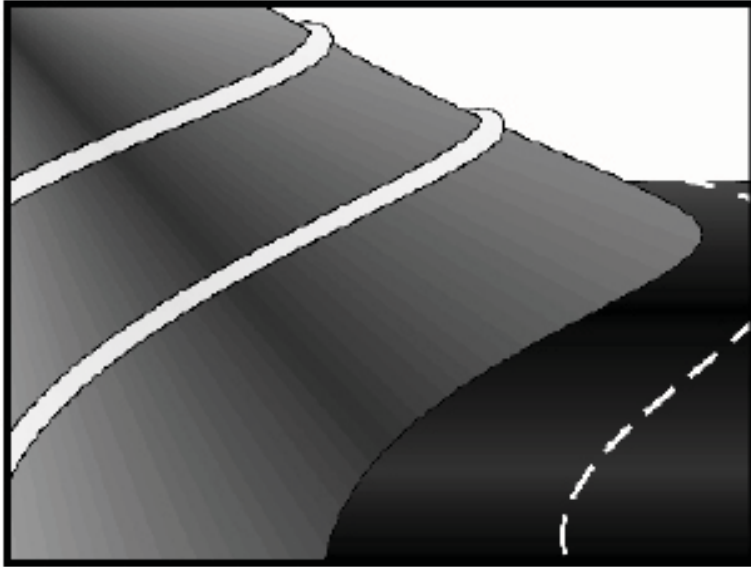


Fiber Roll/Sediment Log



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Fiber rolls are tightly compacted tubular cylinders composed of straw, flax, coconut fiber, or other similar types of material wrapped with a fiber mesh. When installed at the base of an embankment or on a slope, fiber rolls are effective at controlling sediment and reducing erosion rates. They achieve this by intercepting stormwater runoff, thereby reducing the velocity of the flow and dispersing concentrated runoff as sheet flows. Fiber rolls are also water-permeable and are fairly effective at trapping eroded sediment.

Usage

- install on slopes with surface disturbance, or on vegetated slopes where vegetation is failing to control erosion
- place on the toe, face, top, and at gradient breaks of a slope, and in transition zones between slope gradients
- install anywhere a traditional fabric silt fence would be used; the difficulty of fiber roll removal may make this undesirable in certain locations
- use as check dams in channels and as artificial swales on slopes
- avoid using on slopes that are unstable and prone to slumping or landslides

Benefits

- can be left in place once installed since they are completely biodegradable (usually within 5-6 yrs)
- require a greatly reduced level of maintenance and monitoring when used as an alternative to traditional fabric silt fences
- may be used to create swales on a slope with a minimum of disturbance
- are more convenient and much more effective than straw bales when long lengths are needed
- transport and install with ease; require no special techniques or tools
- are flexible; may be molded and anchored to conform to slope contours
- will support vegetative growth if left in place

Estimated Cost

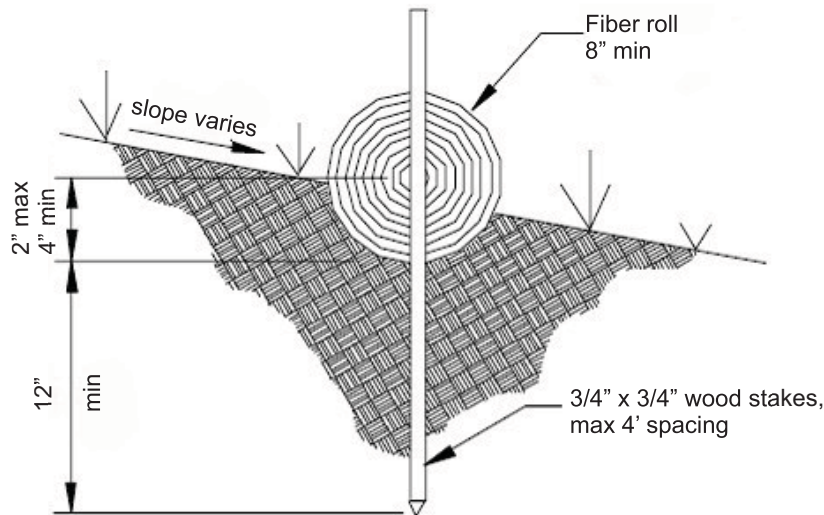
\$20.00-\$35.00/ft, depending on material

Alternatives

- Check dam (p. 3-2)
- Gravel bag berm (p. 3-7)
- Sandbag barrier (p. 3-9)
- Silt fence (p. 3-15)

Notes:

Fiber Roll/Sediment Log



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Limitations

- are difficult to move when water-saturated
- may be transported downslope during intense stormwater flows if not trenched or anchored properly
- are most effective when combined with some type of surface stabilization, such as mulching, geotextiles, or vegetation reestablishment
- require periodic removal and proper disposal of accumulated sediment

Installation Tips

- drive wooden stakes at least 2 ft in length through center line of fiber roll at 3-4 ft intervals
- place in a trench that is 2-4 in deep and that is as wide as the diameter of the fiber roll; this is necessary to prevent water flows from running under the fiber roll
- turn ends of fiber rolls upslope to prevent water from flowing around ends
- overlap ends when multiple rolls are placed end to end, therefore preventing gap formations

When utilized to control stormwater on long slopes:

- a slope with an inclination of 4 ft horizontal to 1 ft vertical [4:1 (H:V)] requires placement of rolls at a maximum of 20 ft apart
- a slope with an inclination between 4:1 (H:V) and 2:1 (H:V) requires placement of the rolls at a maximum of 15 ft apart
- a slope with an inclination of 2:1 (H:V) or greater requires placement of rolls at a maximum of 10 ft apart

Maintenance

- inspect fiber rolls for deficiencies prior to forecasted rain events, daily during extended periods of rain events, after rain events, and at 2-week intervals at all other times
- remove sediment that has become trapped behind the fiber roll, especially when the sediment level reaches the halfway point between the ground surface and the top of the fiber roll

Vendors

See Appendix pages F5-F6

References

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