Sediment Control Systems for Sheet Flow

SEDIMENT CONTROL TECHNIQUES

Photo 1 – Sediment-laden sheet flow

Photo 2 – Sheet flow approaching a sediment fence

Table 1 provides the recommended default classification of various sediment control systems suitable for sheet flow conditions.

Table 1 – Default classification of sediment control techniques

Type 1	Type 2	Type 3
• Buffer Zone capable of infiltrating 100% of stormwater runoff or process water [1] • Infiltration basin or sand filter bed capable of infiltrating 100% of flow	• Buffer Zone [2] capable of infiltrating the majority of flows from design storms • Compost/Mulch Berm	• Buffer Zone [2] • Filter Fence • Modular Sediment Trap • Sediment Fence

[1] The *Buffer Zone* must be able to infiltrate all inflow into the ground such that there is no surface discharge from the buffer zone.

[2] Classification depends on design details.

Supplementary sediment traps are either not effective enough at trapping sediment, or are too easily damaged by typical construction activities to be classified as Type 3 systems. Even though these sediment traps can be relatively ineffective, their incorporation into most construction activities is still considered a relevant part of the best practice sediment control. It is, however, not considered sufficient for sediment controls within a given sub-catchment to rely solely on supplementary sediment traps.

By definition, a supplementary sediment trap **must** supplement either a Type 1, 2 or 3 sediment trap located further down the catchment. Exceptions to this rule would only apply to very small and low risk work activities.

Table 2 – Supplementary sediment control techniques

Flow condition	Sediment control technique
Sheet flow treatment techniques	• Grass Filter Strips • Fibre Rolls • Stiff Grass Barrier

Photo 3 – Buffer zone

Photo 4 – Mulch berm

Photo 5 – Filter fence

Photo 6 – Modular sediment trap

Photo 7 – Sediment fence

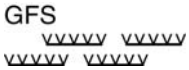
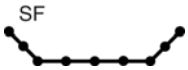
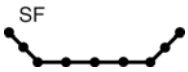
Photo 8 – Grass filter strip

Photo 9 – Fibre rolls

Photo 10 – Stiff grass barrier

Table 3 outlines the attributes of various sheet flow sediment control techniques.

Table 3 – Sheet flow sediment control techniques

Technique	Code	Symbol	Typical use
Buffer Zones	BZ		• Type 3 sediment trap. • Most suited to sandy soils. • Generally only suitable for rural and rural-residential building/construction sites. • Can provide some degree of turbidity control while the *Buffer Zone* remains unsaturated.
Compost Filter Berm	CB		• Type 2 sediment trap. • Suitable for all soil types.
Fibre Roll	FR		• Supplementary sediment trap • Most suited to sandy soils. • Suitable for minor flows only.
Filter Fence	FF		• Type 3 sediment trap. • Very small catchment areas (e.g. stockpiles). • Better capture of the finer (sand/silt) sediments compared to woven *Sediment Fence*.
Filter Sock	FS		• Type 2 sediment trap. • Suitable for all soil types.
Grass Filter Strips	GFS		• Supplementary sediment trap • Most suited to sandy soils. • Minor sediment traps placed along the contour. • Can be used as a drainage control measure to maintain sheet flow down earth batters.
Modular Sediment Trap	MST		• Type 3 sediment trap. • Modern replacement for *Straw Bale Barriers*.
Mulch Berm	MB		• Type 2 sediment trap. • Suitable for all soil types.
Sediment Fence – woven fabric	SF		• Type 3 sediment trap. • Suitable for all soil types. • Long duration construction sites likely to experience several storm events.
Sediment Fence – non-woven composite fabric	SF		• Type 3 sediment trap. • Suitable for all soil types. • Preferred type of *Sediment Fence* when placed adjacent critical habitats such as waterways. • Short duration construction sites or sites likely to experience only a few storm events.
Stiff Grass Barrier	SGB		• Supplementary sediment trap • Most suited to sandy soils. • Most commonly used as permanent sediment traps in rural areas.