Gully Filter Bags

SEDIMENT CONTROL TECHNIQUE

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

Symbol

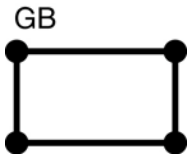

Photo 1 – Temporary gully bag

Photo 2 – Permanent gully bag

Key Principles

1. Sediment trapping primarily occurs through the filtration of the water passing through the gully bag.
2. The critical design parameters are the flow capacity and pore size of the filter bag.
3. The gully bag must not be allowed to block the passage of flow into the drainage gully even when the bag is full of sediment.
4. Can be used on field (drop) inlets as well as 'sag' and 'on-grade' roadside kerb inlets.

Design Information

Refer to manufacturer's specifications and design guidelines.

The gully bag must be installed such that no sediment-laden inflow is allowed to bypass the bag until the bag is either full of sediment, or the inflow exceeds the hydraulic capacity of the bag.

Wherever practicable, the gully bag should be capable of allowing 100% bypass of the design inflow once the bag is fully blocked with sediment. In such cases the side entry inlet slot (if any) may be fully blocked with a suitable sediment filtration barrier (Photo 1).

If the gully bag does not have the capacity to allow 100% bypass of the design inflow once the bag is fully blocked with sediment, then the side entry inlet slot (if any) must be protected in accordance with the guidelines provided for 'sag' inlets (refer to separate fact sheet).

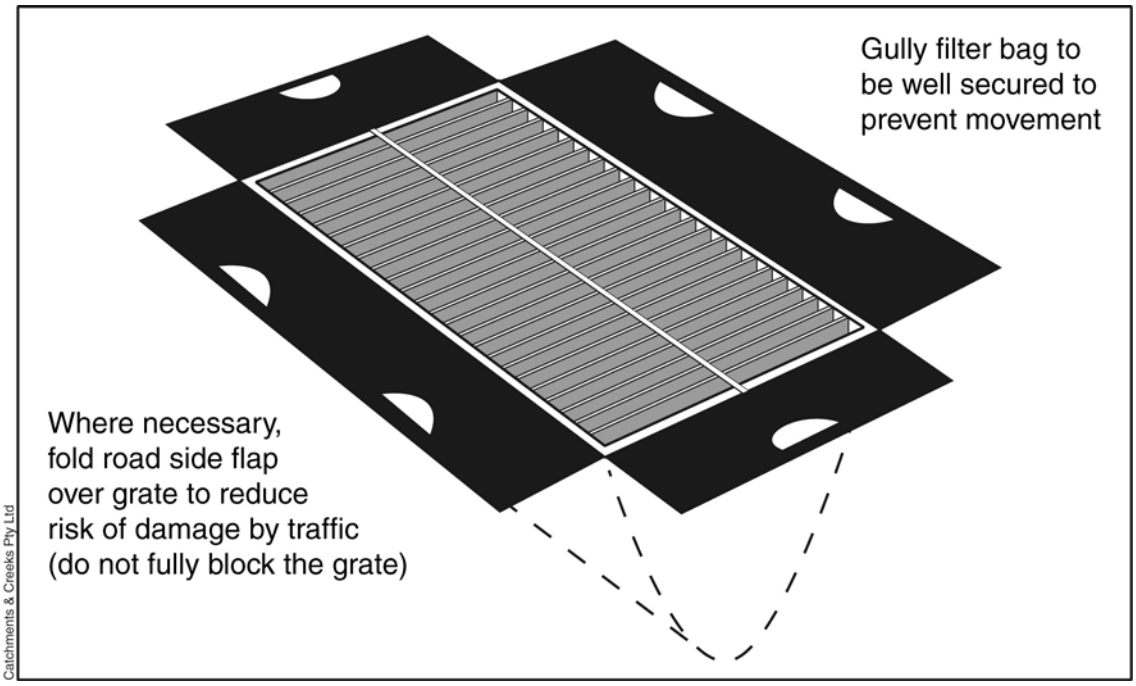

Figure 1 – Typical installation of temporary gully filter bag

Description

A gully filter bag (Photo 1) is a removable, high strength, filter bag installed beneath the grate of a roadside kerb inlet or field (drop) inlet.

An alternative to the temporary gully bag is the use of a permanent filter bag/cage (Photo 2) that can be used for sediment control during both the civil construction, building and operational phases.

Purpose

Used to trap sediment at roadside kerb inlets and field (drop) inlets.

Limitations

This technique is a Type-3 sediment trap primarily focused on the collecting of coarse sediment.

In most circumstances these traps should be supplementary to a more substantial downstream sediment trap.

Very limited control of fine sediment and turbidity.

Advantages

Simple to install.

Can assist in limiting sediment build-up in stormwater drains, thus reducing the cost of final off-maintenance clean-up.

Some systems can be retained as part of the permanent stormwater treatment system.

Less likely to be damaged by road traffic compared to aboveground kerb inlet sediment traps.

Disadvantages

May require cleaning on a regular basis.

Heavy machinery is required to remove the gully bag once full of sediment.

Common Problems

The gully filer bags are often removed before the site goes ‘off-maintenance’.

Flooding problems may occur during heavy rainfall events if the side entry slot is blocked, thus reducing the overall inlet capacity of the gully.

Location

Can be used on field (drop) inlets as well as ‘sag’ and ‘on-grade’ roadside kerb inlets.

Special Requirements

Consideration must always be given to potential bypass flows in the event of severe storms.

The sediment trap must be capable of allowing 100% bypass of the design inflow once the bag is fully blocked with sediment.

Site Inspection

Check the installation for safety risks.

Check for excessive sediment.

Check that all stormwater is allowed to pass through the gully bag.

Check to see if additional sediment traps are required up-slope and/or down-slope of the stormwater inlet.

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. Ensure that the installation of the sediment trap will not cause undesirable safety or flooding issues.
3. Install sediment trap in accordance with manufacturer's instructions.
4. Ensure that no sediment-laden inflow is allowed to bypass the gully bag until the bag is either full of sediment, or the inflow exceeds the hydraulic capacity of the bag.
5. Install appropriate sediment and/or flow controls on the side-entry slot (if any).
6. Take all necessary measure to minimise the safety risk caused by the structure.

Maintenance

1. Inspect all sediment traps daily and immediately after runoff-producing rainfall. Make repairs as needed.
2. Remove and replace the gully bag when it is either full of sediment, or is likely to be full of sediment before the next inspection, or the hydraulic capacity of the filter bag is excessively reduced.
3. Dispose of the sediment and filter bag in a suitable manner that will not cause an erosion or pollution hazard.
4. Ensure sediment does not enter the stormwater drain during de-silting operations and maintenance of the trap.
5. Sediment on the road must be removed immediately if it represents a safety hazard.

Removal

1. When the up-slope drainage area has been stabilised, remove all materials included deposited sediment and dispose of in a suitable manner that will not cause an erosion or pollution hazard.