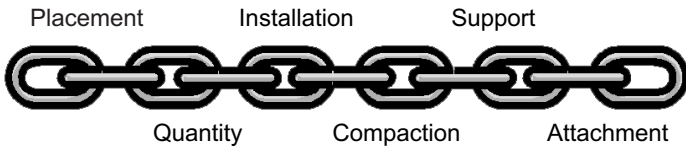


Silt Fence That Works

Effective silt fence works like a chain...



**Each link must work;
if one link fails,
the system fails**

**Silt fence is not a simple,
'anyone can do it' BMP.
Requires knowledge and
effort to achieve efficacy.**

On-site adjustment is mandatory

Actual site grades are often different than those shown on a SWPPP. Contractor must communicate with designer and operational manager to adjust for as built conditions.

Two most common problems

- Placement issues – won't pond water or insufficient quantity for the proposed control area
- Installation issues - inadequate backfill and/or compaction

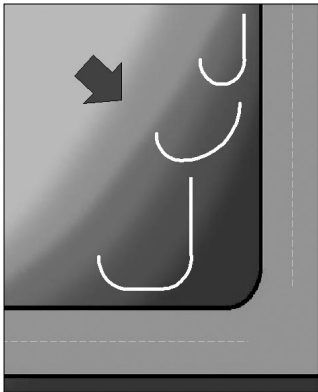
Every silt fence should create a storage area for ponding.

- Do not install if can not create storage.
- Do not install in a V-shaped or narrow channel. Use erosion control blankets.
- Do not install in a straight line where runoff can flow around an end.
- Install on the contour to control velocity



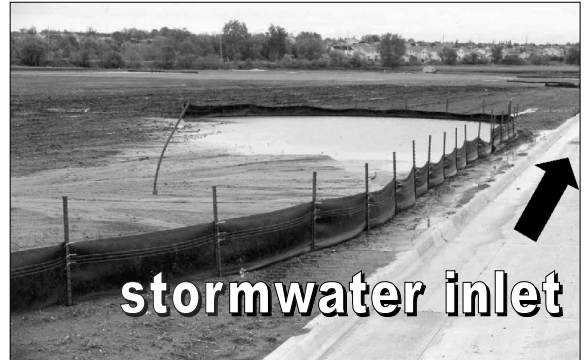
Properly installed silt fence detains water for sedimentation to occur

Silt Fence Placement



Designs called J-hooks insure water & sediment pond behind each silt fence.

Stop sediment before it reaches the pavement.



Install upstream of outlet



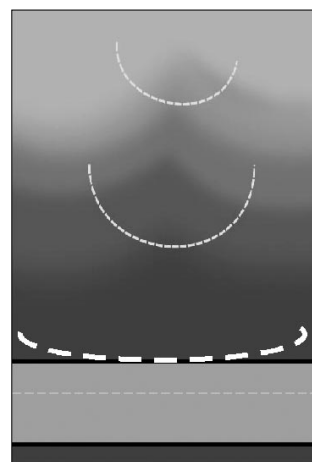
Do not install in continuous flow

Prevent overland water from eroding the slope face



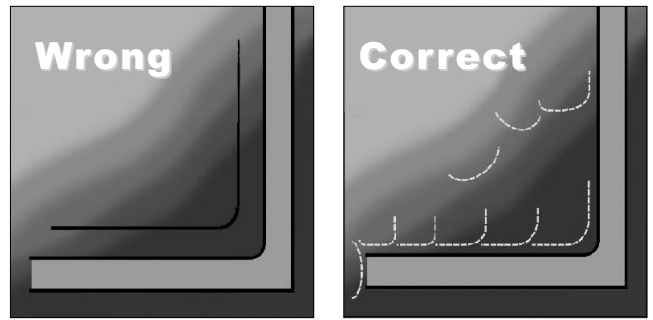
Leave room for sediment storage at toe of slope

Protect area intakes with larger silt fence structures, if possible



Large areas need additional runs installed in the interior to reduce the volume and velocity of runoff.

- 5000 sq. ft. is probably a manageable control area for a silt fence smile – about the size of a residential lot
- Maximum slope length above a silt fence – 100 linear feet



No runs longer than 200 ft. Separate area into multiple storage areas.

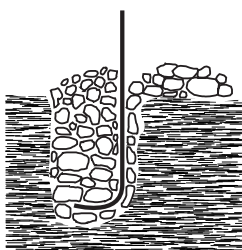
EPA co-sponsored research has shown compaction is the critical factor in silt fence effectiveness.

Poor compaction = washouts



Overfill and compact trench to at least 50% of the in situ soil

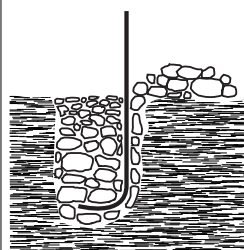
ASTM D-6462-03
Updated trenching specification 2003



Requires over-backfill of trench prior to mechanical compaction.

"The problem is 'where to get the additional backfill!'"

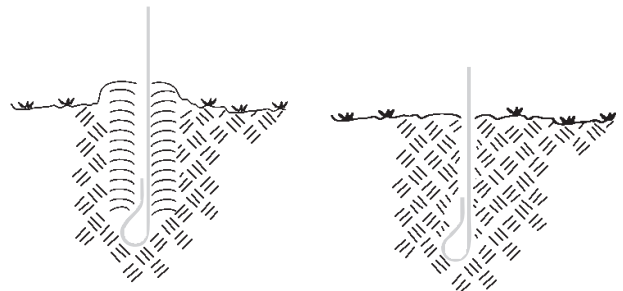
ASTM D-6462-03
Updated trenching specification 2003



Compacted backfill must be level with undisturbed soil.

Achieve consistent installation and compaction

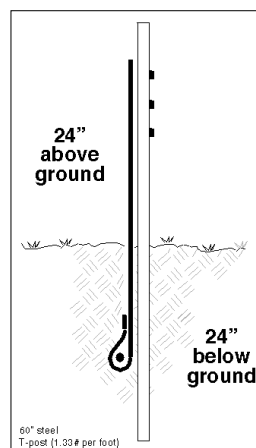
Static Slicing



During Insertion - Disrupted Soil

After Compaction - No Washouts

Proper installation



Support Post Spacing

Post should be spaced a maximum of 6 ft. apart and driven 24 inches into compacted ground.

Attachment

- Steel posts - 3 ties per post in the top 8 inches of the fence, each tie hung on a post nipple, and placed diagonally.
- For wood posts, several staples per post overlaid with a lath.

Maintenance

- Structural type – falling down
- Performance type
 - Blown out
 - At capacity
- Replace when full, do not remove sediment

Inspector Responsibilities

- Inspectors must know proper placement and installation concepts.
- Must not approve improper installations for payment.
- Is not concerned with budgeted quantities.

Tell-tale signs of effectiveness problems.

- Lack of sediment retention
- Lack of ponding after a rain even
- Solution: Inspector must look for a blowout and require replacement