NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

DUST CONTROL ON UNPAVED ROADS AND SURFACES

(Sq. Ft.)
Code 373

DEFINITION

Controlling direct particulate matter emissions produced by vehicle and machinery traffic or wind action from unpaved roads and other surfaces by applying a palliative on the surface.

PURPOSES

This practice may be applied as part of a conservation management system to control dust from unpaved roads and other surfaces which is generated by vehicle or machinery traffic, and/or wind.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to any non-vegetated, unpaved surface where vehicle movement or wind action would normally occur, such as an unpaved road, traffic area, parking lot, staging or assembly area, equipment storage lot, runway, or loading/unloading area. It does not apply to paved surfaces, vegetated areas, rangeland or cropland, or to surfaces that are normally subject to animal activity, such as pens and corrals.

CRITERIA

General Criteria Applicable To All Purposes

Laws and regulations. Apply the practice by following all label directives in accordance with all Federal, state, and local laws, rules, and regulations

Evaluate and avoid or minimize impact to cultural resources, wetlands and Federal and state protected species to the extent practicable during planning, design and implementation of this conservation practice in accordance with established National and Florida policy, General Manual (GM) Title 420-Part 401; Title 450-Part 401, Title 190-Parts 410.22 and 410.26, National Planning Procedures Handbook (NPPH) Florida Supplements to Parts 600.1 and 600.6, National Cultural Resources Procedures Handbook (NCRPH), National Food Security Act Manual (NFSAM), and the National Environmental Compliance Handbook (NECH).

Specify the palliative (dust control product) to be one of the following:

- Water
- Water absorbing suppressant (hygroscopic palliative)
- Adhesive
- Petroleum emulsion
- Polymer emulsion
- Clay Additive
- Bituminous (petroleum-based road oil)

Do not use calcium chloride and magnesium chloride in locations where the daily summertime relative humidity averages below 30%. For more details, see the specification.

Grade and/or smooth the surfaces to be treated as needed and prescribed by the product

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

guidance before the dust control product is applied.

Treat the area to achieve a minimum of 50% dust control at time of application of material. The amount of dust control achieved will be determined by standardized emission reduction factors for the various materials.

Re-treat the area if it is heavily disturbed by grading or other major disturbance after prior treatment.

If continued effectiveness of the product is warranted after natural weathering has reduced its effectiveness to the point where airborne particulate matter from the surface is visible, re-apply the palliative control product.

Where dust control for more than 12 hours is needed, do not use water as a dust control product unless it is reapplied.

In locations where runoff from a treated surface could immediately enter into fish spawning waters, do not use lignosulfonate as a dust control product.

Where drainage from the treated surface may directly impact a nearby water body, do not use bituminous palliatives.

When determining an appropriate product to use, do not select products that have a “poor” rating for your specific location and situation.

CONSIDERATIONS

Consider additional activities like speed control or vehicle exclusion on unpaved roads to help control dust.

When there is concern over possible runoff of sediments from the unpaved area to a water body, consider using additional practices or activities like buffers strips on the side of the road or unpaved area to minimize runoff of the palliative to the water body.

Consider using a sieve analysis of the upper layer of the unpaved surface to determine percent fines less than 75 µm. Select a product that is appropriate based on this analysis.

In regions where snow covers the unpaved area over winter, consider applying the dust control product after the spring melt to minimize the loss of product effectiveness over winter.

Where practical, other dust suppression techniques, such as the use of Florida conservation practice standards Mulching, Code 484, the establishment of vegetation with Critical Area Planting, Code 342, or the installation of windbreaks with Windbreak/Shelterbelt Establishment, Code 380 may be used if additional dust control is needed.

PLANS AND SPECIFICATIONS

Prepare specifications for installation of Dust Control on Unpaved Roads and Surfaces for each site or planning unit according to the criteria. Record the specifications by using State-developed specification sheets, job sheets, practice requirement sheets, narrative statements in conservation plans, or other acceptable documents.

Prepare the plans and specifications to include the following minimum information:

1. Location and extent of area where practice will be applied.
2. Identification and description of the type and amount of material being used for dust control, and method of application.
3. Specifications on grading requirements.
4. Plans for any re-applications of materials.
5. Identification of any adjacent sensitive areas (e.g. fish spawning areas and nearby water bodies).
6. List of criteria to follow during application.
7. List of items to consider during application.
8. Identification of any additional practices used in conjunction with the palliative.

OPERATION AND MAINTENANCE

Develop an operation and maintenance (O&M) plan that is consistent with the purposes of this practice, its intended life, safety requirements, and the criteria used for its design. Include in the O&M plan the following requirements but not limited to:

- Re-application of dust control materials, as needed, and including any additional grading requirements.
- Maintenance of any mitigating practices.
- Documentation requirements for emissions reduction.

REFERENCES

Bolander, P. and A. Yamada, 1999. "Dust Palliative Selection and Application Guide" Project Report 9977-1207-SDTDC San Dimas Technology Development Center, U.S. Dept. of Agriculture, Forest Service, San Dimas, CA.

Florida NRCS Conservation Practice Standards
- Critical Area Planting, Code 342
- Mulching, Code 486
- Windbreak/Shelterbelt Establishment, Code 380

General Manual
- Title 420-Part 401
- Title 450-Part401
- Title 190-Parts410.22 and 410.26

National Cultural Resources Procedures Handbook

National Environmental Compliance Handbook

National Food Security Act Manual

National Planning Procedures Handbook

San Joaquin Valley Air Pollution Control District, 2002. Products available for controlling dust.