

Compost-Filled Filter Socks

SEDIMENT CONTROL TECHNIQUE

Type 1 System		Sheet Flow	✓	Sandy Soils	✓
Type 2 System		Concentrated Flow	[1]	Clayey Soils	✓
Type 3 System	✓	Supplementary Trap		Dispersive Soils	

[1] Can be used as a sediment trap during minor de-watering operations (Photo 2).

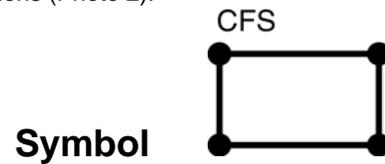


Photo supplied by the Integrated Group

Photo 1 – Compost-filled sock being used to filter sheet flow



Photo supplied by the Integrated Group

Photo 2 – Compost-filled sock being used during a de-watering activity

Key Principles

1. Primarily used to collect the coarser sediment particles, but significant filtration and pollutant adsorption can occur if the sock is not breached by the flow.
2. Filter socks primarily work by filtering particulate pollutants from water passing through the sock.
3. When used in areas of sheet flow, it is essential for the sock to be placed along the contour in order to maintain uniform flow conditions through the sock.

Design Information

Table 1 provides the recommended maximum spacing of filter sock placed along the contour on uniform slopes.

Table 1 – Maximum spacing down non-vegetated or newly seeded slopes

Maximum spacing	Conditions
3m	<ul style="list-style-type: none"> • Steep slopes (> 4H:1V). • Highly erosive soils on mild to steep slopes. • Sandy soils on mild to steep slopes.
5m	<ul style="list-style-type: none"> • Loamy soils on mild slopes (10:1 to 4:1). • Any soil not mulched, hydromulched or similar on low to mild slopes (< 4:1).
8m	<ul style="list-style-type: none"> • Erosion resistant soils on mild slopes (< 6:1). • Loamy soils on low gradient slopes (< 10:1).

The composted material must comply with the requirements of AS4454.

Minimum sock diameter of 200mm.

Filter socks must be trenched 50 to 100mm into the ground.

Maximum stake spacing of 1.2m or six (6) times the sock diameter (whichever is the lesser). A maximum stake spacing of 0.3m applies when used to form check dams.

When used in areas of sheet flow, filter socks must be placed along the contour to maintain uniform flow conditions passing through the sock.

Adjoining socks must be overlapped at least 450mm.

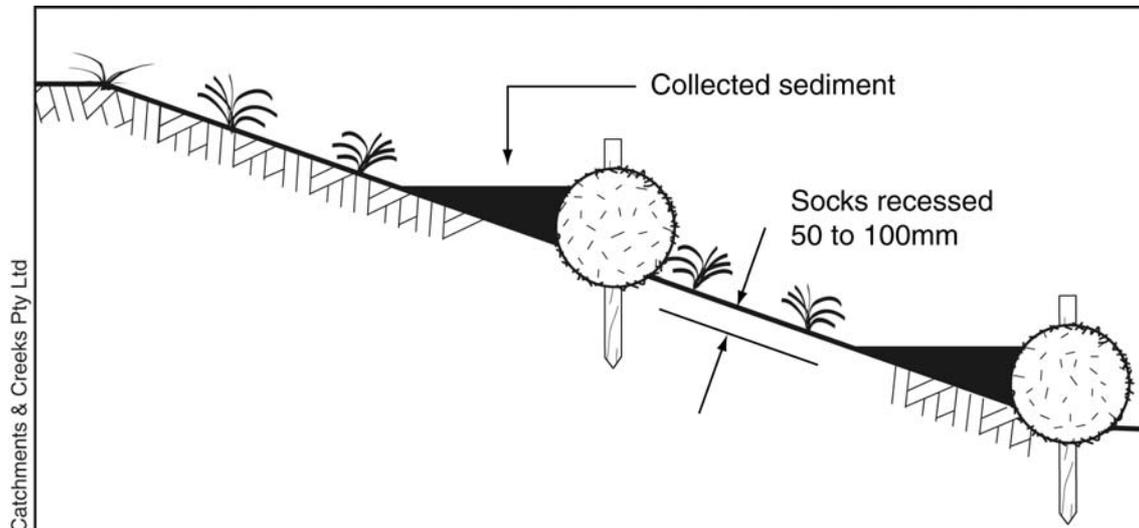


Figure 1 – Filter socks placed along the contour in areas of sheet flow

Description

Highly permeability synthetic tubing of varying lengths and diameters filled with a high quality composted material.

The synthetic tubing may be biodegradable or non-biodegradable depending on desired service life.

Purpose

Used as an alternative to *Fibre Rolls* or traditional sand or aggregate-filled filter socks.

Used to intercept runoff and help maintain sheet flow down a disturbed slope, thus reducing the risk of rill erosion.

Also used as a Type 3 sediment trap on mild-sloping earth slopes, and around stockpiles.

They may also be used to form a *Check Dam Sediment Trap* in minor drainage channels.

Limitations

Not suitable for use on earth slopes subject to slippage, slumping or creep.

Advantages

Compost-filled filter socks can remove fine suspended pollutants from low discharge, sheet flows.

Unlike a *Sediment Fence*, some socks can be left in-situ to become an integral part of the vegetated slope.

Compost products represent a sustainable recycling of domestic and commercial garden waste.

Light and easy to transport into difficult locations.

Disadvantages

Often are installed without adequate trenching.

Difficult to move when wet.

Can float away if not adequately staked.

Common Problems

Erosion behind filter socks if not placed along the contour.

Excessive flow under or along the filter socks.

Insufficient anchorage (pegging).

Special Requirements

Compost certification must comply with the requirements of AS4454.

Filter socks must be trenched 50 to 100mm into open soil.

Ensure both ends of the filter sock are adequately turned up the slope to prevent flow bypassing prior to water passing over the sock.

Location

Mild-sloping earth batters.

Long, newly seeded slopes where it is important to maintain sheet flow conditions.

Field inlets with small drainage catchments.

Site Inspection

Check for sufficient anchorage (pegging) along its full length.

Ensure the filter socks have been placed along the contour such that water will pond evenly along the length of each sock.

Check for damage to the filter socks and actual or potential wash-outs.

Materials

- Compost fill: comply with the requirements of AS4454.
- Fibre rolls: minimum 200mm diameter synthetic or biodegradable tubes.
- Stakes: minimum 20 by 20mm timber.

Installation

1. Refer to approved plans for location and installation details. If there are questions or problems with the location, dimensions or method of installation contact the engineer or responsible on-site officer for assistance.
2. When placed across non-vegetated or newly seeded slopes, the filter socks must be placed along the contour.
3. If placed on open or loose soil, ensure the filter socks are trenched 50 to 100mm into the ground.
4. Ensure the outer most ends of each filter sock or continuous row of filter socks are turned up the slope to allow water to adequately pond up-slope of the socks, and to minimise flow bypassing.

5. When placed across the invert of minor drains and table drains:

- (i) space the socks down the drain such that the crest of the downstream sock is level with the channel invert at the immediate upstream sock (if any);
- (ii) each sock must extend up the channel banks such that the crest of the sock at its lowest point is lower than ground level at either end of the sock.

6. Ensure the anchoring stakes are driven into the end of each sock and along the length of each sock at a spacing not exceeding 1.2m or six times the sock diameter (whichever is the lesser). A maximum stake spacing of 0.3m applies when used to form check dams.

7. Adjoining socks must be overlapped at least 450mm, not abutted.

Maintenance

1. Inspect all filter socks prior to forecast rain, daily during extended periods of rainfall, after significant runoff producing storms or otherwise at weekly intervals.
2. Repair or replace damaged filter socks.
3. Remove collected sediment and dispose of in a suitable manner that will not cause an erosion or pollution hazard.

Removal

1. All excessive sediment trapped by the filter socks must be removed from the drain or slope if such sediment is likely to be washed away by expected flows.
2. Dispose of collected sediment in a suitable manner that will not cause an erosion or pollution hazard.
3. All synthetic (plastic) mesh or other non readily biodegradable material must be removed from the site once the slope or drain is stabilised, or the socks have deteriorated to a point where they are no longer providing their intended drainage or sediment control function.