

SECTION 101 – TEMPORARY PERIMETER CONTROL

101.01 Scope of work. This Section describes the use of compost filter socks as perimeter control BMP devices. The socks shall be installed around the perimeter of the construction site, as indicated on the project drawings, or as designated by the Project Engineer.

101.02 Materials.

(A) Compost Filtration Media. Compost quality is an important consideration when designing a compost filter sock. Use of sanitized, mature compost will ensure that the compost filter sock performs as designed and has no identifiable feedstock constituents or offensive odors. The compost used in filter socks should meet all local, state, and Federal quality requirements. Biosolids compost must meet the Standards for Class A biosolids outlined in 40 Code of Federal Regulations (CFR) Part 503. Compost used for filtration media should follow the guidelines contained in **Table 1**, as inserted below:

TABLE 1

Parameters ^{a,1,4}	Units of Measure ^a	Vegetated Filter Sock ^a	Unvegetated Filter Sock ^b
pH ²	pH units	5.0 – 8.5	6 – 8
Soluble salt concentration ² (electrical conductivity)	ds/m (mmhos/cm)	Maximum 5	Not applicable
Moisture content	%, wet weight basis	30 – 60	30 – 60
Organic matter content	%, dry weight basis	25 – 65	25 – 65
Particle size	% passing a selected mesh size, dry weight basis	3 in.=100% 1 in.=90-100% 0.75 in.=70-100% 0.25 in.=30-75% Max length=6 in. Avoid compost with less than 30% fine particle to achieve optimum reduction of total suspended solids No more than 60% passing 0.25 in. sieve in high rainfall/flow rate situations	2 in.=100% 0.375 in.=10-30%
Stability ³ (Carbon Dioxide Rate)	mg CO ₂ -C per gram of organic matter per day	<8	(same as vegetated)
Physical contaminants (manmade inerts)	%, dry weight basis	<1	<1

Sources: ^aAlexander, 2003; ^bPersonal communication, B. Faucette, R. Tyler, N. Goldstein, R. Alexander, 2005
Notes: ¹ Recommended test methodologies are provided in [Test Methods for the Evaluation of Composting and Compost]. ² Each plant species requires a specific pH range and has a salinity tolerance rating. ³ Stability/maturity rating is an area of compost science that is still evolving, and other test methods should be considered. Compost quality decisions should be based on more than one stability/maturity test. ⁴ Landscape architects and project engineers may modify the above compost specification ranges based on specific field conditions and plant requirements.

- (B) **Compost Filter Sock.** Compost filter sock shall utilize an outer layer of filtration mesh, and an inner layer of containment netting. All layers shall collectively enclose the compost filtration media. Compost filter sock shall be installed as 9", 12", or 18" nominal diameters as indicated on the project drawings, or as specified by the Project Engineer. Compost filter socks shall be BioSock™ as manufactured by EnviroTech BioSolutions, or approved equal.
- (C) **Wood Anchor Stakes.** Wood anchor stakes shall have a nominal classification of $\frac{3}{4}$ by $\frac{3}{4}$ inch and minimum length of 16 inches. Larger sized wood anchor stakes may be installed at the discretion of the installer, or as specified by the Project Engineer. Do not use rebar or other metal rods.
- (D) **Earth Anchors.** Earth anchors shall be made of aluminum and shall have an aircraft grade galvanized wire rope tendon. Holding capacity in normal soils for the earth anchor assembly shall be 600 lbs., and ultimate capacity for each assembly shall be 1,160 lbs. Earth anchors shall be SockAnchor™ as manufactured by EnviroTech BioSolutions, or approved equal.
- (E) **Seeds.** If seeds are used to create a vegetated compost filter sock, seeds shall meet the requirements determined by the Project Engineer.
- (F) **Live Cuttings.** If live cuttings are used to create a vegetated compost filter sock, live cuttings shall meet the requirements determined by the Project Engineer.

101.03 Construction

- (A) **Best Available Technology Economically Achievable (BAT).** Compost filter socks represent Best Available Technology (BAT) standards as set forth under the National Pollution Discharge Elimination System (NPDES) guidelines. Compost filter socks are an effective replacement for BMPs such as silt fence as determined by United States Environmental Protection Agency (EPA) research which reflects; (1) their ability to be used in areas which have flow rates as high as one cubic foot per second (traditional silt fence BMP installations are limited to areas which have one half cubic foot per minute), (2) their ability to provide three-dimensional filtration of stormwater runoff (traditional silt fence BMP installations only provide one-dimensional filtration), (3) their ability to facilitate bio-remediation of stormwater which can effectively remove petroleum products, heavy metals, pesticides, nutrients, bacteria, and other pollutants (traditional silt fence BMP installations do not provide any form of remediation and have proven ineffective at removing trace amounts of pollutants), and (4) their economically achievable installation costs (EPA research has demonstrated that compost filter sock installations typically cost less over the life of a construction project than traditional silt fence BMP installations).

- (B) **Applicability.** The use of compost filter socks as perimeter control BMP devices are applicable to construction sites or other disturbed areas where stormwater runoff occurs as sheet flow. Compost filter socks can effectively replace a silt fence perimeter control BMP installation as the performance characteristics are higher than that of silt fence. General guidelines on compost filter sock selection and sizing is listed in **Table 2**, as inserted below:

Table 2 - Perimeter BMP Selection Guidelines

Perimeter BMP Device	.25 Acres & .5 CFS		.25 Acres & 1 CFS		.25 Acres & 1+ CFS	
	Per/100' Device Length		Per/100' Device Length		Per/100' Device Length	
	Yes	No	Yes	No	Yes	No
Silt Fence	X			X		X
9" BioSock™	X			X		X
12" BioSock™	X		X			X
18" BioSock™	X		X		X	

- (C) **Installation Requirements.** Installation personnel are required to satisfactorily complete training by the compost filter sock manufacturer prior to the installation of compost filter socks on the project site. Installation personnel shall follow all manufacturer instructions and guidelines. All installation personnel shall provide evidence of required training upon request of the Project Engineer.
- (D) **Placement.** Compost filter socks shall be installed onsite using a commercial pneumatic bark blower. Alternatively, compost filter socks can be pre-fabricated offsite in pre-determined lengths and then installed onsite. Compost filter socks shall be placed in the areas shown on the project drawings or as designated by the Project Engineer.
- (E) **Overlap.** Where multiple sections of compost filter socks are required to form a continuous run, the sections shall be installed according to the attached **Detailed Specifications** for **Perimeter Protection** and shall have a minimum overlap of 6 inches.
- (F) **Anchor Method.** The Compost Filter Sock shall be anchored using wooden anchor stakes which meet the minimum requirements set forth in Section 101.02(C). Wooden anchor stakes shall be installed to a minimum depth required to attain effective

anchoring. Finished height of wooden anchor stake installation shall not exceed 1 inch above the finished height of the compost filter sock installation. Wooden anchor stakes shall be installed per the **Detailed Specifications for Anchoring Method A, B, C, or D** according to the guidelines below:

<u>Slope Gradient</u>	<u>Anchor Method</u>	<u>Anchor Spacing</u>
<4:1	Not Required	Not Required
4:1 to 3:1	A or B	10'
>3:1 to 2:1	A	5' to 10'
>2:1	C	5'

NOTE: At the discretion of the installer, **Anchor Method D** can be used to replace **Anchor Methods A, B & C**.

101.04 Inspection. Inspect compost filter socks when rain is forecast, following rainfall events, and daily during prolonged rainfall. Repair, modify, or supplement compost filter sock installations as needed or as required by the engineer.

101.05 Maintenance. Maintain compost filter socks to provide adequate sediment holding capacity. Sediment should be removed when the sediment accumulation reaches three quarters (3/4) of the barrier height. Removed sediment should be incorporated in the project at locations designated by the Project Engineer or disposed of properly.

101.06 Removal of Compost Filter Sock. Upon completion of the project and after permanent BMPs such as grassing have been established, the compost filter sock's mesh and netting shall be removed from the project site and disposed of properly. The compost filtration media previously contained within the mesh and netting shall be dispersed on-site and left as a soil cover and amendment.

101.07 Method of Measurement. Compost filter sock shall be measured by the "linear foot" installed in the areas shown on the project drawings or as directed by the Project Engineer.

101.08 Basis of Payment. Accepted compost filter sock installations, measured as provided in Section 101.07, will be paid for at the contract unit bid price listed for each size of "*Compost Filter Sock for Perimeter Control*". The bid price shall include all costs associated with the proper installation, maintenance, and removal of the compost filter sock, which includes but is not limited to; furnishing the compost filter sock, furnishing the compost filtration media, furnishing the required anchors, furnishing all required supervision, labor, equipment and incidentals required to install and maintain the compost filter sock, removal and proper disposal of the sock's mesh and netting, and the spreading of compost filtration media on-site as directed by the Project Engineer.

END OF SECTION 101