

Kentucky Erosion Prevention and Sediment Control Guide

A guide to preventing erosion and controlling sediment from construction activities in Kentucky

Protecting Soils with Seed

Seeding or covering bare soil with mulch, blankets, mats or other products as soon as possible is the cheapest and best way to prevent erosion. Grass seeding alone can reduce erosion by more than 90%. Sod, mulch, blankets, and other products can further increase protection.

Soil cover requirements

Bare soil in excavated or fill areas must be seeded, mulched or covered immediately after final grading work is completed. Stockpile topsoil and spread over site prior to seeding. Bare soil areas must be seeded, mulched, or covered after 14 days when temporary or final grade is established if no work is planned in that area during the following 7 days (i.e., 21 consecutive days of no work). This requirement can be extended if snow or freezing conditions prevent site work. Seed or cover soil stockpiles if they will not be used for more than 14 consecutive days.

Soil covering	Erosion reduction
Mulch (hay or straw)	
½ ton per acre	75%
1 ton per acre	87%
2 tons per acre	98%
Grass (seed or sod)	
40% cover	90%
60% cover	96%
90% cover	99%
Bushes and shrubs	
25% cover	60%
75% cover	72%
Trees	
25% cover	58%
75% cover	64%
Erosion control blankets	95-99%

Seed types and application

Prepare bare soil for planting by disking across slopes, scarifying or tilling if soil has been sealed or crusted over by rain. Seedbed must be dry with loose soil to a depth of 3 to 6 inches.

For slopes steeper than 4:1, walk bulldozer or other tracked vehicle up and down slopes before seeding to create tread-track depressions for catching and holding seed. Mulch slopes after seeding if possible. Cover seed with erosion control blankets or turf mats if slopes are 2:1 or greater.

Fertilize poor soils with 400-800 pounds per acre of 10-0-10 fertilizer, unless a soil test recommends a different application rate. Apply lime at 1 to 2 tons per acre if needed. Disk or harrow fertilizer and lime 2 to 4 inches into soil. Follow the contour (level path) with tractors and other equipment on all slopes if possible.

Check seed bag tags to make sure correct seed is used. Mix seed thoroughly prior to loading seeders. Use the following tables to calculate seed application rates, mixture portions and soil pH requirements, or use seed mixes approved for your site. Apply seed by hand, seeder, drill or hydroseed. Drilled seed should be ½ inch deep. Mulch right away if possible.

Apply more seed to channels, ditches, lawn, and landscaped areas. Apply less seed to areas that are flat or that will not be mowed very often. Water seeded areas during dry conditions

to ensure seed germination and early growth. Re-seed areas that do not show growth within 14 days after rain or watering.

[Kentucky Transportation Cabinet seed mixes](#)

Mix Type I: 90% Kentucky 31 Tall Fescue, 10% White Dutch Clover

Mix Type II: 90% Kentucky 31 Tall Fescue, 10% Partridge Pea

Mix Type III: 70% Kentucky 31 Tall Fescue, 30% Partridge Pea

Mix Type IV: 95% Turf Type Tall Fescue Blend, 5% White Dutch Clover

Protect bare areas during the cold season by sowing winter rye, winter wheat, or mulching. Sow permanent seed when weather permits.

Do not mow newly seeded bluegrass or red fescue until it is at least 4 inches high. Crownvetch should never be mowed. Kentucky 31 tall fescue can be mowed for appearance or only occasionally, according to site conditions and the owner's preference.

Seed mixes for wildflower and native plant plots are also available. They are more expensive, but are very hardy, require little mowing or watering, and add beauty to landscaped and other areas. Most mixes require mowing only once per year, to control tree and brush growth.

Other suggested seeding rates, soil conditions, and other information for various species and seed mixtures				
Seed species and mixtures	Seeding rate/acre	Per 1000 sq. ft.	Soil pH	Other information
Seed and seed mixtures for relatively flat or slightly sloping areas				
Perennial ryegrass	25 to 35 lbs.	1 lb.	5.6 to 7.0	Apply lime at 2 tons per acre if soil pH is below 5.5; use 400-800 lb. fertilizer (10-10-10) on poor soils. Use wildflower or "no mow" mixes to save on mowing and watering costs.
+ tall fescue	15 to 30 lbs.	1 lb.		
Tall fescue	40 to 50 lbs.	1 ½ lbs.	5.5 to 7.5	
+ ladino or white clover	1 to 2 lbs.	2 oz.		
Steep slopes, banks, cuts, and other low maintenance areas (not mowed)				
Smooth bromegrass	25 to 35 lbs.	1 lb.	5.5 to 7.5	Track steep slopes with dozer up and down hill before seeding. Mulch slopes after seeding with 2 to 3 tons of straw or 6 tons of wood chips per acre. Use tackifier on mulch, disk it in, or punch in with sheep-foot roller. Disk or sheep-foot on the contour (across slope, on the level). For extremely steep slopes, use erosion control blankets after seeding. Use 24" spacing for blanket staples.
+ red clover	10 to 20 lbs.	½ lb.		
Tall fescue	40 to 50 lbs.	1 lb.	5.5 to 7.5	
+ white or ladino clover	1 to 2 lbs.	2 oz.		
Orchard grass	20 to 30 lbs.	1 lb.	5.6 to 7.0	
+ red clover	10 to 20 lbs.	½ lb.		
+ ladino clover	1 to 2 lbs.	2 oz.		
Crown vetch	10 to 12 lbs.	¼ lb.	5.6 to 7.0	
+ tall fescue	20 to 30 lbs.	1 lb.		
Lawns and other high traffic or high maintenance areas (mowed)				
Bluegrass	105 to 140 lbs.	3 lbs.	5.5 to 7.0	Use wildflower mixes to save on mowing and watering costs. Do not establish grassed lawns near streams or wetlands – leave a 15- to 30-foot buffer of natural vegetation.
Perennial ryegrass (turf)	45 to 60 lbs.	2 lbs.	5.6 to 7.0	
+ bluegrass	70 to 90 lbs.	2 ½ lbs.		
Tall fescue (turf type)	130 to 170 lbs.	4 lbs.	5.6 to 7.5	
+ bluegrass	20 to 30 lbs.	1 lb.		

Ditches and other areas of concentrated water flows				
Perennial ryegrass	100 to 150 lbs.	3 lbs.	5.6 to 7.0	Seed ditches and channels thickly. Do not use fertilizer near ditch or channel bottom. Use erosion control blankets or turf reinforcement mats when channel bottom slopes exceed 3%. Silt check dams are needed when channel slopes exceed 5%. Or when channels begin downcutting (gullyng) on the bottom. Do not use silt fencing or hay bales as silt check dams in channels with slopes greater than 3%; use rock, brush, or commercial silt dikes instead.
+ white or ladino clover	1 to 2 lbs.	2 oz.	5.5 to 7.5	
Kentucky bluegrass	20 lbs.	¼ lb.		
+ smooth bromegrass	10 lbs.	¼ lb.	5.5 to 7.5	
+ switchgrass	3 lbs.	2 oz.		
+ timothy	4 lbs.	¼ lb.	5.5 to 7.5	
+ perennial ryegrass	10 lbs.	¼ lb.		
+ white or ladino clover	1 to 2 lbs.	2 oz.	5.5 to 7.5	
Tall fescue	100 to 150 lbs.	3 lbs.		
+ ladino or white clover	1 to 2 lbs.	2 oz.	5.5 to 7.5	
Tall fescue	100 to 150 lbs.	3 lbs.		
+ perennial ryegrass	15 to 20 lbs.	¼ lb.		
+ Kentucky bluegrass	15 to 20 lbs.	¼ lb.		

Sod application

Sod reduces the potential for erosion to near zero. To install, bring soil to final grade and clear of trash, wood, rock, and other debris. Apply topsoil, fertilizer, and lime if needed (per soil test recommendations, or 10-0-10 if no soil test is conducted).

Use sod within 36 hours of cutting. Lay sod in straight lines. Butt joints tightly, but do not overlap joints or stretch sod. Stagger joints in adjacent rows in a brickwork type pattern. Use torn or uneven pieces on the end of the row. Notch into existing grass.

Anchor sod with pins or stakes if placed on slopes greater than 3:1. Roll or tamp sod after installation and water immediately. Soak to a depth of 4 to 6 inches. Replace sod that grows poorly. Do not cut or lay sod in extremely wet or cold weather. Do not mow regularly until sod is well established.



Erosion and sediment loss is virtually eliminated on seeded areas (left side). Rills and small gullies form quickly on unseeded slopes (right).



Poor seed establishment on slope. Use erosion control blankets or turf reinforcement mats when slopes are steep (greater than 4:1) and soil quality is poor. Terracing or benching steep slopes also helps.



Good mix of sod, seed, and mulch at site of new community center. Note that inlet should be protected by installing a rock or sandbag berm to pond water before it flows into the inlet.



Poor management of bare soil areas on residential construction site. Temporary or permanent seed or mulch must be applied as soon as final grade is achieved.



Installing sod immediately after grading work is complete can reduce erosion and sediment loss to near zero.

Resources

[University of Kentucky Taking Soil Test Samples](#)

[University of Kentucky YouTube Video on Soil Sampling](#)

[Ernst Seeds - Planting to Control Erosion and Protect Ecosystems](#)

[EPA Soil Roughening](#)

[EPA Sodding](#)

[EPA Permanent Seeding](#)