

Structural Control:

Silt Fence



Description and Purpose:

A silt fence is a temporary sediment control measure which consists of filter fabric attached to supporting posts. The fence is then trenched into the ground so that runoff is filtered as it passes through the fabric. Silt fences are designed to intercept and detain sediment so that it cannot leave the site, thus are normally used in perimeter control or on the down slope side of a soil disturbing activity.

Planning Considerations:

Site Suitability:	Drainage area less than .25 acre per 100' of fence length (Source: USEPA, 1992) Slope length above the fence is less than 100 feet (Source: USEPA, 1992) Water reaching the fence is sheet flow with maximum flow rate of 0.5 cfs (Source: USEPA, 1992)
Avoid: BMP Siting:	Areas where there is concentrated flow Site perimeter Down slope side of a soil disturbing activity
Acreage Needed:	Minimal
Percent Removal of TSS:	Average: 70% Sandy Soil: 80-99% Silt Loam: 50-80% Silt Clay-Loam: 0-20% (Source: USEPA-804-B-92-002, 1993)
Design Life:	6 months
Estimated Cost:	Average: \$3.00/linear foot or \$700/drainage acre Range: \$1-\$8.00/linear foot Annual Maintenance: 100% of construction Total Annual Cost: \$7.00/linear foot or \$850/drainage acre (Source: USEPA-804-B-92-002, 1993)

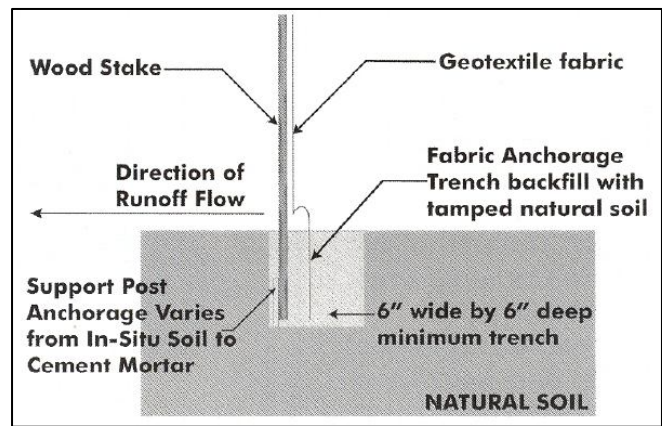
Design/Construction Guidelines:



Silt fences should be installed along the contour, with the ends of the fence pointing upward. The maximum height of the fence should range between 18 and 36 inches above the ground surface, depending on the amount of upslope ponding expected (Source: USEPA, 1992). Supporting posts should not be more than 4 feet apart, and should be driven 8-12 inches into the ground. Posts should be of sufficient size to withstand the expected runoff and sediment loading (i.e., 2" x 2" or 2" x 4" pine or 1.00-1.33 lb/linear foot steel). Filter fabric pore size should be small enough to trap the typical sediments from the site based on soil type. The filter fabric should be stapled on the upslope side of the stakes. Wire fencing may be used as a backing to reinforce standard strength filter cloth. The filter fabric should be anchored at least 4 inches into a trench dug on the upslope side of the posts. The trench should then be back-filled and compacted.

Operation/Maintenance Guidelines:

Silt fences must be regularly maintained to preserve their effectiveness. Silt fences should be inspected after each significant runoff event and at least daily during prolonged rainfall. Any repairs to the fence should be made immediately. Trapped sediments should be removed when they reach one third to one half the height of the filter fence. Care must be taken to avoid damaging the fence during cleanout. All sediments removed must be disposed of properly. The silt fence should not be removed until the upslope area has been permanently stabilized.



Similar Practices:

Straw Bale Dikes

Regulatory Notes:

None

Advantages of a Silt Fence:

- Removes sediments and prevents downstream damage from sediment deposits
- Reduces the speed of runoff flow
- Minimal clearing and grubbing required for installation
- Relatively inexpensive
- May be reused

Disadvantages of a Silt Fence:

- May result in failure from improper choice of pore size in filter fabric or improper installation
- Should not be used in streams or areas of concentrated flow
- Is only appropriate for small drainage areas with sheet flow
- Frequent inspection and maintenance is necessary to ensure effectiveness