

1-05

Filtrexx SiltSoxx™ for Perimeter Control - Overview



Description

Filtrexx SiltSoxx™ are sediment-trapping devices using Filtrexx FilterMedia™ applied with a pneumatic blower device or equivalent. Filtrexx SiltSoxx™ trap sediment by filtering water passing through the berm and allowing water to pond, creating a settling of solids. Flows through rates with Filtrexx SiltSoxx™ exceed values for traditional Silt Fence.

Conditions where practice applies

Filtrexx SiltSoxx™ are to be used in any area requiring sediment or erosion control where runoff is in the form of sheet flow or in areas that silt fence is normally considered acceptable. For the purposes of this document, Filtrexx SiltSoxx™ and silt fence are considered approved equals. The use of Filtrexx SiltSoxx™ apply to areas of high sheet erosion, on steep slopes up to and exceeding a 2:1 slope, around inlets, and in other disturbed areas of construction sites requiring sediment control. Filtrexx SiltSoxx™ may also be used in sensitive environmental areas, where migration of aquatic life, including turtles, salamanders and other aquatic life is impeded by the use of silt fence.

Planning Considerations

Filtrexx SiltSoxx™ control erosion by trapping sediment and slowing water that filters through the Filtrexx SiltSoxx™. This will create temporary ponding during heavy rains. On slopes, compost protects round soil particles from gaining momentum and creating erosion because compost is flat and does not roll like soil. It is possible to drive over Filtrexx SiltSoxx™ during construction, but these areas should be immediately repaired by manually moving back into place, if disturbed. Continued heavy construction traffic will reduce the effectiveness of the Soxx™. Since trenching is not required for

installation of Filtrex SiltSoxx™, this tool may be used in a number of situations where silt fence cannot, including: on frozen ground; on pavement; on hard, compact ground where trenching is challenging; in areas where trenching is not allowed due to it causing additional sediment disturbing activities. Since water flowing through the Filtrex SiltSoxx™ is flowing at a faster rate than traditional silt fence, work sites may not stay ponded for long periods and more work days may be available once areas behind the tool dry out.

Design Criteria for Filtrex SiltSoxx™

The sedimentation removal process associated with SiltSoxx™ involves both filtering and deposition from settling. This is different than other methods using only ponding for deposition of sediment. Ponding occurs when water flowing to the FilterSoxx™ accumulates faster than it can flow through the Soxx™. Typically, Soxx™ can handle more water than silt fence.

For flat areas where minimal protection is required, and where 18" silt fence is used, these tools are replaced with 8" SiltSoxx™.

For severe applications regarding wire backed silt fence, super silt fence, or other types of silt fence reinforced to create greater ponding area, these tools are replaced with 18" SiltSoxx™.

For most other standard applications, standard 24" silt fence is replaced with 12" SiltSoxx™.

Other design considerations are as follow:

Level Contour:

Place SiltSoxx™ on level contours to assist in dissipating flow into sheet flow rather than concentrated flows. Do not construct Soxx™ that concentrate runoff or channel water. Sheet flow of water should be perpendicular to the SiltSoxx™ at impact and relatively un-concentrated.

Flat Slopes:

When possible, place SiltSoxx™ at a 5' or greater distance away from the toe of the slopes in order for the water coming from the slopes to maximize space available for sediment deposit. When this 5' distance is not available due to construction restrictions, a second row of SiltSoxx™ may be required.

Flow around ends:

In order to prevent water flowing around the ends of SiltSoxx™, the ends of the SiltSoxx™ must be constructed pointing upslope so the ends are at a higher elevation. Be sure to stake the ends of the Soxx™ to prevent movement during high flow events.

Vegetation:

For permanent areas, seeded SiltSoxx™ allow vegetation to be established directly in the sock and immediately in front and back of the sock at a distance of 5 feet. Vegetation on

and around the SiltSoxx™ will assist in slowing down water for filtration. The option of adding vegetation will be at the discretion of the Engineer. No other soil amendments or fertilizer are required for vegetation establishment.

Drainage area:

Slope		Perimeter Maximum Drainage Area Based on Slope Length and Recommended Diameter Soxx			
		8"	12"	18"	24"
0% - 2%	Flatter Than 50:1	125	250	300	350
2% - 10%	50:1 - 10:1	100	125	200	250
10% - 20%	10:1 - 5:1	75	100	150	200
20% - 33%	5:1 - 2:1	50*	50	75	100
>50%	>2:1	25*	25	50	75

Replaces Type "A" Silt Fence
 Replaces Type "B" Silt Fence
 Replaces Type "C" Silt Fence
 See Individual Specs for Proper Use
 * Only to be used in conjunction with Compost Blankets

Dispersing flow:

Sheet flow and runoff should not exceed height of SiltSoxx™ capacity in most storm events. If overflow of the Soxx™ is a possibility, larger Soxx™ should be constructed, or other possible sediment control tools may be used. Alternatively, a second set of Soxx™ may be constructed or used in combination with compost blankets to prevent sediment from moving.

Maintenance Requirements:

Filtrexx SiltSoxx™ should be regularly inspected to make sure they hold their shape and are producing adequate flow through. If ponding becomes excessive, and sediment reaches the top of the Soxx™, additional Soxx™ should be added in the areas without disturbance of soil or collected sediment.

When construction is completed on site, the Soxx™ may be dispersed with a loader, rake, bulldozer or other device to be incorporated in the soil or left on top of the soil for final seeding to occur. The mesh netting material will be collected and disposed of in normal trash container or removed by the Contractor. In cases where biodegradable or photodegradable products are used, they may be left on site at the direction of the engineer.

Specifications for Using Filtrexx SiltSoxx™

Section ____: Filtrexx SiltSoxx™ Installation and Maintenance – perimeter control

1.0 Description: This work shall consist of furnishing, installing, maintaining and dispersing (if needed) a water permeable compost filter sock (Filtrexx SiltSoxx™) to contain soil erosion and sediment by filtering soil particles from water moving off site into adjacent waterways or storm water drainage systems.

2.0 Composted Products (Filtrexx FilterMedia™)

1. Composted product: Compost used for Filtrexx SiltSoxx™ shall be weed free and derived from a well-decomposed source of organic matter. The compost shall be produced using an aerobic composting process meeting CFR 503 regulations, including time and temperature data indicating effective weed seed, pathogen and insect larvae kill. The compost shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products will not be accepted. Test methods for the items below should follow USCC TMECC guidelines for laboratory procedures:

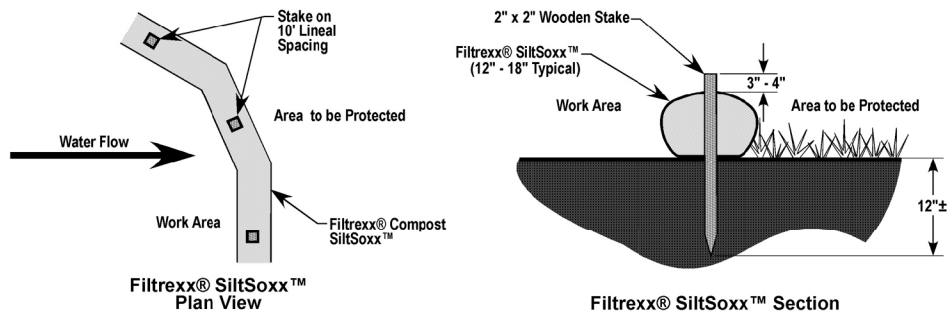
- A. PH – 5.0-8.0 in accordance with TMECC 04.11-A, “Electrometric pH Determinations for Compost”
- B. Particle size – 99% passing a 2” sieve and a minimum of 60% greater than the 3/8” sieve, in accordance with TMECC 02.02-B, “Sample Sieving for Aggregate Size Classification”. *(Note- In the field, product commonly is between ½” and 2” particle size.)*
- C. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.
- D. Material shall be relatively free (<1% by dry weight) of inert or foreign man made materials.
- E. A sample shall be submitted to the engineer for approval prior to being used and must comply with all local, state and federal regulations.
- F. Compost product shall be an approved Filtrexx FilterMedia™, as determined by testing procedures outlined by Filtrexx International, LLC. A copy of an approved report shall be kept on file.

3.0 Construction:

- 1. Filtrexx SiltSoxx™ will be placed at locations indicated on plans as directed by the engineer. SiltSoxx™ should be installed parallel to the base of the slope or other affected area, perpendicular to sheet flow. In extreme conditions (i.e., 2:1 slopes), or when sheet flow flows to the area from a parcel above the work zone, a second sock shall be constructed at the top of the slope in order to dissipate flows. (See sock size indications in the drainage chart attached)
- 2. If the SiltSoxx™ is to be left as a permanent filter or part of the natural landscape, it may be seeded at time of installation for establishment of permanent vegetation. The Engineer shall specify seed requirements.
- 3. Filtrexx SiltSoxx™ may be used in direct flow situations within runoff channels not exceeding 3 feet in depth. Normally, 18” or 24” SiltSoxx™ should be used. Be sure to follow staking details as identified in the details below.

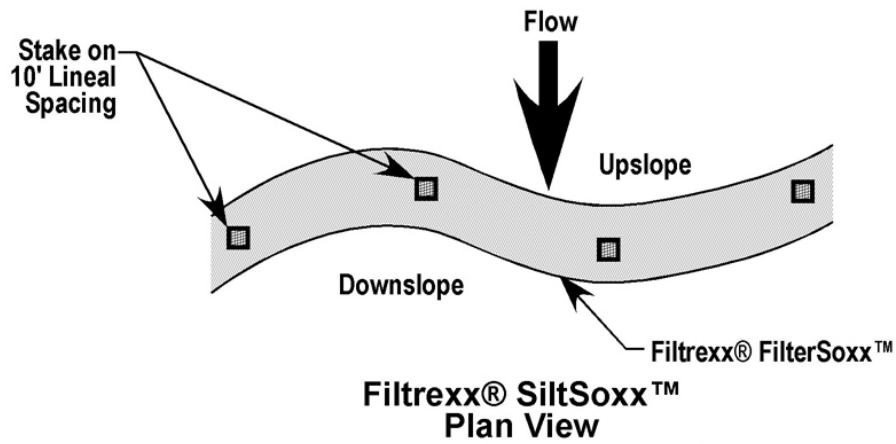
4. See attached schematic for Filtrexx SiltSoxx™ Installation:

Filtrexx® SiltSoxx™ Details



Notes:

1. All material to meet Filtrexx® specifications.
2. SiltSoxx™ compost/soil/rock/seed fill to meet application requirements.
3. SiltSoxx™ depicted is for minimum slopes. Greater slopes may require larger socks per the Engineer.
4. Compost material to be dispersed on site, as determined by Engineer.



4.0 Maintenance:

1. The Contractor shall maintain the SiltSoxx™ in a functional condition at all times and it shall be routinely inspected.
2. Where the Soxx™ requires repair, it will be routinely repaired.
3. The contractor shall remove sediment collected at the base of the Soxx™ when they reach 1/2 of the exposed height of the Soxx™, or as directed by the Engineer. Alternatively, rather than create a soil disturbing activity, the engineer may call for additional Soxx™ to be added at areas of high sedimentation, placed immediately on top of the existing sediment laden SiltSoxx™.
4. The SiltSoxx™ will be dispersed on site when no longer required, as determined by the Engineer.

5.0 Method of measurement:

Bid items shall show measurement as 'Filtrexx SiltSoxx™', per linear foot, installed.

6.0 Performance:

1. Contractor is responsible for establishing a working erosion control system and may, with approval of the Engineer, work outside the minimum construction requirements as needed.
2. Where the SiltSoxx™ deteriorates or fails, it will be repaired or replaced with a more effective alternative.
3. Contractor is required to be a certified Filtrexx Installer as determined by Filtrexx International, LLC (440-926-8041 or visit website at Filtrexx.com). Certification shall be considered current if appropriate identification is shown during time of bid or at time of application.

7.0 Application guidelines:

1. Filtrexx SiltSoxx™ for silt fence replacement shall either be made on site or delivered to the jobsite using Filtrexx SiltSoxx™ materials in a 5 mil continuous, tubular, HDPE 3/8" knitted mesh netting material, filled with compost passing the above specifications for compost products as outlined in 2.0.
2. Filtrexx SiltSoxx™ netting materials are available only from Filtrexx International, LLC and are the only Certified mesh materials accepted in creating Filtrexx products on site or as delivered to the job site.

8.0 Available Vendors

Filtrexx SiltSoxx™ and installation may be purchased from the following companies:
(see website for current listing)

Filtrexx International, LLC
35481 Grafton Eastern
Grafton, OH 44044
440-926-8041
440-926-4021 (fax)
www.filtrexx.com
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