



## Description and Purpose

Temporary silt dikes are pre-manufactured devices that are typically specified and installed for drainage and sediment control on the perimeter of disturbed sites or stockpiles and as check dams within channels. Manufactured products include flexible and rigid silt dikes. Both types of temporary silt dikes can be reused. Flexible temporary silt dikes typically consist of a triangular foam or recycled rubber core covered in geotextile fabric. Rigid temporary silt dikes typically consist of an outer jacket made of a rigid High Density Polyethylene (HDPE) matrix and contain an integrated HDPE or polypropylene geotextile filter or a tubular assembly of overlapping layers of porous synthetic materials (frequently called synthetic sediment control rolls). Temporary silt dikes come in a variety of profiles including triangular, round, rectangular, L-shaped, I-shaped, and T-shaped.

## Suitable Applications

Temporary silt dikes are generally used in areas as a substitute for fiber rolls and silt fences in sediment control applications to slow down runoff water, divert drainage or contain fines and sediment. Temporary silt dikes are a linear control and application suitability varies based on the specific product type. They may be suitable for:

- On paved surfaces for perimeter protection.

## Categories

<b>EC</b>	Erosion Control	<input checked="" type="checkbox"/>
<b>SE</b>	Sediment Control	<input checked="" type="checkbox"/>
<b>TC</b>	Tracking Control	
<b>WE</b>	Wind Erosion Control	
<b>NS</b>	Non-Stormwater Management Control	
<b>WM</b>	Waste Management and Materials Pollution Control	<input checked="" type="checkbox"/>

## Legend:

- Primary Category**
- Secondary Category**

## Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	<input checked="" type="checkbox"/>
Metals	
Bacteria	
Oil and Grease	
Organics	

## Potential Alternatives

- SE-1 Silt Fence
- SE-5 Fiber Roll
- SE-6 Gravel Bag Berm
- SE-8 Sandbag Barrier



- As check structures in channels.
- Along the perimeter of disturbed sites in lieu of silt fence.
- At operational storm drains as a form of inlet protection.
- Around temporary stockpiles or material/equipment storage areas.
- At the interface between graveled driveways and pavement.
- Along the toe of exposed and erodible slopes.

## Limitations

- Temporary silt dikes require additional measures to adhere to asphalt in cold and windy climates, as glue may not adhere adequately to the pavement.
- Rigid temporary silt dikes are not effective unless trenched-in and staked.
- Runoff will pond upstream of the barrier, possibly causing flooding or bypass if sufficient space does not exist to accommodate ponding.
- Temporary silt dikes may require frequent maintenance especially when used near vehicle traffic or to detain concentrated flows (e.g. check dams or inlet protection).
- When used to detain concentrated flows, maintenance requirements increase.
- Temporary silt dikes are not biodegradable and should be removed after construction activities are complete and disturbed soil areas have been stabilized.
- Temporary silt dikes may not be suitable for application as linear slope controls (slope interruptions).
- Temporary silt dikes should not be used on slopes subject to creep, slumping, or landslide.

## Implementation

### *General*

When appropriately placed, temporary silt dikes intercept and slow sheet flow runoff, causing temporary ponding. The temporary ponding provides quiescent conditions allowing sediment to settle. The device is porous, which allows the ponded runoff to flow slowly through the silt dike, releasing the runoff as sheet flows. Generally, temporary silt dikes should be used in conjunction with temporary soil stabilization controls up-slope to provide an effective combination of erosion and sediment control.

### *Design and Layout*

- Temporary silt dikes used on soil should be trenched or attached to the ground per manufacturer specifications in a manner that precludes runoff or ponded water from flowing around or under the silt dike.
- Temporary silt dikes used on asphalt or concrete may be attached using a variety of methods, including nailing the dikes to the pavement, or using a high strength adhesive.

- Follow manufacturer specifications when installing temporary silt dikes.
- Allow sufficient space up slope from the silt dike to allow ponding, and to provide room for sediment storage.
- For installation near the toe of the slope, temporary silt dike should be set back three feet from the slope toe to facilitate cleaning. Where site conditions do not allow set back, the silt dike may be constructed on the toe of the slope. To prevent flows behind the barrier, sand or gravel bags can be placed perpendicular and between the silt dike and slope to serve as a barrier to parallel flow.
- Drainage area should not exceed 5 acres.
- Butt ends of temporary silt dike tightly. Overlaps should be sealed in accordance with the manufacturer's detail.
- Ends of runs should be sloped uphill to prevent concentrated end-around flows.
- For installations as check dams, see SE-4.

## ***Materials***

- Several manufactured products are available.

## **Costs**

- Flexible silt dike averages \$35-45 per 7 ft. section.
- Rigid silt dike averages \$1.80-\$7.00 per foot.

## **Inspection and Maintenance**

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Temporary silt dike exposed to sunlight will need to be replaced more frequently due to photo-degradation.
- Reshape or replace sections of damaged temporary silt dike as needed.
- Repair washouts or other damage as needed.
- Sediment that accumulates behind the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- Remove temporary silt dikes when no longer needed. Remove sediment accumulation and clean, re-grade, and stabilize the area. Removed sediment should be incorporated in the project or disposed of properly.

## References

City of Elko Construction Site Best Management Practices Handbook, December 2005

Construction Site Best Management Practices Handbook, June 2008 Update, Truckee Meadows Regional Stormwater Quality Management Program, June 2008

Complying with the Edwards Aquifer Rules Technical Guidance on Best Management Practices, Texas Commission on Environmental Quality, Revised July 2005, Addendum Sheet, January 26, 2011

Stormwater Management Manual for Western Washington Volume II, Construction Stormwater Pollution Prevention, Washington State Department of Ecology, February 2005