



Chagrin River Watershed Partners, Inc.

P.O. Box 229 Willoughby, Ohio 44096-0229 Phone: 440.975.3870 www.crwp.org

Roadside Ditch Stabilization Best Management Practice

Roadway departments challenged by the need to control flooding and provide for motorist safety are often confronted with how to best stabilize exposed soils in a cost effective manner within roadside ditches following dredging maintenance. Tackifiers are used to enhance erosion control by binding soil particles, especially clays, in place, preventing detachment of soil particles by rain splash impact and high flow velocities. In addition, tackifier materials act as a water treatment additive or flocculant to remove suspended particles from stormwater runoff, decreasing turbidity and improving water quality. Advanced tackifiers such as guar gum or polysaccharide based tackifiers also stimulate growth of vegetation expediting stabilization.

Tackifiers

For Hydro Seed & Mulch Slurry Application

- ◆ Tackifiers glue and bind seed, additives and hydro mulch materials to bare soil surfaces
- ◆ Tackifiers create intimate seed - soil contact for enhanced seed germination
- ◆ Tackifiers condition soil to improve porosity and infiltration of water to root zone promoting seed growth
- ◆ Tackifiers assist with dust control under drought conditions



Application Tip: Agitation is essential to mixing the product properly. Sprinkle powder form tackifiers into tank slowly and allow individual grains to absorb water to prevent clogging of ejectors and nozzle.

PAMs (Polyacrylamides)	Guar	Guar/PAM Blends
<ul style="list-style-type: none"> ● PAM products are made of synthetic co-polymer poly-acrylamides ● Use for slopes 3:1 or less ● Recommendation of 5 lbs./acre for normal roadside ditch conditions ● Typical longevity 6-12 months ● Works best with mechanically agitated hydro-seeder slurries 	<ul style="list-style-type: none"> ● Guar is an organic plant based thickening and binding agent ● Use on any slope ● Recommendation of 30 lbs./acre for normal roadside ditch conditions ● Typical longevity 3-6 months ● Works best with mechanically agitated hydro-seeder slurries 	<ul style="list-style-type: none"> ● Guar/PAM blends are referred to as Bonded Fiber Matrixes (BFMs) which combine guar and synthetic poly-acrylamide to create a stronger tackifier additive ● Use for slopes 2:1 or greater ● For use in high flow velocity areas ● General recommendation of 30 lbs./acre for normal roadside ditch conditions ● Typical longevity 12 months

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Tackifier Advantages

- ◆ Provides rapid binding of soil particles to prevent erosion
- ◆ Glues seed, additives and mulch material to soil surface promoting effective germination
- ◆ Promotes flocculation (reduced settling time) of soil particles, particularly clay particles
- ◆ Soil particle binding creates larger pore spaces within the soil for enhanced water infiltration
- ◆ May prevent costly repair and reshaping of rilling or failing slopes
- ◆ Convenient and easy to apply within hydro seeder slurry when appropriately mixed

✓ PAM co-polymer formulation must be anionic. Cationic PAM shall not be used in any application due to known aquatic organism toxicity. Read manufacturer's label carefully prior to application.



November 2011 - Before BMP Treatment



March 2012 - After BMP Treatment

Roadside Ditch Stabilization Demonstration Site Product Application Costs

Bass Lake Road Demonstration Site - Munson Township, Geauga County

The Bass Lake Road ditch maintenance site included a 700 linear foot section of excavated ditch by a Gradall smooth bucket with an average excavation width of 10 feet totaling 7,000 square feet of disturbed treatment area. Land Tack Q Plus was mixed with wood fiber mulch and a water retention polymer additive and hydraulically applied with a mechanically agitated hydro seeder.

Tackifier Additive

Land Tack Q Plus - Application Rate: 30 pounds per acre recommended

Product Cost: \$3.88 per pound, \$0.002 per square foot of treatment

BMP material investment to treat 7,000 square feet: \$18.66

Stabilization Performance

Applied in November 2011, Land Tack Q Plus tackifier provided soil binding properties to maintain wood fiber mulch cover and seed contact with the soil over 5 months of non-germinating winter temperatures before germination became fully established in May 2012.

For more details on project demonstration sites and results go to:
http://www.crwpp.org/Projects/roadside_ditch_sediment_control.htm