



Cedar Grove Landscape & Construction Services

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WHY COMPOST-BASED EROSION CONTROLS ARE THE BEST TOOLS TO MEET NPDES PHASE II

Compost Filter Socks, Berms and Blankets provide superior erosion control and runoff filtration using 100% locally-recycled and reusable materials. These effective, economical tools should be the preferred methods of communities and developers committed to sustainable practices.

Research Shows Compost-Based Erosion Controls Are More Effective Than Traditional Tools (citations on back):

Compost Socks and Berms Produce Cleaner Runoff

- Remove more sediment than silt fencing, for runoff with reduced turbidity. (1, 2, 9)
- Remove higher percentages of metals, nutrients and petrochemicals from runoff than silt fencing. (3,6)

Compost Socks Are More Resistant to Washouts

- Allow more rapid flow-through of sediment-laden water than silt fencing, reducing failures by over-topping or washouts. (6)
- Ease of installation makes proper application more likely than sediment fencing.

Compost Blankets Produce Quicker and Denser Vegetation Establishment, and Cleaner Runoff

- Support quicker and denser vegetation coverage than hydroseeding. (5)
- Produce cleaner runoff than hydroseeding with silt fencing; with less sediment, nutrients and metals. (4, 7, 8)

Compost Blankets Delay and Reduce Runoff

- Delays runoff from storms 2-3 times longer than hydroseeding, upon application and a year later. (4)
- Reduce total runoff volumes. (4)

Compost-Based Erosion Controls Are Sustainable

- Made from locally-recycled material
- Little or no waste to dispose.
- Reuse on-site to meet Post-Construction Soil Quality & Depth BMP
- Conserves water, grows healthy plants.

Compost-Based Erosion Controls Approved on USEPA Menu

Compost Berms Replace:

- Silt Fence
- Straw bales
- Waddles / fiber rolls
- Other synthetic barriers

Compost Filter Socks Replace:

- Bio bags
- Waddles / fiber rolls
- Ditch Checks
- Storm drain inserts
- Reinforced silt fence

Compost Blankets Replace:

- Jute netting / blankets
- Wood fiber blankets
- Straw mulch / blankets
- Coconut Fiber blankets / netting
- Plastic netting / mesh
- Synthetic fiber with netting
- Bonded synthetic fibers

Terraseeding with Compost Replaces:

- Hydroseeding
- Hydroseeding with straw mulch
- Bonded fiber matrix

Compost-Based Erosion Control Studies

1. Caine. *Quilceda-Allen Watershed Erosion Control Program – Water Quality Monitoring Report*. Snohomish County Dept. of Planning and Development Services. 2001. Filter berms reduced turbidity in simulated rainfall event by 67%, while adjacent silt fence and coir treatments provided no reductions.
2. Demars, Long and Ives. New England Transportation Consortium. *Use of Wood Waste for Erosion Control*. (2000) Filter berms reduced total sediment by 80% relative to silt fence and 97% relative to hay bales after a 3/4-inch storm event, and 91% and 92% respectively after a 4.4-inch storm.
3. Faucette, Cardoso-Gendreau, Codling, Sadeghi, Pachepsky and Shelton. *Storm Water Pollutant Removal Performance of Compost Filter Socks*. 2008. Compost filter socks placed on bare concrete reduced concentrations in runoff of motor oil by 84%, diesel fuel by 99% and gasoline by 43%. Filter socks also reduced levels of Cadmium, Chrome, Copper, Nickel, Lead and Zinc by 37% to 71%.
4. Faucette, Jordan, Risse, Cabrera, Coleman, and West. *Evaluation of Stormwater from Compost and Conventional Erosion Control Practices in Construction Activities*. Journal of Soil and Water Conservation. Vol. 60, No. 6. 2005. Seeded compost blankets generated 75% less runoff than hydroseeded plots with silt fence during a simulated 3 inch in an hour rain three months after application. After one year, compost blankets generated 10% less runoff in a similar event. Initiation of runoff took twice as long for compost blankets then for hydroseed/silt fence at application, four times as long three months after application, and 1.4 times longer after one year. Total solid loads averaged 3.5 times greater from hydroseed/silt fence than from compost blanket during the first storm, and 16 times greater at 3 months. Runoff from hydroseeded plots contained over twice as much total nitrogen and six times the soluble nitrogen initially, five times as much of both forms at 3 months, and about 20% more at one year. Phosphorous and dissolved-reactive phosphorous levels in runoff were 2 and 7 times higher respectively from the hydroseed/silt fence treatment at day one, 4 and 3.3 times higher at three months, and 1.6 and 1.3 times higher after one year.
5. Faucette, Risse, Jordan, Cabrera, Coleman, and West. *Vegetation and Soil Quality Effects from Hydroseed and Compost Blankets Used for Erosion Control in Construction Activities*. Journal of Soil and Water conservation. Vol 61, No 6. 2006. Yardwaste compost blankets applied with grass seed provided an average of 2.75 times more vegetative cover than hydroseed after three months. After one year, the treatments had similar grass biomass, but the hydroseeded area had almost seven times as much weed biomass.
6. Keener, Faucette and Klingman. *Flow-Through Rates And Evaluation Of Solids Separation Of Compost Filter Media Vs. Silt Fence In Sediment Control Applications*. 2006. Presentation for American society of Agricultural and Biological Engineers. Runoff ponding behind silt fence was 75% higher than for compost filter socks after 30 minutes at 5 gallons per minute for each foot of length. Runoff quality was similar despite the faster flow rate through filter socks.
7. Mukhtar, McFarland, Gerngross and Mazac. Efficacy of Using Dairy Manure Compost as Erosion Control and Revegetation Material. 2004. American Society of Agricultural Engineers. Compost erosion control blankets relative to seed + fertilizer reduced total nitrogen by 88%, nitrate-nitrogen by 45%, and total and soluble phosphorus by 87%.
8. Richard, Persyn and Glanville. *Cover Crop Production and Weed Control on Highway Right-of-Ways Using Composted Organics*. 2002. Compost erosion control blankets used for slope stabilization on highway embankments reduced total nitrogen, total phosphorus, and soluble phosphorus by 99% relative to seed and topsoil applications.
9. Stewart, Pommier, Lenhart, Faha, Collins and Ettlin. *Demonstration Project Using Yard Debris Compost for Erosion Control – Final Report: Portland Metropolitan Services District*. 1993. Compost filter berms reduced total solids concentrations by 72% and suspended solids by 91%, relative to silt fence on a 34% slope, over 5 rainfall events.

Summary of Sediment Removal Efficiency Studies for Various Sediment Control Devices

Silt Fence	3% turbidity	Horner, 1990
Silt Fence	0% turbidity	Barrett et al, 1998
Silt Fence	0-20% clay, 50% silt, 80+ % sand	US EPA, 1993
Compost Filter Sock	98% total solids, 70% suspended solids, 55% turbidity	Faucette & Tyler, 2006
Compost Berm vs Silt Fence	35% less total solids	Faucette et al, 2005
Compost Berm vs Silt Fence	91% less total solids	Demars & Long, 2000
Compost Berm vs Straw Bale	92% less total solids	Demars & Long, 2000
Compost Berm vs Silt Fence	72% less total solids, 91% less suspended solids	Ettlin & Stewart, 1993