

Construction Entrances



Stabilized construction entrances allow dirt to be removed from tire treads and collected as trucks leave construction sites

Description

The purpose of stabilizing entrances to a construction site is to minimize the amount of sediment leaving the area as mud and sediment attached to vehicles. Installing a pad of gravel over filter cloth where construction traffic leaves a site can help stabilize a construction entrance. As a vehicle drives over the pad, the pad removes mud and sediment from the wheels and reduces soil transport off the site. The filter cloth separates the gravel from the soil below, keeping the gravel from being ground into the soil. The fabric also reduces the amount of rutting caused by vehicle tires. It spreads the vehicle's weight over a soil area larger than the tire width.

In addition to using a gravel pad, a vehicle washing station can be established at the site entrance. Using wash stations routinely can remove a lot of sediment from vehicles before they leave the site. Diverting runoff from vehicle washing stations into a sediment trap helps to make sure the sediment from vehicles stays onsite and is handled properly.

Applicability

Typically, stabilized construction entrances are installed where construction traffic leaves or enters an existing paved road. But site entrance stabilization should be extended to any roadway or entrance where vehicles enter or leave the site. From a public relations point of view, stabilizing construction site entrances can be worth the effort. If the site entrance is the most noticeable part of a construction site, stabilizing the entrance can improve both the appearance and the public perception of the construction project.

Siting and Design Considerations

Stabilize all entrances to a site before construction and further site disturbance begin. Make sure the stabilized site entrances are long and wide enough to allow the largest construction vehicle that will enter the site to fit through with room to spare. If many vehicles are expected to use an entrance in any one day, make the site entrance wide enough for two vehicles to pass at the same time with room on either side of each vehicle. If a site entrance leads to a paved road, make the end of the entrance flared so that long vehicles do not leave the stabilized area when they turn onto or off the paved roadway. If a construction site entrance crosses a stream, swale, or other depression, provide a bridge or culvert to prevent erosion from unprotected banks. Make sure stone and gravel used to stabilize the construction site entrance are large enough so that they are not carried offsite by vehicles. Avoid sharp-edged stone to reduce the possibility of puncturing tires. Install stone or gravel at a depth of at least 6 inches for the entire length and width of the stabilized construction entrance.

Limitations

Although stabilizing a construction entrance reduces the amount of sediment leaving a site, some soil might still be deposited from vehicle tires onto paved surfaces. To further reduce the chance of these sediments polluting stormwater runoff, sweep the paved area adjacent to the stabilized site entrance. For sites that use wash stations, a reliable water source to wash vehicles before leaving the site might not be initially available. Water might have to be trucked to the site at additional cost.

Maintenance Considerations

Maintain stabilization of the site entrances until the rest of the construction site has been fully stabilized. You might need to add stone and gravel periodically to each stabilized construction site entrance to keep the entrance effective. Sweep up soil tracked offsite immediately for proper disposal. For sites with wash racks at each site entrance, construct sediment traps and maintain them for the life of the project. Periodically remove sediment from the traps to make sure they keep working.

Effectiveness

Stabilizing construction entrances to prevent sediment transport offsite is effective only if all the entrances to the site are stabilized and maintained. Stabilizing the site entrances might not be very effective unless a wash rack is installed and routinely used (Corish, 1995). This can be problematic for sites with multiple entrances and high vehicle traffic.

Cost Considerations

Without a wash rack, construction site entrance stabilization costs range from \$1,000 to \$4,000. On average, the initial construction cost is around \$2,000 per entrance. Including maintenance costs for a 2-year period, the average total annual cost is approximately \$1,500. If a wash rack is included in the construction site entrance stabilization, the initial construction costs range from \$1,000 to \$5,000, and the average initial cost is \$3,000 per entrance. The total cost, including maintenance for an estimated 2-year life span, is approximately \$2,200 per year (USEPA, 1993).

References

Corish, K. 1995. *Clearing and Grading Strategies for Urban Watersheds*. Metropolitan Washington Council of Governments, Washington, DC.

USEPA (U.S. Environmental Protection Agency). 1992. *Stormwater Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices*. EPA 832-R-92-005. U.S. Environmental Protection Agency, Office of Water, Washington, DC.

USEPA (U.S. Environmental Protection Agency). 1993. *Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters*. EPA 840-B-92-002. U.S. Environmental Protection Agency, Office of Water, Washington, DC