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## Silt Fences

**Description/Goals**

Silt fences are geotextile, semi-permeable sheets supported by posts and anchored in the ground to intercept sediment-laden runoff. They remove sediment partially by filtering the runoff and partially by slowing it down, providing an opportunity for settling. Silt fences are a "perimeter control", or a device used to prevent eroded sediment from leaving the construction site. Their efficiency for sediment removal ranges from 33% (W&H Pacific and CH2M-Hill, 1993) to 86% (Horner et al., 1990) depending on site conditions. They can be an effective tool when used properly.

**APPROXIMATE**

**Cost:** \$2.50 - \$3.00/ft

**EFFECTIVENESS**

Low    *Min*    *High*

Erosion/ Sediment Control		✓
Long-Term Pollution Reduction	✓	
Habitat / Stream Protection		✓

**EASE OF APPLICATION**

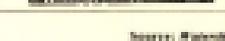
Difficult    *Average*    *Easy*

Installation	✓
Maintenance	✓

**Limitations**

- Steep slopes or channels
- Construction traffic

**Conditions that Limit the Effectiveness of Silt Fences**

	Slope erodes. Length of string 15% to 30%, cuttings from 50 feet more than 50%, cuttings from 25 feet more than 20%.
	Silt fence filter allowed parallel to slope erodes.
	Edges of the silt fence are not compacted, allowing flow to bypass the fence.
	Spacing between posts is greater than 50 feet.
	Posts are not embedded deeply enough to prevent undercutting.
	Spacing between posts is greater than eight feet.
	Fence restricts concentrated flow without reinforcement.
	Installed behind an existing pipe or wall.
	Silt fence in landscape of the proposed area.
	Silt fence placement does not consider water-erosion habits.
	Maximum capacity beyond silt fence erodes quickly and increases erosion potential.
	Alignment of silt fence restricts the capacity to flow at distribution, but does not reduce flow volume.

Source: Watershed Protection Techniques Vol. 2-83

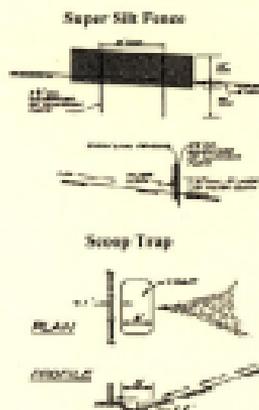
#### TECHNIQUES/CHALLENGES AND LIMITATIONS

Silt fences can be used on most construction sites, but their effectiveness is limited by improper design, installation and maintenance. The previous table outlines twelve conditions that can limit the effectiveness of silt fences. Rectifying these situations can greatly improve the performance of silt fences.

#### INNOVATIONS/IMPROVEMENTS

Two silt fence innovations, demonstrated below are the use of a "Super Silt Fence", a Scoop Trap and Silt Fence Anchors. The super silt fence, used in suburban Maryland, uses a chain link fence as a backing for the silt fence and uses stronger geotextile fabric. This technique, however, is very expensive compared with traditional silt fence (about \$9/linear foot). The scoop trap, a "mini-sediment trap" used before a silt fence, provides extra settling and protects the silt fence when it is used in an area of concentrated flow.

A third innovation, the Silt Fence Anchor, clips to the bottom of the geotextile, ensuring that it remains in place throughout construction. For more information on this product, contact Brooks Emory of EnviroGuard, Inc. at (205) 324-3250.



Source: Erosion Prevention Techniques Vol. 2 48

#### SILT FENCE SUPPLIERS

Acme Bag Company  
San Diego, CA  
(619) 235-4460

Nicolon/Miraf Group  
Lake Forest, CA  
(714) 859-2850

Santa Fe Bag Company  
Yreka, CA  
(213) 585-7225

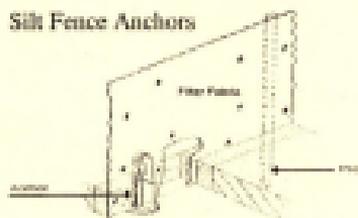
Synthetic Industries  
Chattanooga, TN  
(800) 621-0444

For more information contact the International Erosion Control Association at (800) 455-4322 or ask your county Soil and Water Conservation District about local suppliers.

#### REFERENCES

Homer, R.R., J. Gaudry and M.H. Korteberg. 1990. *Improving the Cost Effectiveness of Highway Construction Site Erosion and Pollution Control*. Washington State Transportation Center, Federal Highway Administration, Seattle, WA. 79 pp.

W&H Pacific and CH2M-Hill. 1993. *Demonstration Project Using Yard Debris Compost for Erosion Control*. Portland Metropolitan Service District, Portland, OR. 90 pp.



Source: EnviroGuard, Inc., Birmingham, Alabama