

Keeping Soil on Your Construction Site

Erosion Control Required

Worthington's storm water ordinance and watershed district rules require homebuilders to prevent water pollution by containing soil on construction sites. Most new home construction projects, and some larger landscaping projects, require that an erosion control plan be developed explaining how soil will be kept on site. A copy of the approved erosion control plan must be submitted before the City issues a building permit for the project.

Watershed district staff will help landowners and contractors choose Best Management Practices (BMPs) to protect the edges of a construction sites smaller than one acre. For help creating an erosion control plan, call the Okabena-Ocheda Watershed District at (507) 372-8228 or the Heron Lake Watershed District at (507) 376-9150 extension 111.

Best Management Practices

Following is information about BMPs commonly used in Worthington around the edges of construction sites. Installed right, and maintained until a project is complete, these BMPs keep soil from washing away into streets, ditches, storm water ponds, wetlands and lakes.

Grass Strips

Leaving a sod strip around the edges of a construction site is often easy, cheap and effective. Grass keeps the soil under it in place and removes silt as water flows through it. Grass strips as narrow as four feet wide work well on short and gentle slopes. Wider strips are needed on steeper and longer slopes.

Good communication with contractors, subcontractors, construction workers and suppliers is necessary to maintain grass strips. They are often rutted up by vehicle traffic or destroyed when spoil piles or construction materials are placed on them.



Silt Fences

Silt fences are temporary barriers of fabric supported by metal or wood posts. The woven fabric traps soil particles as water runs through it. Silt fence is installed around the perimeter of a construction site anywhere water and soil can leave it. Prefabricated fencing is relatively cheap and can be purchased through lumber yards and contractors.

Silt fences must be trenched into the ground at least six inches deep to keep water from cutting under it. In areas where a lot of water runs, the fence fabric may need to be reinforced with a wire mesh.

Silt fences need to be regularly inspected and maintained. Wind can tear the fence fabric from its posts, so it may need to be reattached regularly. Wind or heavy water flow may pull the bottom of the silt fence from its trench. When this happens, it should be reburied immediately.

Silt fence fabric may be temporarily removed from its posts and laid on the ground to allow vehicles to drive onto the site. It should be reattached immediately afterward. Silt fence can also help reduce soil rutting and mud tracking by forcing vehicles to use designated driveways.

Straw Bales

Straw bales make effective silt barriers when installed in a line around construction sites. Like silt fence fabric, straw bales trap soil and allow water to flow through them.

Straw bales must be trenched at least four inches into the ground to keep water from cutting under the barrier. Bales are fastened in place by metal poles or wood stakes. Where slopes are long or steep, bales should overlap by at least six inches on each end to keep soil from washing between them.

Straw bales usually hold together for the duration of the project. They are difficult to move for temporary vehicle access, since they usually fall apart when lifted from the ground.



Coconut Fiber Logs

Coconut fiber logs work in the same way as silt fence and straw bales: they remove sediment as water passes through them. The logs, usually six to eight inch in diameter, are installed with wood stakes around the site's edges.

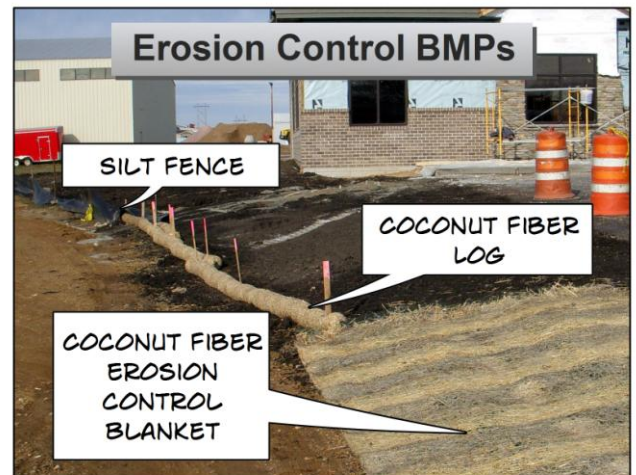
Coconut fiber logs work well on shallow slopes. Since they are shorter than other barriers, silt may quickly build up behind them, requiring regular maintenance. The logs are often installed as a series of steps to prevent gully erosion on steep slopes.

Coconut fiber logs are durable and sometimes can be reused on future construction sites.

Erosion Control Mats and Blankets

Erosion Control mats and blankets, made of woven jute or coconut fibers reinforced with a synthetic mesh, function similarly to grass strips. They cover loose soil keeping it in place. They slow the water flowing over them removing suspended soil particles.

Erosion control mats and blankets work best when installed on flatter slopes and smooth surfaces. They are anchored to the ground with large U-shaped staples. Mats are often installed on top of black soil and grass seed. The mat eventually biodegrades after the grass is established.



Monitoring and Maintenance Required

Watershed district rules require construction site owners and contractors to keep erosion control BMP's in place until the site is permanently stabilized. This usually occurs after buildings are complete, sidewalks and driveways are installed, landscaping is done and lawn grasses are growing.

Even well designed and installed erosion control practices will fail given enough time, unexpected weather conditions or unplanned construction activities. The BMP's should be inspected weekly and after each rainfall of a half inch or more. Needed maintenance or repairs should be completed within 24 hours of discovery.

To work well, silt must be removed from the uphill side of silt fences, straw bales and fiber logs when it reaches one third of the height of the barrier.