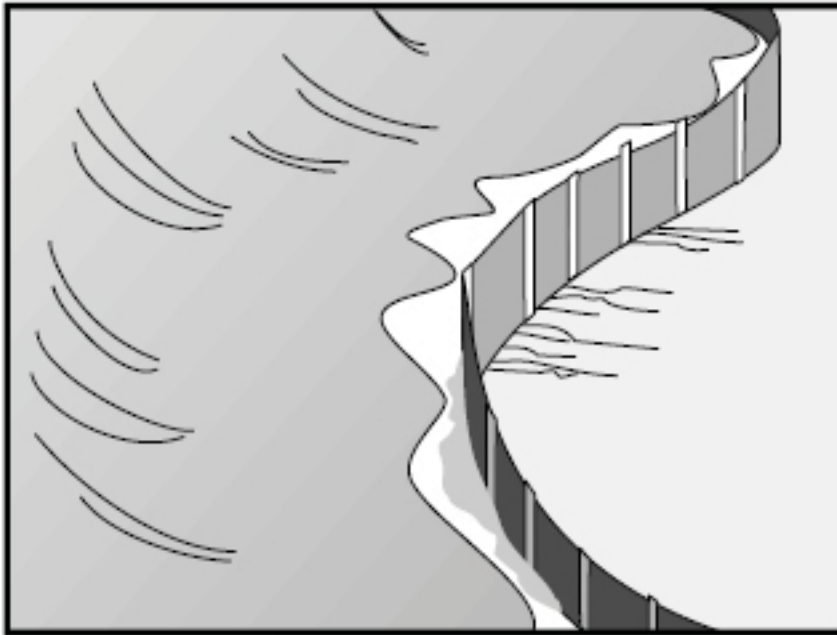


Silt Fence



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Silt fences are temporary measures for sediment control, usually consisting of posts with filter fabric stretched across them. A wire backing is sometimes used for support. Silt fences capture sediment-laden water from small drainage areas, allowing water to slowly pass through the fabric while trapping sediment. Silt fences work best with other BMPs such as sediment traps or basins. The super silt fence, a modification of the traditional silt fence, has a backing material made of chain-link fencing held in place by steel posts. It is more durable than the standard silt fence which this fact sheet addresses. For more information on super silt fences, see USEPA, 2004.

Usage

Install a silt fence prior to soil disturbance in the following construction areas:

- along the perimeter of a project
- below the toe of exposed and erodible soils
- along streams and other waterways
- around temporary spoil areas and stockpiles
- below other small cleared areas

Use of a silt fence should be avoided in the following areas:

- streams, channels, drain inlets, or anywhere with a concentrated flow
- areas larger than 1 ac
- areas with a flow rate greater than 0.5 cfs

Benefits

- removes sediment and prevents downstream damage from sediment deposits
- reduces the speed of runoff flow
- requires minimal clearing for installation
- is relatively inexpensive as compared to other sediment controls

Estimated Cost

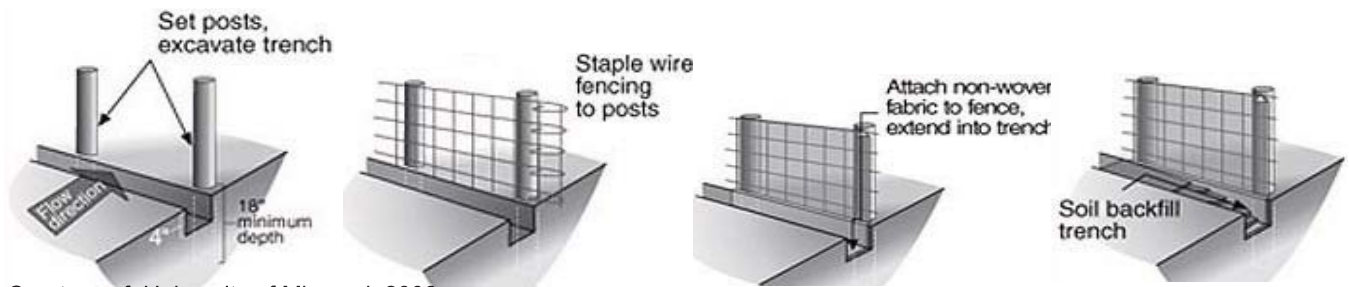
\$5-\$10/linear ft

Averages are based on annual costs for installation & maintenance, assuming a 6-mo lifespan

Alternatives

- Fiber roll (p. 3-5)
- Gravel bag berm (p. 3-7)
- Sandbag barrier (p. 3-9)

Notes:



Courtesy of: University of Missouri, 2003

Limitations

- may result in failure from improper choice of filter fabric pore size or improper installation
- is only appropriate in small drainage areas with overland flow
- necessitates frequent inspection and maintenance to ensure effectiveness
- avoid use in areas of constant runoff flow

Notes:

Slope %	18-in Fence	30-in Fence
<2	250 ft	500 ft
5	100 ft	250 ft
10	50 ft	150 ft
20	25 ft	70 ft
25	20 ft	55 ft
30	15 ft	45 ft
35	15 ft	40 ft
40	15 ft	35 ft
45	10 ft	30 ft
50	10 ft	25 ft

Maximum Slope Lengths for Silt Fences Courtesy of: USEPA, 2004

Installation Tips

- construct on level contour with sufficient area behind the fence for ponding to occur
- construct at least 3 ft from the toe of a slope; if a silt fence is located close to the toe of the slope it will be less effective
- excavate 4-6 in wide and 4-6 in deep along the line of proposed fence
- space posts no more than 6 ft apart and drive into ground to a depth of 18 in or more
- silt fence material should have ultraviolet ray inhibitors and stabilizers to extend the material life
- filter fabric should be strong enough to withstand both contained water and sediment
- extend filter fabric into the trench and attach to posts with heavy-duty wire staples at a length of at least 1 in; if a joint is necessary, filter fabric should be spliced together only at a support post with at least 6 in overlap and both ends stapled to the post

Installation Tips (continued)

- the fence requires a metal wire backing to be fully effective; if wire is not strong enough consider using a super silt fence
- backfill the trench with compacted native material
- a general rule-of-thumb for optimum drainage area size is 1/4 ac of drainage area per 100 ft of silt fence, but this is highly variable depending on climatic conditions
- detailed installation tips can be found in the ODNR Rainwater and Land Development manual

Maintenance

- a study done by Paterson found that 40% of silt fences are installed and maintained improperly: follow installation tips and maintenance procedures carefully to avoid possible regulatory action
- inspect the silt fence before anticipated rainfall events, after each rainfall event, and at least once every 2 weeks at all other times
- repair or replace cut, split, torn, slumping, or weathered fabric (fabric lifespan is approximately 6 mos)
- remove sediment from the fence if it reaches a height of 12 in and dispose of all excess sediment properly
- leave silt fence in place until disturbed areas upland are stabilized
- seed and mulch or discard accumulated sediment once silt fence is removed; backfill and repair all holes and depressions caused by removal

Vendors

See Appendix page F16-F17

References

California Stormwater Quality Association (CASQA). 2003. California stormwater best management practices handbook for construction.

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USEPA. 1993. Stormwater Management and Technology. Noyes Data Corporation. Park Ridge, New Jersey.

USEPA. 2004. Development Document for Final Action for Effluent Guidelines and Standards for the Construction and Development Category. USEPA, Washington, D.C.