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Geotextiles are mats composed of natural materials or synthetic fibers that are used to cover bare soil and reduce erosion. Mats may be composed of several different material types: jute, straw, wood fiber, coconut fiber, plastic, and synthetic fibers. These mats may also be used to stabilize soil for the establishment of vegetation. Current research suggests that the composition of the geotextile does not dramatically effect performance capabilities. Compared to mulching, geotextiles made out of biodegradable materials are more stable.

## Usage

Geotextiles may be used on any surface that needs to be stabilized, particularly in:

- earth dikes or drainage swales where flow is greater than 3.5 fps
- areas where vegetation is slow to establish

## Benefits

- provides immediate erosion protection and long term vegetative reinforcement on slopes
- effective for use on steep slopes
- use on stream banks if flow is between 3-6 ft/sec
- may be used where temporary seeding cannot occur due to the season or slope of the area
- biodegradable geotextiles may be left in place
- geotextiles are more effective at reducing erosion than straw mulch

## Limitations

- some materials are light-sensitive and should be protected before installation
- avoid leaving plastic geotextiles in place and ensure that they are disposed of in a landfill

### Estimated Cost

\$0.50-\$10/sq yd., depending on type chosen

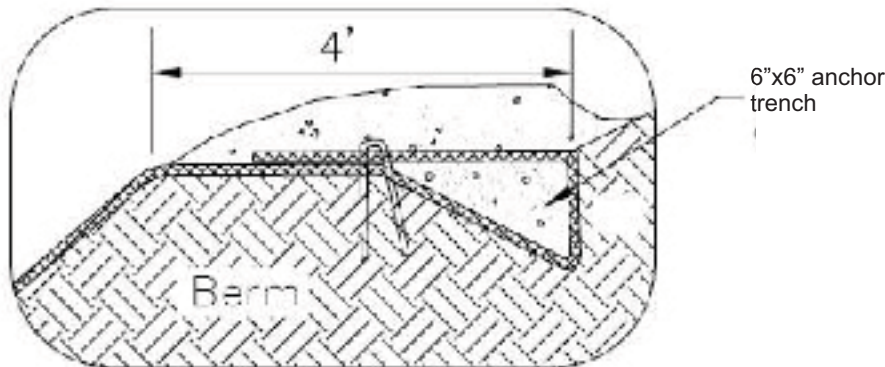
< \$1/sq yd for biodegradable material

The estimated costs to install geotextiles, seed, and fertilizer are approximately \$1/sq yd

### Alternatives

- Hydroseeding (p. 2-8)
- Mulching (p. 2-10)
- Vegetative Buffer Strip (p. 3-21)

### Notes:



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## Installation Tips

- grade the site prior to geotextile installation
- loosen the top 2-3 in of topsoil
- seed the area before applying the mat
- dig initial anchor trench to 6 in deep secure the lead edge with sod staples (no. 11 gauge or heavier, at least 6 inches long)
- it is necessary that the geotextile remain in direct contact with the ground
- anchor geotextiles to the ground every 2 ft with staples
- unroll the blanket down slope in the direction of runoff flow
- overlap the edges of adjacent parallel rolls by 2-3 in
- erosion stops may need to be employed depending on the type of geotextile used
- detailed installation tips can be found in the ODNR Rainwater and Land Development manual

## Maintenance

- inspect prior to forecasted rain events and daily during rain events
- remove sediment after each storm event
- replace torn fabric immediately
- if the geotextile fails, reseed the area as soon as possible

## Vendors

See Appendix pages F6-F8

## References

- Benik, S.R. B.N. Wilson, D.D. Biesboer, B. Hansen, and D. Stenlund. 2003. Evaluation of erosion control products using natural rainfall events. *Journal of Soil and Water Conservation* 58(2): 98-104.
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