

“Erosion control fabric, mats, netting and blankets” all refer to materials applied to the soil to keep it in place. Because erosion control fabrics only address surface erosion and most break down over time, we always recommend installing native vegetation, too. Only an extensive and varied root system will prevent both surface and subsurface erosion for the long term. These products can be used to prevent slope erosion, avert stream channel scouring, and stabilize shorelines until native vegetation establishes.

Open weave vs. continuous fiber products

Erosion fabrics come in two forms: woven netting with open spaces, and blankets of continuous fibers attached to mesh. The mesh material may be natural or synthetic, and some synthetic mesh may be photodegradable. Fibers may be stitched to one mesh layer or sandwiched between two. Continuous fiber blankets cover the soil surface completely, and are usually used on steeper sites or in drainage channels.

Natural vs. synthetic fibers

Natural fiber mats are made from coir (coconut husks), jute (fibers from the plant genus *Chorchorus*), straw or excelsior (fine wood fibers, usually aspen) or a combination of these products. We don't recommend excelsior because the fibers may come from intact forests. Straw decomposes the quickest, lasting only one season, and works best for less steep slopes and lower flows. Coir lasts longer than jute. Manufacturers can tell you the functional life of particular products. Synthetics are unnecessary as long as natural fibers are available. Synthetic geotextiles are more frequently used as part of a permanent stabilization structure, such as soil lifts. Synthetic weed barriers often require removal, which can disrupt native plant establishment.

Installation considerations

Proper installation is critical to success. In order to work, erosion fabrics must have continuous contact with the soil; fabric stretched over voids in the soil will not prevent underlying erosion. These products are especially difficult to install properly in areas with down wood or uneven or rocky topography. Mats are usually installed with galvanized landscaping staples (6” staples are sufficient for most applications). Biodegradable corn-based or wood stakes may also be used. The top edge of the mat should be buried in a trench at the level top of the slope to ensure it will stay in place.

Maintenance and removal

During the first year after installation, mats should be inspected every 2–3 months for good mat-to-soil contact. Also inspect for signs of the mat inhibiting plant material at the base. Mats may also inhibit species that spread by runners. Once individuals are established, the mat can be cut away to allow more room for spread. If project goals are factored in when selecting a natural-fiber product, the mat should break down in situ, in the appropriate time frame, and removal will not be necessary.

Caveats and concerns

Wildlife managers have expressed concerns that mesh in continuous fiber fabrics may entangle wildlife. Mesh-caused injury and mortality to snakes has been documented. To reduce wildlife impacts, new mesh designs have been developed that allow the threads to move so the openings can expand. Even continuous fiber fabrics may not suppress aggressive weeds, and the mesh may hinder weed removal efforts. Erosion control fabrics do not prevent erosion from sub-surface forces, and may provide a false sense of security. Natural fiber mesh is more biodegradable than synthetic, but the cost is higher.