Colonial Construction Materials

CORE Filter Sock

General Description and Use

CORE Filter Socks (CFS) are a highly effective sediment control Best Management Practice (BMP). Filter socks are most commonly used as perimeter sediment controls but can also be used on steep slopes, on pavement or as check dams. Filter socks can be installed on-site using a pneumatic blower truck or can be pre-filled and shipped to the site on pallets.

The filter socks function in two ways. First, they temporarily pond water on the uphill side. This allows some sediment to drop out of suspension and be deposited behind the sock. The second way they function is by filtering the storm water runoff as it passes through the filter material. The coarse nature of the filter material provides many opportunities for the water to slow and for sediment to be pulled out of suspension. The combination of these two actions makes the filter sock a more effective BMP for reducing sediment discharges from construction sites. On steep slopes the filter socks act to slow the flow of water on the face of the slope, reducing its erosive potential and protecting slopes from heavy erosion.

Filter socks from CORE Erosion Control Services are available in 8", 12", 18", 24" and 32" diameters. The diameter of each sock refers to its design height. When installed properly the CFS will maintain an effective height of 75% of the design height. For example a 12" sock will have an effective height of 9" or greater.

Filter socks are a versatile BMP that can be used in many applications on any type of construction site.

Filter sock used as perimeter protection on a pipeline project.

Applications

Filter socks from CORE Erosion Control Services can be used in a variety of applications on all types of construction sites.

- **Sediment control**
- **Perimeter protection**
- **Check dams**
- **Inlet protection**
- **Sediment traps**
- **Basin forebay**
- **Temporary slope interrupts**
- **Permanent slope interrupts**
- **Lot wraps**
- **Concrete washouts**

One major advantage to using filter socks in place of other sediment control BMPs is that trenching is often not required. Because the filter socks are heavier in weight they will achieve greater contact with the underlying soil. This allows the filter socks to be used in areas where trenching is not possible due to soil conditions or on impervious surfaces such as concrete and asphalt.

Installation

Filter sock is meant to be installed on level contours and should not be installed in a manner which concentrates flow. Filter socks are intended for use as a sediment control in sheet flow conditions and as inlet protection. Filter socks are also intended for use as erosion controls such as slope interrupts to reduce erosion on slopes and as check dams in earthen brow ditches. Filter socks used as erosion control on slopes is most effective when used in conjunction with a compost blanket, rolled erosion control blanket or hydraulic erosion control. Filter socks in brow ditches must be spaced properly to prevent erosion on the downhill side of the check dam.

It is not necessary to trench filter socks provided that proper preparation occurs prior to installation. Any heavy vegetation, brush, rocks or other materials should be removed so that intimate ground contact can be achieved along the entire length of the filter sock. Pre-filled filter socks should not be stretched when being installed. Stretching the filter sock beyond the manufactured length may reduce the effective height of the sock and cause failures in the field.

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Some regulatory agencies may require minimal trenching of filter socks. Filter socks should be staked through the center of the sock or on the immediate downhill side of the sock at a roughly 45 degree angle. For most applications stakes should be spaced at 10' intervals. Some regulatory agencies may require additional stakes. When pre-filled filter socks are used on-site the ends must overlap a minimum of 18" with each end securely staked to prevent storm water runoff from bypassing the filter sock. The ends of filter socks should be turned upslope to prevent end around flow.

Filter socks may be moved after installation to accomodate traffic or other site considerations. Filter socks should be returned to the design position at the end of the day or prior to a rain event. *See installation guide for details.*

Filter Material Characteristics

The most important component of the filter sock is the filter material. The filter material is the portion of the BMP that is responsible for filtering out sediment as it passes through the filter sock.

Filter material.

CORE Erosion Control Services tests our filter material several times per year to ensure it meets all federal, state and local requirements.

If the filter material is too fine it will not allow the storm water runoff to effectively flow through the sock causing failures due to overtopping or undercutting. If the filter material is too coarse it will not allow the storm water runoff to temporarily pond on the uphill side of the filter sock and will flow through the sock too quickly. A material that is too coarse will not provide the proper filtration required.

Mesh Characteristics

The outer mesh of the filter sock serves as containment to hold the filter media in place while allowing for storm water runoff to flow through the mesh. The mesh itself will not necessarily improve the function of the filter sock but it can hinder the performance if the pore size is not large enough.

CORE Erosion Control Services uses a multifilament polypropylene, photodegradable mesh with 1/8" opening pore size. This mesh has a functional life of 2+ years and is durable enough to hold up to typical construction site wear and tear. *See table 2 for mesh properties.*

General Maintenance

Filter socks should be inspected after each runoff event and on a regular basis between runoff events. Any sediment that has accumulated to half of the above ground height of the filter sock shall be removed. If overtopping occurs a larger diameter sock may be required, or additional upstream BMPs may need to be put in place.

If the mesh is punctured or holes develop replacement may not be required. If the filter material is still contained within the mesh than replacement will not be needed. If the filter material is being washed out of the mesh than repair or replacement will be required. Only the affected portion of the filter sock will need to be replaced. Using small sections of pre-filled filter sock is an acceptable method of replacing damaged portions of sock.

Vehicles and equipment should not be allowed to drive over the filter socks.

Once the area upstream of the filter sock has achieved final stabilization and there is no longer a threat of sediment laden water discharging from the area the filter sock can be removed. The filter material can either be removed from the site or it can be left in place and spread out on-site as a soil supplement.

If the filter material is left on-site it should be vegetated or spread in a manner so as to not cause any off-site sediment discharge.

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Table 1: General Filter Media Specifications

Organic Matter Content	25% - 100% (dry weight basis)
Organic Portion	Fibrous and elongated
pH	5.5 - 8.5
Moisture Content	30% - 60%
Particle Size	30% - 50% pass through 3/8" sieve
Soluble Salt Concentration	5.0 dS/m (mmhos/cm) Maximum

Regulatory agencies may have differing specifications for filter material. This specification meets a majority of federal and state specifications.

Table 2: Mesh Properties

Construction	Tubular Knit	
Chemical Reaction	Inert to most soil chemicals including Alkaline, weak acids and salt	
Properties	Fiber Material	Multi-Filament Polypropylene
	Color	Black
	UV Protection	Photodegradable/ UV Stabilized
	UV Resistance ASTM G-155	100% at 1000 hr.
	Approx. Life Expectancy *	2-4 years
	Mesh Opening	1/8"
Strength Properties	ASTM 5035	222 psi
Packaging	Package Types	Roll

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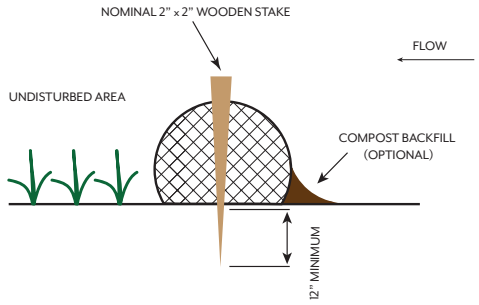
INSTALLATION GUIDE

CORE FILTER SOCKS

These details serve as a general guide for installation of CORE Filter Socks (CFS). Local guidelines must be followed whenever CFS are installed. This product detail sheet is not intended to supercede any local, state or federal regulations or guidelines designed to ensure the proper use of this BMP.

CFS should be inspected after each rain event. Sediment should be removed from the uphill side of the CFS once it has reached half of the aboveground height of the CFS. Portions of the mesh may tear or rip. The CFS will still be functional provided the filler material remains within the mesh. If filter material is lost the section of CFS should be replaced.

When installed properly the CFS will maintain an effective height of 75% of the design height after settling in the field. CFS may be moved after installation to accomodate site conditions. CFS should be placed back in the design position at the end of each day and prior to a rain event.



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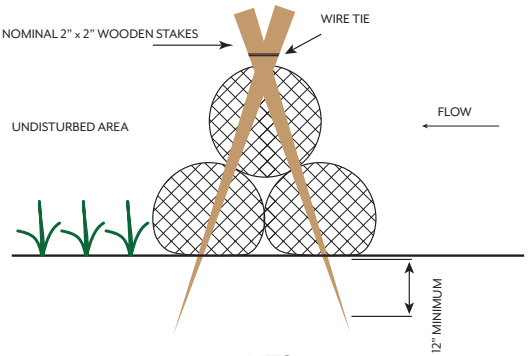

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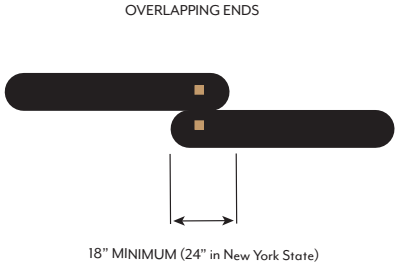

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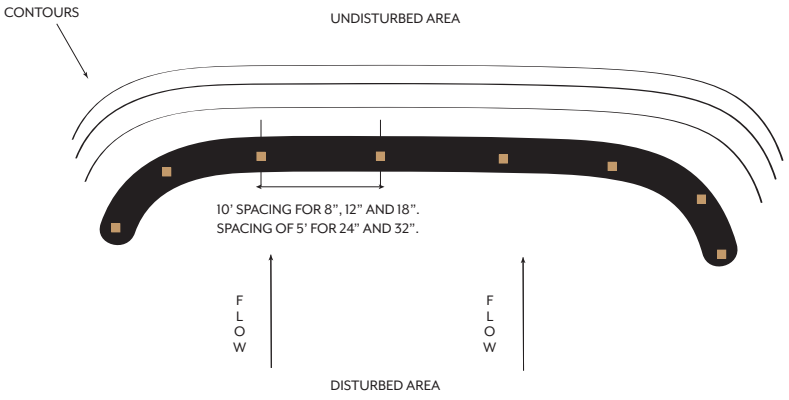

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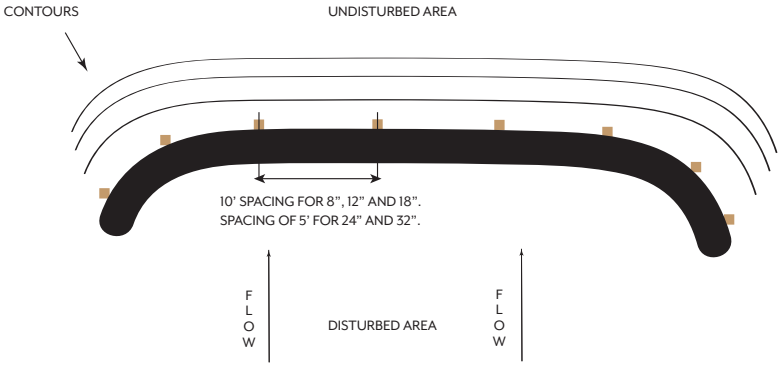
ALTERNATIVE STAKING OPTIONS



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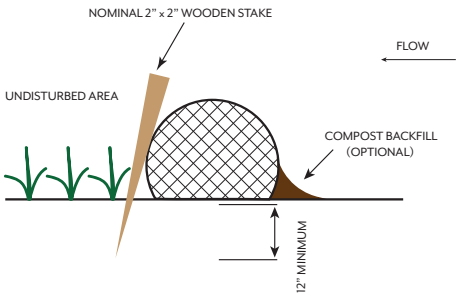

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