

Brush Barrier



Brush barriers trap sediment and remove pollutants from stormwater

Description

Brush barriers are perimeter sediment control structures constructed of material such as small tree branches, root mats, stone, or other debris left over from site clearing and grubbing. Brush barriers can be covered with a filter cloth to stabilize the structure and improve barrier efficiency.

Applicability

The drainage area for brush barriers must be no greater than 0.25 acre per 100 feet of barrier length. In addition, the drainage slope leading down to a brush barrier must be no greater than 2:1 and no longer than 100 feet. Brush barriers have limited usefulness because they are constructed of materials that decompose.

Siting and Design Considerations

It is recommended that brush barriers be covered with a filter fabric barrier to hold the material in place and increase sediment barrier efficiency. The barrier mound should be at least 3 feet high and 5 feet wide at its base. Material with a diameter larger than 6 inches should not be used, as this material may be too bulky and create void spaces where sediment and runoff will flow through the barrier. The edge of the filter fabric cover should be buried in a trench 4 inches deep and 6 inches wide on the drainage side of the barrier. This is done to secure the fabric and create a barrier to sediment while allowing stormwater to pass through the water-permeable filter fabric. The filter fabric should be extended just over the peak of the brush mound and secured on the down-slope edge of the fabric by fastening it to twine or small-diameter rope that is staked securely.

Limitations

Brush barriers are not appropriate for high-velocity flow areas. A large amount of material is needed to construct a useful brush barrier, therefore, alternative perimeter controls such as a fabric silt fence may be more appropriate for sites with little material from clearing. Brush barriers provide temporary storage for large amounts of cleared material from a site, however, this material should be removed from the site after construction activities have ceased and the area is stabilized.

Maintenance Considerations

Brush barriers should be inspected after each significant rainfall event to ensure their continued effectiveness. If channels form through void spaces, the barrier should be reconstructed to eliminate the channels. Accumulated sediment should be removed from the uphill side of the barrier when sediment height reaches between one-third and one-half the height of the barrier. When the entire site has reached final stabilization, the brush barrier should be removed and disposed of properly.

Effectiveness

Brush barriers can be effective at reducing offsite sediment transport, and their effectiveness is greatly increased with the use of a fabric cover on the up-slope side of the brush barrier.

Cost Considerations

Creating brush barriers can cost from \$390 to \$620, depending upon the equipment used, vegetation type (heavy or light), fuel price, personnel, amount of filter fabric needed (if used), and the number of hours to perform the task. A common filter fabric, geotextile, can range in cost from \$0.50 to \$10.00/square yard, depending upon the type of geotextile used.

References

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VDCR (Virginia Department of Conservation). 1995. *Virginia Erosion & Sediment Control Field Manual*. Second Edition. Virginia Department of Conservation, Division of Soil and Water Conservation.