
Greenville County Technical Specification for:
EC-08 DUST CONTROL

1.0 Dust Control

1.1 Description

Wind erosion can occur when the surface soil is loose and dry, vegetation is sparse or absent, the wind is sufficiently strong, and when construction traffic disturbs the soil. Wind erodes soils and transports the sediment off site in the form of fugitive dust, where it may be washed into receiving water bodies by the next rainfall event.

Fugitive dust is a nuisance for neighbors. It settles on automobiles, structures and windows and finds its way into homes. It also can make breathing difficult for those with respiratory problems and becomes a safety problem when it blinds motorists, equipment operators and laborers.

Dust control methods should be utilized whenever there are offsite impacts, especially during periods of drought, and should be implemented until final stabilization is reached.

1.2 Design

There are many methods to control dust on construction sites. These methods include:

Phasing the Project - The smaller the amount of soil that is exposed at one time, the smaller the potential for dust generation. Phasing a project and utilizing temporary stabilization practices can significantly reduce dust emissions.

Vegetative Cover - For disturbed areas not subject to traffic, vegetation provides the most practical method of dust control.

Mulch - Offers a fast, effective means of controlling dust.

Sprinkling Water – Effective for dust control on haul roads and other traffic routes.

Spray-on-Adhesive - Latex emulsions, or resin in water can be sprayed onto mineral soils to prevent their blowing away and reduce dust caused by traffic.

Calcium Chloride - May be applied by mechanical spreaders as loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage.

Barriers - Broad, wind, or sediment fences can control air currents and blowing soil. These fences prevent erosion by obstructing the wind near the ground stopping the soil from blowing offsite. Barriers are not a substitute for permanent stabilization. Perennial grass and strands of existing trees may also serve as wind barriers.

Recommended dust control measures include the following guidelines while following all applicable laws and regulations.

1.3 Components

1.3.1 Mulch

Straw mulch can be used as dust control, but it must be anchored to the soil immediately after spreading to prevent it from blowing away. The following types of binders may be used to keep straw mulch in place:

1.3.2 Asphalt

Any type of liquid or emulsified asphalt thin enough to be blown from spray equipment is satisfactory. Recommended liquid asphalt for use are rapid curing liquids (RC-70, RC-250, RC-800)*, medium curing liquids (MC-250, MC-800)*. Apply liquid asphalt at a rate of 300 to 480 gallons per acre after straw mulch has been applied.

Recommended asphalt emulsions are (SS-1, CSS-1, CMS-2, MS-2, RS-1, RS-2, CRS-1, CRS-2)*. Asphalt emulsions may either be applied with straw or after the straw has been applied. Asphalt emulsions should be applied at a rate of 150 gallons per acre when applied with the straw. Asphalt emulsions should be applied at a rate of 300 gallons per acre when sprayed on top of the straw mulch. The emulsions should be kept at a temperature between 75°F and 160°F while it is being applied. Add additional dust control or re-spray areas as necessary to keep dust to a minimum.

*A11 designations are from the Asphalt Institute Specifications.

1.3.3 Synthetic Binders

Chemical binders may be used as recommended by the manufacturer to anchor straw mulch. These synthetic binders are recommended in residential areas where asphalt may be a potential problem. Add additional dust control or re-spray areas as necessary to keep dust to a minimum.

1.3.4 Sprinkling Water

Sprinkle the site or haul roads with a water truck until the surface is wet enough to prevent dust. Do not over-water, creating an erosion problem. Haul roads that are treated with water may need a temporary construction entrance to prevent the deposit of mud onto streets. Add additional dust control or re-spray areas as necessary to keep dust to a minimum.

1.3.5 Spray-On Adhesive

Latex emulsions, or resin in water can be sprayed onto mineral soils to prevent their blowing away and reduce dust caused by traffic. These adhesives are not effective on non mineral soils or muck soils. Construction traffic should not take place on areas treated with spray on adhesives. Typical spray on adhesives applications are shown in the following Table . Add additional dust control or respray areas as necessary to keep dust to a minimum.

Table 1: Spray-On Adhesive Specifications

Adhesive	Water Dilution	Type of Spray Nozzle	Application Rate (Gallons/acre)
Anionic Asphalt Emulsion	7:1	Coarse Spray	1200
Latex Emulsion	12.5:1	Fine Spray	235
Resin-in-Water Emulsion	4:1	Fine Spray	300

1.3.6 Calcium Chloride

May be applied by mechanical spreaders as loose, dry granules or flakes at a rate that keeps the surface moist but not so high as to cause water pollution or plant damage. Add additional dust control or respray areas as necessary to keep dust to a minimum.

1.4 Inspection and Maintenance

Add additional dust control or re-spray area as necessary to keep dust to a minimum.