Stormwater Best Management Practice

Compost Filter Berms

Minimum Measure: Construction Site Stormwater Runoff Control
Subcategory: Sediment Control

Description

A compost filter berm consists of compost or a compost product placed perpendicular to sheet flow to control erosion in disturbed areas and retain sediment. It can replace a traditional erosion and sediment control practice such as a silt fence. It provides a three-dimensional filter that retains sediment and other pollutants (e.g., suspended solids, metals, oil and grease) while allowing the cleaned water to flow through the berm. Composts in filter berms come from a variety of feedstocks, including yard trimmings, food residuals, separated municipal solid waste, biosolids and manure.

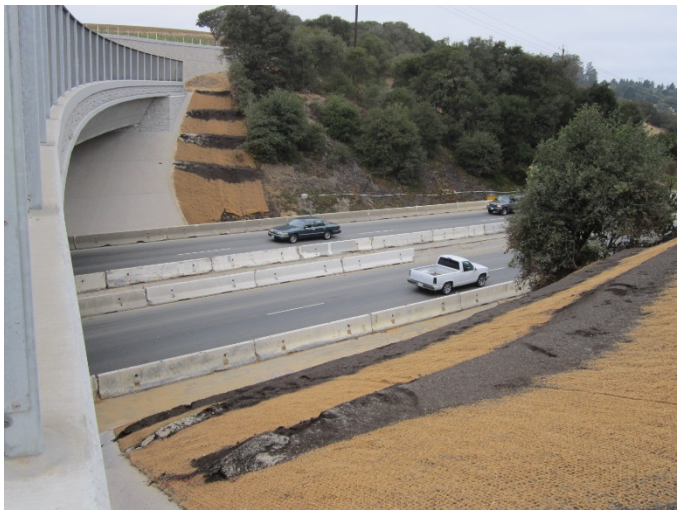
The berms can be vegetated or unvegetated. Vegetated filter berms normally remain in place and provide long-term stormwater filtration as a post-construction stormwater control. Construction staff often break down unvegetated berms once construction is complete and spread the compost around the site as a soil amendment or mulch.

Applicability

Construction staff generally use compost filter berms along the perimeter of a construction site with relatively small drainage areas, or at intervals along a slope, to capture and treat stormwater sheet flow. Construction staff can use compost filter berms on steeper slopes with faster flows if they place the berms closer together or use them in combination with other erosion and sediment control practices, such as compost blankets or compost filter socks, to slow stormwater flow velocities. Compost filter berms can also be particularly useful in areas where ground penetration is not desirable.

Compost Quality Considerations

Compost is the product of controlled biological decomposition of organic material that has undergone sanitization through heat generation and stabilization to the point that it benefits plant growth. The metabolic processes of microorganisms decompose organic material. These microbes require oxygen, moisture and food to grow and multiply. Maintaining these three factors at optimal levels greatly accelerates the natural process of decomposition. Many organic materials, such as leaves, food scraps, manure and biosolids, can produce compost.



Compost filter berms placed perpendicular to the slope along the side of a highway.

Credit: Anthony D'Angelo for USEPA, 2012

Compost quality is an important consideration when designing a compost filter berm. Use of sanitized, mature, biologically stable compost ensures that the compost filter berm performs according to design, has no identifiable feedstock constituents or offensive odors, and minimizes soluble nutrient loss.

Factors that determine the quality of compost are:

- **Maturity:** Maturity indicates how well the compost will support plant growth. One maturity test compares the percentage of seeds that germinate in compost compared to a potting soil mix. The difference in germination rates marks the maturity of the compost.
- **Stability:** Stability indicates microbial activity in the compost and can directly correlate to carbon dioxide production from the compost due to microbe respiration during the decay process. A stable