

PREVENTING POLLUTION WITH SEDIMENT BARRIERS

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Perimeter sediment controls are among the most used erosion and sediment control best management practices (BMPs) on construction sites. The most recognizable of these are sediment barriers, which include compost filter sock, silt fence, and straw bales.

Although commonly used, sediment barriers are often incorrectly applied or installed. This tech sheet reviews the purpose of these barriers, explores the most popular types, and offers advice on their proper placement and installation.

The Purpose of Sediment Barriers

Sediment barriers capture sediment that has been mobilized by stormwater runoff from areas of earth disturbance. These barriers have limitations on where they can be installed to function properly. They should not be placed in the path of concentrated flow, such as in drainage channels and across pipe outfalls.

They are designed to intercept shallow, slow-moving runoff, commonly referred to as sheet flow. As water backs up behind the barrier, sediment settles out and water seeps through the barrier filter medium. When sediment barriers are placed in areas of concentrated flow, they often fail because the force of flow causes undermining and the volume of water results in overtopping.

Sediment barriers need to be placed in areas that will provide sufficient room to intercept sheet flow. To allow for water to temporarily pool behind it, the barrier should be offset from the bottom of a slope or the edge of earth disturbance, and it should always be placed on a stabilized surface (i.e., not bare earth). The sediment barrier must be placed on a level grade, meaning not sloping from end to end, and

each end must be extended at least 8 feet upslope at an approximate 45-degree angle to form an enclosure.

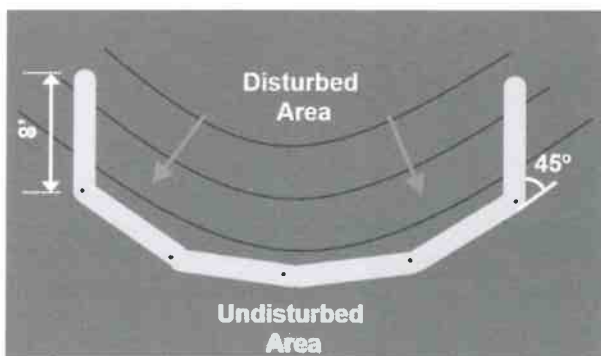


Illustration of proper sediment barrier placement

Types of Barriers

Compost Filter Sock – At the turn of the millennium, compost filter sock (CFS) began to replace silt fence as the industry standard for sediment barriers.

CFS is a permeable fabric casing filled with organic compost. It comes in a variety of sizes, from 8 to 32 inches in diameter. What size to use depends on the slope and drainage area upslope of the CFS. In general, the steeper the slope and larger the area, the greater the size of the CFS.

Typically, CFS is purchased from a specialized vendor who installs it at the construction site, using a blower truck to fill the sock with compost. Smaller sized socks (up to 12 inches) can be purchased prefilled with compost and be used for smaller areas and shorter-term applications.

CFS can be installed on just about any terrain, including soil, rock, and pavement. The compost material inside of the sock is heavy, which allows the CFS to conform to the surface it is placed on. When placed on stabilized (i.e., vegetated) soil, the CFS is secured to the ground with wooden stakes. When placed on hard surfaces, loose compost is laid at the sock-surface interface to help create a seal and prevent undermining.



Compost filter sock

Silt Fence – Silt fence is a commonly used sediment barrier. The advantages it has over CFS include that it can be installed manually with ordinary equipment and it is easy to stock and deploy whenever needed.