State University Soil Erosion Research Laboratory on LockDown Netting using ASTM D-6459 on 2:1 slopes determined the following:

- Temporary seeding performance can be increased from 52% to 98% effective for rain events ≤ 2 in/hr and 0.67 in.
- CECB (1 in) performance can be increased from 99% to near 100% effective for rain events ≤ 2 in/hr and 0.67 in.
- Temporary seeding performance can be increased from 31% to 54% effective for rain events ≤ 4 in/hr and 2.0 in.
- CECB (1 in) performance can be increased from 61% to 68% effective for rain events ≤ 4 in/hr and 2.0 in.
- CECB (2 in) performance can be increased from 67% to 79% effective for rain events ≤ 4 in/hr and 2.0 in.

For more information of this research project see Tech Link 3328.

INSTALLATION

1. Temporary seeding/CECB/CSWB installed on slopes: greater than or equal to 4:1 shall be tracked; greater than or equal to 2:1 shall be tracked and use LockDown Netting; greater than

1:1 shall use rolled erosion control blankets (RECP) or turf reinforcement mats (TRM).

2. When required, LockDown Netting shall be installed prior to the application of the Temporary seeding/CECB/CSWB.
3. LockDown Netting shall be anchored to the soil using 6-8 in (150-200mm) sod staples to be driven along the entire perimeter of the net and netting area.
4. Staples for LockDown Netting shall be spaced 2 ft (600mm) apart on all sides.
5. Where more than one roll of LockDown Netting is required for slope width or slope length, netting edges shall be overlapped by a minimum of 6 in (150mm).
6. LockDown Netting shall be installed from top to bottom (never across) on the slope.
7. LockDown Netting shall be installed under the entire area of the Temporary seeding/CECB/CSWB, including 10 ft (3m) over the shoulder of the slope.
8. LockDown Netting may be installed on top of the Temporary seeding/CECB/CSWB where wind velocities and wind erosion are above normal. All other installation procedures and specifications are the same as described above.

INSPECTION & MAINTENANCE

If LockDown Netting has been moved by wind or runoff it shall be repaired by restoring contact between soil and Temporary seeding/CECB/CSWB interface or surface (if installation is on top of Filtrex management practice) of Temporary seeding/CECB/CSWB; additional staples and Temporary seeding/CECB/CSWB application may be required.

METHOD OF MEASUREMENT

Bid items shall show measurement as Filtrex[®] LockDown™ Netting + Filtrex[®] BMP per square ft, per square yd, per square m, per hectare, or per acre installed.

FIELD APPLICATION PHOTO REFERENCES



LockDown Netting Installation

ADDITIONAL INFORMATION

For other references on this topic, including additional research reports and trade magazine and press coverage, visit the Filtrexx website at filtrexx.com

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Call for complete list of international installers and distributors.

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Table 3.1. Material Specifications for Filtrexx® LockDown™ Netting.

Support Practice	LockDown™ Netting	LockDown™ Netting	Testing Lab
Purpose	Increase stabilization/ erosion control of Slope protection	Increase stabilization/ erosion control of Slope protection	
Description	Improves performance and allowable slope steepness	Improves performance and allowable slope steepness	
Material Description	5 mm multifilament polypropylene	5 mm monofilament HDPE	
Mesh Description	¾ in (19mm) openings	¾ in (19mm) openings	
Color	Black	Green	
Tensile Strength (ASTM 5035-95)*	32.8 lbs/in2* (2.3 kg/cm2)	1.2 lbs/in2 (0.08 kg/cm2)	Texas Transportation Institute TX A&M.*
Elongation (% relative) (ASTM 5035-95)*	46.5	ND	Texas Transportation Institute TX A&M.*
Functional Longevity	1 – 4 yr	6 mo – 3 yr.	Filtrexx International Field Lab
Roll Size (w x l)	30 ft (9m) x 375 ft (114m)	30 ft (9m) x 375 ft (114m)	
Application Method	Stapled to soil/ Slope protection applied on top	Stapled to soil/ Slope protection applied on top	

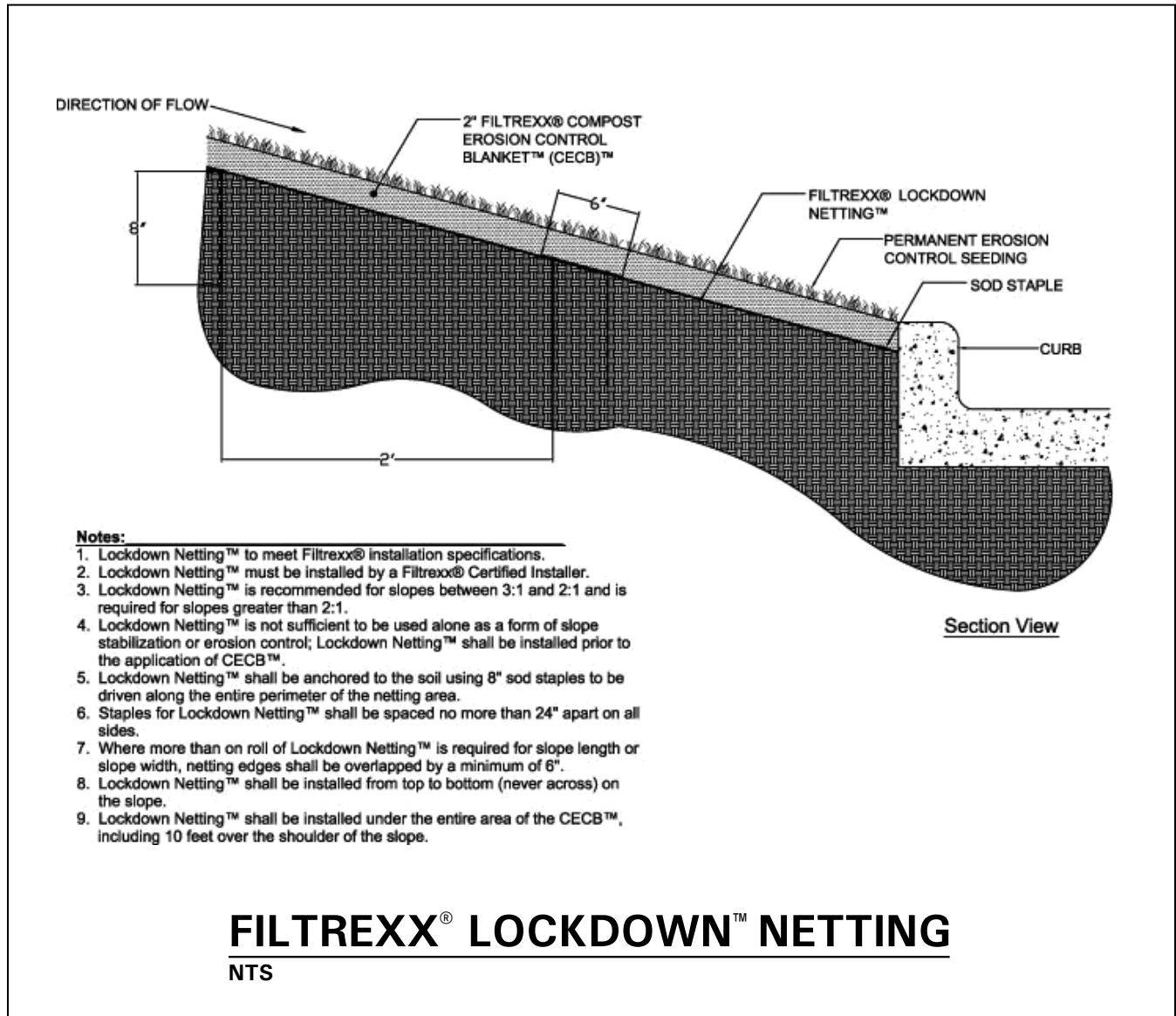
Figure 3.1. Design Drawing Detail for LockDown™ Netting Installed Underneath Slope Protection.

Figure 3.2. Design Drawing Detail for LockDown™ Netting Installed on Top of Slope Protection.