

Soil Retention Coverings

This document provides guidance for design staff in specifying rolled erosion control products based on roadside ditch bottom gradient slope and other site specific considerations.

Rolled erosion control products are classified into the following two main categories:

1. Soil Retention Blanket (SRB)
2. Turf Reinforced Mats (TRM)

Ditch Gradient Slope Application Table

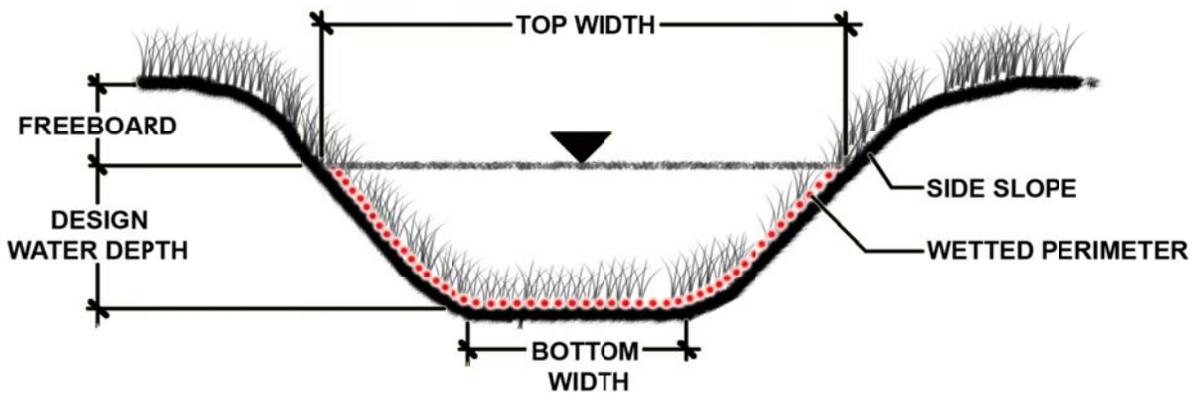
	Product Class	Tensile Strength MD ASTM D 6818	Maximum Permissible Shear Stress ¹ (Unvegetated SRB, Vegetated TRM) ASTM D 6460	Ditch Gradient Slope %
SRB	1 [^]	100 lbs/ft	2.0 lbs/sf	>0-2%
	2 [^]	125 lbs/ft	2.25 lbs/sf	
TRM	1 [*]	125 lbs/ft	6.0 lbs/sf	>2-3%
	2 [*]	150 lbs/ft	8.0 lbs/sf	>3-4%
	3 [*]	175 lbs/ft	10.0 lbs/sf	>4-5%
		Soil loaded embedded Riprap	Contact Region Hydraulic Engineer	>5%

[^]SRB shall be approved photodegradable or biodegradable blanket.

^{*}TRM Class (xx) shall be soil-loaded with SRB Class 1 or Class 2 (70% straw-30% coconut, excelsior or 100% coconut fiber) installed as final cover.

Roadside Ditch Wetted Perimeter:

Install soil retention coverings over the entire designed wetted perimeter of the ditch (see below).



Notes:

1. If more than one type of blanket is included in the project, the locations for each type shall be shown on the plans.
2. Biodegradable SRB is preferred in environmentally sensitive areas such as those with small animals and snakes, wetlands and streams, and other areas as directed by the Local Agencies, US Army Corps of Engineers (COE), US Forest Service, US Fish and Wildlife and Colorado Division of Parks & Wildlife.
3. All slopes exceeding 3:1 grade shall receive SRB. Slopes steeper than 2:1 with erosive soil (sand) and receiving sheet flow runoff from roadway surface consider using a TRM.
4. For sites that rock subgrade does not allow adequate trenching as shown on standard M-208 details alternative soil retention covers should be considered.
5. Use grade stabilization on top of blankets to shorten the slope length and spread runoff as sheet flow.
6. Consider using TRM in transition areas before and after hard armor (soil loaded embedded riprap).
7. For complicated specific site conditions consult with the Region Hydraulic Engineer or Region/ HQ Landscape Architect for input on which type of blanket to specify in the plans.