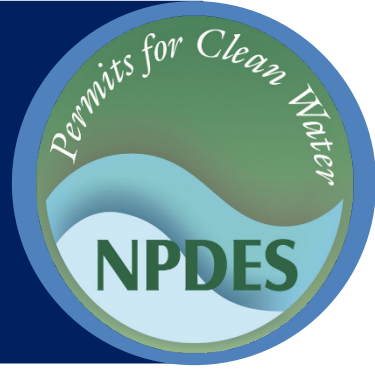




Stormwater Best Management Practice

Wind Fences and Sand Fences



Minimum Measure: Construction Site Stormwater Runoff Control
Subcategory: Erosion Control

Description

Wind fences (also called sand fences) are barriers made of permeable fabric or small, evenly spaced wooden slats. Construction staff erect wind fences to reduce wind velocity and to trap blowing sand. Wind fences can also serve as perimeter controls around open construction sites to keep the wind from blowing sediments off-site. In doing so, they prevent off-site damage to roads, streams and adjacent properties. The spaces between the fence slats allow wind to pass through but reduce its speed, causing sediment to deposit along the fence.

Applicability

Wind fences are appropriate for areas with loose sands that high winds can transport off-site. They can be helpful for construction sites with large areas of cleared land or in arid regions where blowing sand is problematic. Shorefront development sites also benefit because wind fences help to form frontal dunes. Wind fences are not an appropriate control measure for fine sediment or dust, though they can be more effective in combination with dust control practices. For control of fine sediment, see [Dust Control](#).

Siting and Design Considerations

Wind fences are only effective when construction staff place them perpendicular or near perpendicular to the prevailing wind. They should be at least 3 to 4 feet high with an effective minimum porosity of 50 percent. For wooden slat fences, this means the gap between slats should equal the slat width. For prefabricated commercial products, such as woven polyethylene, the manufacturer should specify the porosity and the material should be ultraviolet-resistant. Construction staff should also install woven fences with a gap of 1 to 2 feet between the fabric bottom and ground surface to prevent breakage during high winds. Erecting multiple rows of fences, spaced 20 to 40 feet apart, increases their overall sediment-trapping efficiency (DOWL, 2015; GSWCC, 2016; NCDEQ, 2013).



A wind fence that has trapped sand along a beach dune.

To protect stockpiles, construction staff should place wind fencing upwind of the stockpiles at a distance of approximately three times the height of the stockpile (DOWL, 2015).

In coastal dune areas, construction staff should place wind fences away from the mean high tide line. Using native vegetation can enhance fence integrity (GSWCC, 2016).

Limitations

Wind fences do not control sediment carried in stormwater discharges and are not effective for dust control. Where erosion control and dust control are necessary, install wind fences with other erosion and sediment control practices (see [Dust Control](#), [Brush Barrier](#), [Chemical Stabilization](#), [Geotextiles](#), [Land Grading](#), [Preserving Natural or Existing Vegetation](#), [Riprap](#), etc.).

Maintenance Considerations

Periodically inspect wind fences to ensure no tears or breaks exist. Repair any broken fences immediately.

Periodically clean sand and sediment from the fence area to prevent stormwater from transporting them.

Effectiveness

The effectiveness of wind fences depends on several factors, including the soil type, local climate conditions, wind condition, and presence of other soil stabilization or [dust control](#) practices. Wind fences tend to be more effective for controlling heavier sands that stormwater

transports near the ground surface. Wind fences do not effectively control finer sediment that becomes easily airborne (i.e., dust). Wind fences are most effective for slowing dune migration in coastal areas.

Cost Considerations

Wind fences are relatively inexpensive to purchase, install and maintain because they are small, easy to transport, lightweight and made of low-cost materials.

Additional Information

Additional information on related practices and the Phase II MS4 program can be found at [EPA's National Menu of Best Management Practices \(BMPs\) for Stormwater website](#)

References

DOWL. (2015). Erosion and sediment control best management practices manual. Montana Department of Transportation.

Georgia Soil and Water Conservation Commission (GSWCC). (2016). *Manual for erosion and sediment control in Georgia*.

North Carolina Department of Environmental Quality (NCDEQ). (2013). Chapter 6: Practices and specifications. In *Erosion and sediment control planning and design manual* (pp. 6.1–6.87.2).

Disclaimer

This fact sheet is intended to be used for informational purposes only. These examples and references are not intended to be comprehensive and do not preclude the use of other technically sound practices. State or local requirements may apply.