

PC-12 ORGANIC FILTER

Reference: Maryland Stormwater Design Manual.



Photograph to come.

BMP Objectives

- Perimeter Control
- Slope Protection
- Borrow and Stockpiles
- Drainage Areas
- Sediment Trapping
- Stream Protection
- Temporary Stabilizing
- Permanent Stabilizing

Definition and Purpose

Organic filters are used to capture and treat a volume of stormwater runoff. This BMP is identical to a Surface Sand Filter (PC-10).

However, the runoff storage zone is underlain by a 50/50 peat and sand mixture filter bed with an underdrain system. This filter is used in areas where maximum nutrient or trace metal removals are desired. The underdrain system then conveys flows to a swale or storm sewer.

Appropriate Applications

Upstream grass channels or filter strips can be used to protect the integrity of the basin. An organic filter:

- Can be used to enhance stormwater quality and reduce peak discharges.
- Is most effective in treating runoff from small storms or early stages of larger storms.
- Is subject to clogging if moderate to high levels of silts and clays flow into facility and should not be used while construction is occurring in the upstream catchment. Pre-treatment basin can be used to filter out finer materials and prevent the filter bed from clogging.
- Is generally suited to tributary, on-site drainages and most development sites where sediment loads are low and there is no base flow.
- Can also be used in areas of thin soil and high evaporation rates.
- Has an upper limit drainage area of 50 acres, although most applications are for areas between 0.5 and 10 acres.
- Should be located in a flat or only slightly depressed area.
- Is useful in watersheds where groundwater quality is a concern or where low permeability soils prevent infiltration.
- Should not be located close to building foundations or in areas where expansive soils are a concern.

Design Parameters

- Generally, basins are designed to infiltrate retained runoff within a 40-hour period.
- A dense vegetative cover needs to be established over all contributing pervious areas before runoff can be conveyed to the filter.
- Screens/grated inlets should be considered in design to keep debris out of filter chambers.

Maintenance and Inspection

- Conduct inspections as required by the NPDES permit or contract specifications during construction.
- Periodic inspection and maintenance will be required based on post-construction site conditions.
- Make any repairs necessary to ensure the measure is operating properly.
- Regular maintenance is necessary to remove surface sediment, trash, debris, and leaf litter.
- In certain cases, layers of sand or peat will need to be replaced every 3 to 5 years.