

Sediment Traps for Minor Concentrated Flows

SEDIMENT CONTROL TECHNIQUES



Photo 1 – U-shaped sediment trap

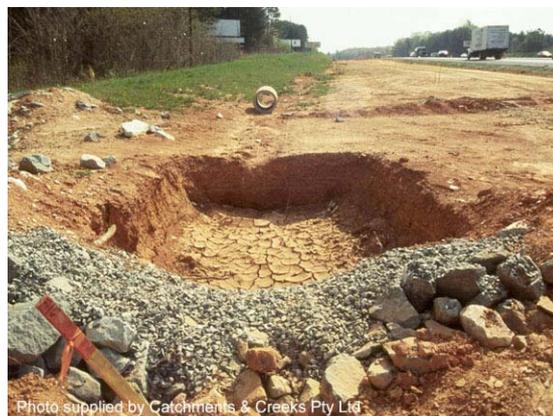


Photo 2 – Excavated sediment trap incorporated into a rock check dam

Table 1 provides the recommended default classification of various sediment control systems suitable for minor concentrated flows. The actual classification of any individual sediment control technique will depend on a number of factors including the design flow rate and the percentage of flow passing through a filtration system.

Table 1 – Default classification of sediment control techniques suitable for use within minor concentrated flows

Type 2	Type 3
<ul style="list-style-type: none"> • Filter Tube Dam^[1] • Excavated Sediment Trap incorporating a Type 2 outlet system 	<ul style="list-style-type: none"> • Coarse Sediment Trap • Excavated Sediment Trap incorporating a Type 3 outlet system • Modular Sediment Barrier • U-Shaped Sediment Trap

[1] Classification depends on the flow rate able to pass through the filtration system (i.e. filter tubes).

'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 the treatment train within a given sub-catchment to rely solely on supplementary sediment traps.

Wherever practical, 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
Concentrated flow treatment techniques	<ul style="list-style-type: none"> • Check Dam Sediment Traps • Excavated Sediment Trap • Stiff Grass Barrier • Straw Bale Barrier

Table 3 provides guidance on the selection of a sediment control technique suitable for placement within a table drain, minor channel or overland flow path.

Table 3 – Selection of sediment control technique for minor concentrated flows^[1]

	Sandbag - Check dam sediment trap	Rock - Check dam sediment trap	Coarse sediment trap	Excavated sediment trap	Filter tube dam	Modular sediment barrier	Stiff grass barrier	Straw bale barrier	U-shaped sediment trap
Standard drawing code	SBC	RC	CST	EST	FTD	MSB	SGB	SBB	UST
Typical treatment standard ^[2]	L	L	M	L	H	M-H	L	L	M
TABLE DRAINS AND MINOR DRAINAGE CHANNELS – Less than 5% grade:									
Channel depth < 500mm	✓			✓					
Channel depth > 500mm		✓		✓					
TABLE DRAINS AND MINOR DRAINAGE CHANNELS – More than 5% grade:									
Channel depth < 500mm	✓			✓					✓
Channel depth > 500mm		✓	✓		✓	✓			✓
Rural (long-term usage)							✓		
STORMWATER OUTLET SEDIMENT TRAPS:									
Outlet fall < 300mm				✓					
Outlet fall > 300mm			✓		✓	✓			
Difficult access					✓	✓		✓	
OUTLET STRUCTURES FOR SEDIMENT FENCES:									
Situations where the sediment fence is expected to concentrated outflows			✓		✓				

[1] Final selection should be based on actual site conditions.

[2] H = high treatment standard (e.g Type-2), M = medium treatment standard (e.g Type-3), L = low treatment standard (e.g. supplementary sediment trap).



Photo supplied by Catchments & Creeks Pty Ltd

Photo 3 – Check dam sediment trap



Photo supplied by Catchments & Creeks Pty Ltd

Photo 4 – Coarse sediment trap



Photo supplied by Catchments & Creeks Pty Ltd

Photo 5 – Filter tube dam



Photo supplied by Adam Pullen

Photo 6 – Modular sediment trap



Photo supplied by Catchments & Creeks Pty Ltd

Photo 7 – Stiff grass barrier



Photo supplied by Catchments & Creeks Pty Ltd

Photo 8 – Straw bale barrier



Photo supplied by Catchments & Creeks Pty Ltd

Photo 9 – U-shaped sediment trap

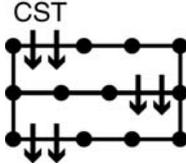
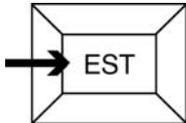
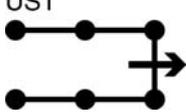


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Photo 10 – Example of various purpose-design stormwater outlet sediment traps

Table 4 outlines the attributes of various sediment control techniques suitable for placement within a table drain, minor channel or overland flow path.

Table 4 – Sediment control techniques suitable for minor concentrated flow

Technique	Code	Symbol	Typical use
Check Dam Sediment Trap	CDT		<ul style="list-style-type: none"> Supplementary sediment trap. Commonly used in table drains. <i>Check Dams</i> can be constructed from rock, sand bags, or compost-filled socks. Compost-filled socks can adsorb some dissolved and fine particulate matter.
Coarse Sediment Trap	CST		<ul style="list-style-type: none"> Type 3 sediment trap. Best used on sandy soils. Commonly used as an outlet structure at the low point of a <i>Sediment Fence</i>.
Excavated Sediment Trap	EST		<ul style="list-style-type: none"> Supplementary sediment trap. Best used when it is necessary to avoid backwater ponding and thus sedimentation within the stormwater pipe. Safety issues may require the excavated pit to be fenced.
Filter Tube Dam	FTD		<ul style="list-style-type: none"> Type 2 sediment trap. Trapping sediment in minor drainage lines. Generally provides greater treatment of low flows than a <i>U-Shaped Sediment Trap</i>. <i>Filter Tubes</i> can be integrated into a variety of Type 2 and 3 sediment traps (such as a <i>Rock Check Dam</i>, <i>U-Shaped Sediment Trap</i>, <i>Rock Filter Dam</i>, and <i>Sediment Weir</i>) to improve their low-flow trapping efficiency.
Modular Sediment Trap	MST		<ul style="list-style-type: none"> Type 3 sediment trap. Modern replacement for <i>Straw Bale Barriers</i>. Capacity to accept concentrated flows depends on construction technique.
Stiff Grass Barrier	SGB		<ul style="list-style-type: none"> Supplementary sediment trap Most suited to sandy soils. Typically used as a component of long-term gully stabilisation in rural areas.
Straw Bale Barrier	SBB		<ul style="list-style-type: none"> Type 3 sediment trap. Best used as a short-term (< 1-day) sediment trap. Generally only suitable when poor site access prevents the use of other, more suitable, sediment traps.
U-Shaped Sediment Trap	UST		<ul style="list-style-type: none"> Type 3 sediment trap. Minor concentrated flows such as table drains. Filter tube can be incorporated into the outlet weir to improve efficiency.