Wind Fences and Sand Fences

Sand fences are used to trap blowing sand and to reduce offsite movement of sand particles

Description
Sand fences are barriers made of small, evenly spaced wooden slats or fabric. They are erected to reduce wind velocity and to trap blowing sand. Sand fences can be used as perimeter controls around open construction sites to keep sediments from being blown offsite by the wind. They also prevent offsite damage to roads, streams, and adjacent properties. The spaces between the fence slats allow wind and sediment to pass through but reduce the wind's speed, causing sediment to deposit along the fence.

Applicability
Wind fences are appropriate for areas with loose, fine-textured soils that can be transported offsite by high winds. They are especially advantageous for construction sites with large areas of cleared land or in arid regions where blowing sand and dust can be problematic. Shorefront development sites also benefit because wind fences help to form frontal dunes.

Siting and Design Considerations
Sediment is trapped and wind slowed effectively only when the fence is erected perpendicular to the prevailing wind. Although wind fences have been shown effective up to 22.5 degrees from perpendicular, erect them as close to perpendicular to the wind movement as possible (Smolen et al., 1988). Multiple fences can be erected to increase sediment-trapping efficiency. Linear rows of fence 2 to 4 feet high and spaced 20 to 40 feet apart can be installed. On shoreline beaches, install wind fences well away from the incoming tide.

Limitations
A wind fence does not control sediment carried in stormwater runoff. Install wind fences with other sediment and erosion control measures that capture sediment from runoff.

Maintenance Considerations
Wind fences require periodic inspection to ensure that there are no breaks or gaps. Make repairs immediately. Clean sand and sediment from the fence area periodically to keep them from being transported by runoff.

Effectiveness
Wind fences are very effective for promoting dune formation along shoreline areas. They are not adequate as a primary dust-control or sediment-trapping measure for construction site perimeters. They should be used only with other erosion and sediment control practices.

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

References
Smolen, M.D., D.W. Miller, L.C. Wyatt, J. Lichthardt, and A.L. Lanier. 1988. *Erosion and Sediment Control Planning and Design Manual*. North Carolina Sedimentation Control Commission; North Carolina Department of Environment, Health, and Natural Resources; and Division of Land Resources Land Quality Section, Raleigh, NC.