

6.1.5 Slope Interruption - Compost Filter Sock

PURPOSE & DESCRIPTION

Filtrex SiltSoxx[®] (Soxx) compost filter sock is a three-dimensional tubular runoff and erosion control device used for **slope interruption and slope length reduction** on hill slopes prior to final stabilization during construction activities.

APPLICATION

Slope interruption is to be installed horizontally across the contour of hill slopes, perpendicular to sheet flow, where erosion control practices are required or runoff velocity control is recommended. Slope interruption is most effective where runoff is in the form of sheet flow and on long slopes prone to rill erosion. Slope interruption also provides sediment control and filtration of soluble pollutants from runoff.

Slope interruption can be applied to areas of high sheet runoff and erosion, and slopes up to a 1:1 grade. Slope interruption should never be the only form of slope erosion control and should be used in conjunction with Slope protection or rolled erosion control blankets (RECB). Slope interruption may also be used in sensitive environmental areas, where wildlife migration may be impeded by the use of silt fences or trenching may damage plant roots.

It is possible to drive over slope interruption during construction; however, these areas should be immediately repaired by manually moving back into place, if disturbed. Heavy construction traffic may destroy the fabric, reduce the dimensions, and reduce the effectiveness of the slope interruption.

Vegetated Slope Interruption:

For permanent control of runoff velocity slope interruption can be direct-seeded to allow vegetation establishment directly in the device. Extending the vegetation 5 ft (1.5m) upslope and down slope from the device, can further increase performance. Vegetation on and around the slope interruption will assist in slowing runoff velocity for increased deposition and filtration of pollutants. Additionally, the reduction of runoff velocity may increase the stability and sustainability of plant establishment and growth where runoff is prone to destabilize vegetation. The option of adding vegetation will be at the discretion of the Engineer. No additional soil amendments or fertilizer are required for vegetation establishment in the slope interruption.

INSTALLATION

1. Slope interruption used for hill slope runoff velocity and erosion control, and removal of sediment and soluble pollutants in storm runoff shall meet Filtrex Soxx Mesh Material and Filtrex Certified FilterMedia specifications.
2. Call Filtrex at 877-542-7699 or visit www.filtrex.com for a current list of installers and distributors of Filtrex products.
3. Slope interruption will be placed at locations indicated on plans as directed by the Engineer. Slope interruption shall be installed horizontally, along the contours of slopes, and perpendicular to sheet runoff flow.
4. Stakes shall be installed through the middle of the slope interruption on 10 ft (3m) centers, using nominal 2 in (50mm) by 2 in (50mm) by 3 ft (1m) wooden stakes. 5" diameter Soxx may use 1" (25 mm) x 1" (25 mm) x 18" (0.5 m) wooden stakes.
5. Alternatively, stakes may be installed directly behind the Soxx

at a 90-degree angle to level ground (regardless of slope angle), where stakes are in direct contact with the downslope side of Soxx. If high runoff or sediment accumulation is expected, staking through the Soxx may be required. Additionally, if soil is highly compacted and stakes cannot be adequately driven into the soil, Soxx may be stabilized with sand bags or equivalent, as long as the effective height of Soxx is not compromised.

6. Staking depth for sand and silt loam soils shall be 12 in (300mm), and 8 in (200mm) for clay soils.
7. Loose FilterMedia may be backfilled along the upslope side of the slope interruption, filling the seam between the soil surface and the device, improving filtration and sediment retention.
8. If the slope interruption 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 will specify seed requirements.

See design drawing details for correct Filtrex Slope Interruption installation (Figure 5.1).

INSPECTION & MAINTENANCE

Routine inspection should be conducted within 24 hrs of a runoff event or as designated by the regulating authority. Slope interruption should be regularly inspected to make sure they maintain their shape and are producing adequate hydraulic flow-through. If ponding becomes excessive, additional slope interruption may be required to reduce effective slope length or sediment removal may be necessary. It is acceptable for runoff to breach the slope interruption during runoff events. Slope interruption shall be inspected until the hill slope has been permanently stabilized and construction activity has ceased.

1. The contractor shall maintain the slope interruption in a functional condition at all times and it shall be routinely inspected.
2. If the slope interruption has been damaged, it shall be repaired, or replaced if beyond repair.
3. The contractor shall remove sediment at the base of the upslope side of the slope interruption when accumulation has reached 1/2 of the effective height of the Soxx, or as directed by the engineer.
4. Slope interruption shall be maintained until the hill slope has been permanently stabilized and construction activity has ceased.
5. The FilterMedia will be dispersed on site once disturbed area has been permanently stabilized, construction activity has ceased, or as determined by the engineer.

For long-term sediment and pollution control applications, Slope interruption can be seeded at the time of installation to create a permanent runoff velocity control and vegetative filtering system for sediment and soluble pollutants (contained vegetative filter strip). These devices will remain intact at the end of construction activity. The appropriate seed mix shall be determined by the engineer.

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

Filtrexx International, Technical Support
 877-542-7699 | www.filtrexx.com | info@filtrexx.com
 Call for complete list of international installers and distributors.

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Table 5.3. Maximum Slope Lengths of Filtrexx® Slope Interruption Based on a 1 in (25 mm)/24 hr Rainfall Event.

| Slope Percent | Maximum Slope Length Above Sediment Control in Feet (meters)* | | | | | |
|---------------|---|--------------------------------|---------------------------------|---------------------------------|--------------------------------|--------------------------------|
| | 5 in (125 mm) Sediment control | 8 in (200 mm) Sediment control | 12 in (300 mm) Sediment control | 18 in (450 mm) Sediment control | 24 in (600mm) Sediment control | 32 in (800mm) Sediment control |
| | 4 in (100 mm)** | 6.5 in (160 mm)** | 9.5 in (240 mm)** | 14.5 in (360 mm)** | 19 in (480 mm)** | 26 in (650 mm)** |
| 2 (or less) | 360 (110) | 600 (180) | 750 (225) | 1000 (300) | 1300 (400) | 1650 (500) |
| 5 | 240 (73) | 400 (120) | 500 (150) | 550 (165) | 650 (200) | 750 (225) |
| 10 | 120 (37) | 200 (60) | 250 (75) | 300 (90) | 400 (120) | 500 (150) |
| 15 | 85 (26) | 140 (40) | 170 (50) | 200 (60) | 325 (100) | 450 (140) |
| 20 | 60 (18) | 100 (30) | 125 (38) | 140 (42) | 260 (80) | 400 (120) |
| 25 | 48 (15) | 80 (24) | 100 (30) | 110 (33) | 200 (60) | 275 (85) |
| 30 | 36 (11) | 60 (18) | 75 (23) | 90 (27) | 130 (40) | 200 (60) |
| 35 | 36 (11) | 60 (18) | 75 (23) | 80 (24) | 115 (35) | 150 (45) |
| 40 | 36 (11) | 60 (18) | 75 (23) | 80 (24) | 100 (30) | 125 (38) |
| 45 | 24 (7) | 40 (12) | 50 (15) | 60 (18) | 80 (24) | 100 (30) |
| 50 | 24 (7) | 40 (12) | 50 (15) | 55 (17) | 65 (20) | 75 (23) |

* Based on a failure point of 36 in (0.9 m) super silt fence (wire reinforced) at 1000 ft (303 m) of slope, watershed width equivalent to receiving length of sediment control device, 1 in/ 24 hr (25 mm/24 hr) rain event.

** Effective height of Slope interruption after installation and with constant head from runoff as determined by Ohio State University.

Figure 5.1. Engineering Design Drawing for Slope Interruption

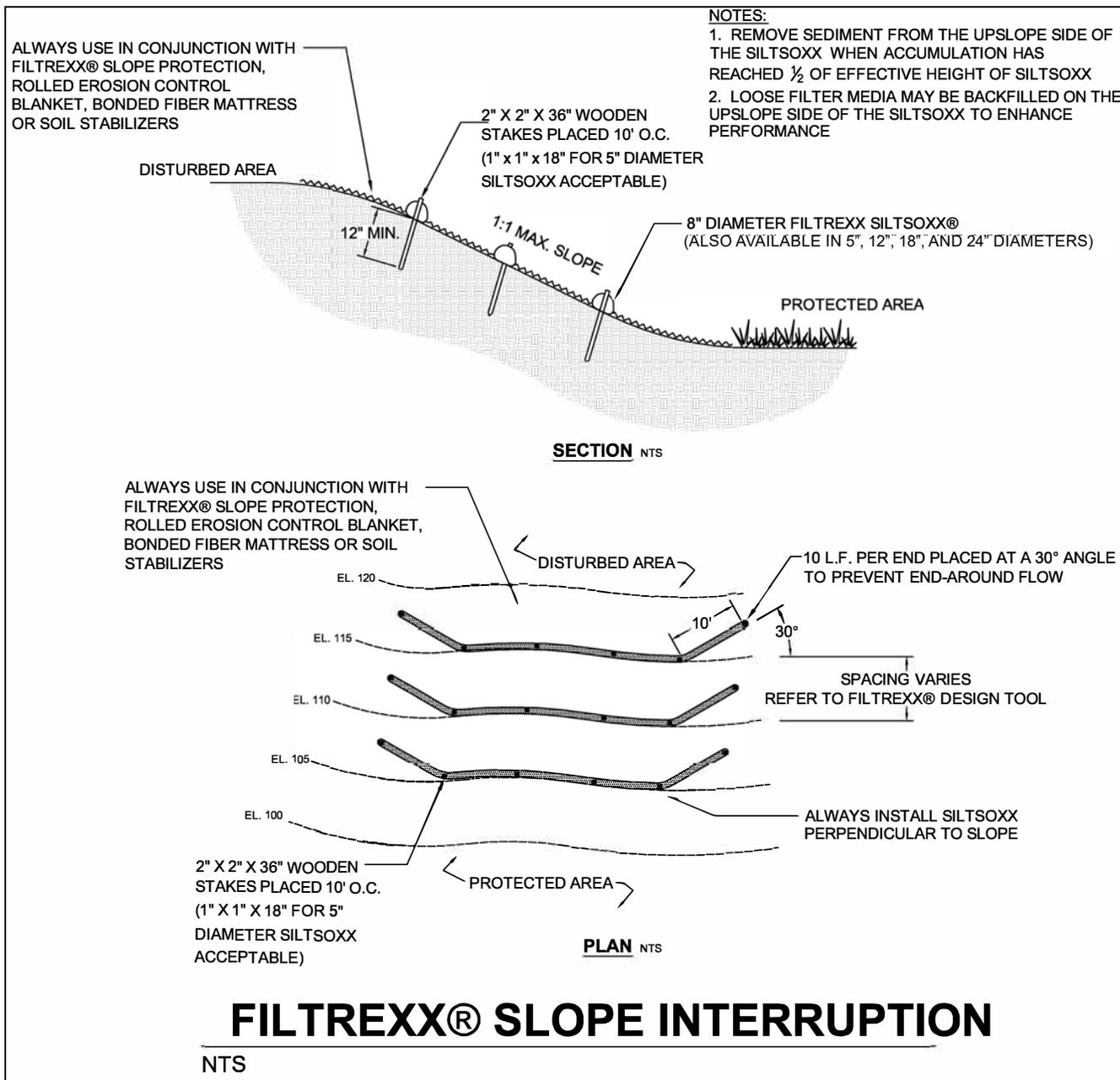
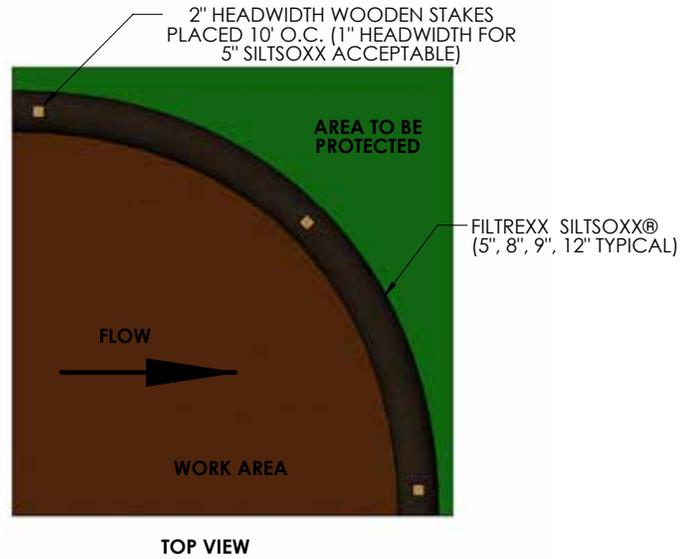
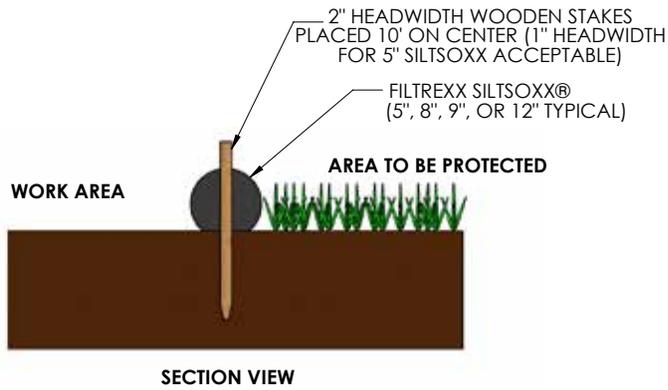
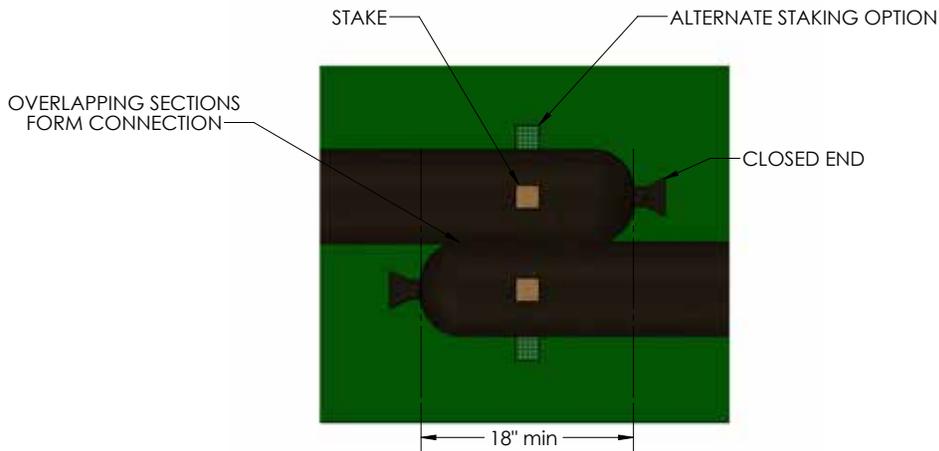


Figure 5.2. Engineering Design Drawing for Slope Interruption - Staking Details

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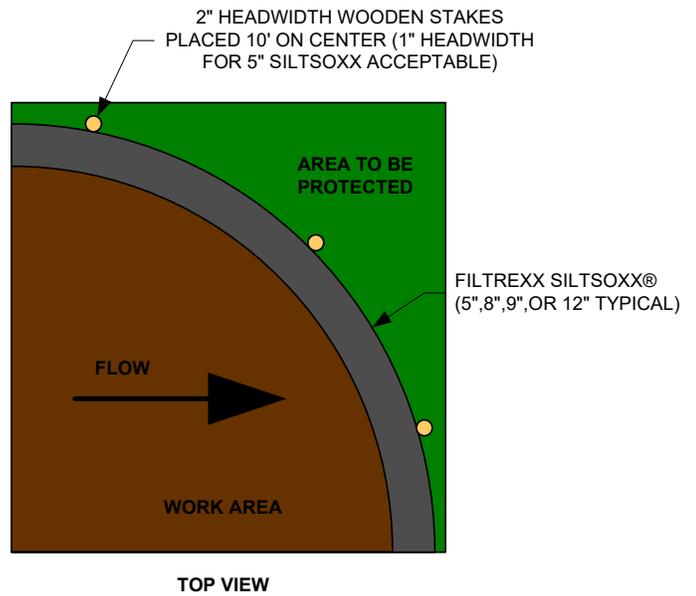
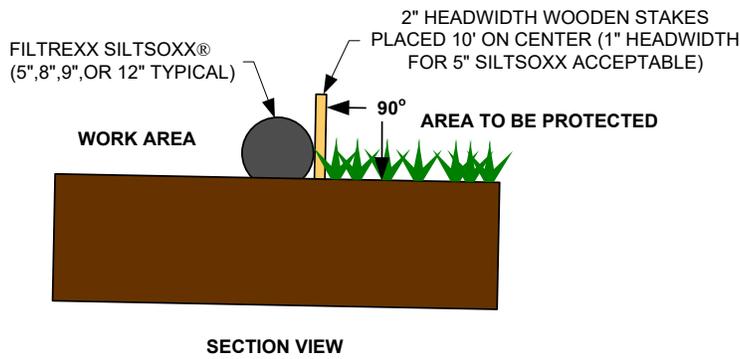
COMPOST SOCK CONNECTION/ATTACHMENT DETAIL



- NOTES:
1. ALL MATERIAL TO MEET FILTREXX® SPECIFICATIONS.
 2. SILT SOXX FILL TO MEET APPLICATION REQUIREMENTS.
 3. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY ENGINEER.

Figure 5.2. (continued) Engineering Design Drawing for Slope Interruption - Alternative Staking Details

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