

EROSION CONTROL TUBES

SEDIMENT CONTROL & BIOENGINEERING SOLUTIONS

PRODUCT DESCRIPTION

Erosion Control Tubes (ECT) are a bio-engineering technology available to the mining earthworks and construction industries through Geofabrics. They have a variety of uses including:

- Intermediate or perimeter erosion control
- Retention and filtration of sediment from water using shredded wood, bark or compost
- Installation over tree roots and other obstacles without the need to trench
- Cost-effective facing for engineered geogrid walls (with appropriate engineering design)
- Growth medium for vegetation
- Track and pavement support
- Stabilisation of erosion scarps and slips
- Drain protection
- Stockpile containment (easily removed for heavy vehicle access)
- Control and direction of overland flow (storm water, stream diversion, clean water by-pass)


VERSATILE FILLED UNITS

The filled units are tied off in one metre lengths so a 2m unit can be either cut and used as 1m ECT's or the central ties simply undone and the fill shaken in to make a full 2m long unit. This innovation means easy onsite handling and efficient transporting.

SPECIFICATION	
Geofabrics ECT Product Range:	ECT150 - light weight pre-filled ECT (50 to the pallet)** ECT200 - low flow conditions and stacking (190mm ID unfilled) ECT300 - higher flow conditions + wall construction (280 ID unfilled) ** Stocked Item
Fabric material:	UV stabilised high density polyethylene
Durability of fabric:	10 years estimated
150mm ECT filled supplied as	2m lengths tied off in 1m sections
Weight ECT150 filled (2m units)	10 -12kg weight is dependant on fill material used.
Fill material	Typically wood chip. Other materials on request: compost, bark, fertiliser mix, seed, flocculants, wool and other products as required. Some products contain seeds/weeds.
Add-ons: A range of add-one material are available on request	- Break cord (lengthways) for tie down of the ECT of lifting - Flocculants to remove colloidal sediment - On-site contract filling is available by arrangement

INSTALLATION GUIDELINES

ECT's are ideal for the management of sediment associated with sheet flow erosion or short duration channel flow. They are not suitable for constant flow situations. ECT fill can be altered to suit different flow rates; compost can be used for low flow situations and coarser bark/wood products can be used for higher flows. Coarser products are often a necessity in high rainfall / high runoff environments but will reduce the capture of fines.

On steep slopes and/or with high runoff rates may require closer spacing of the ECT to reduce water velocity and coarser material to manage flow (see Table 1).

SPECIFICATION		
Table 1. Slope spacing for ECT will be site dependant and will be affected by slope gradient, slope length, soil type, rainfall (climate) and runoff rates. The tabulated data provides an initial starting point to establish an ECT system.	Slope Gradient	ECT spacing (down slope)
	2H:1V or steeper	ECT every 7m of slope or less
	(2H:1V) to (4H:1V)	ECT every 7m to 15m of slope
	(4H:1V) to (10H:1V)	ECT every 15m to 30m of slope
	10H:1V or less	ECT every 30m or more

ECT 150mm - 300mm may be used for the management of sediment on slopes using a cross-slope pattern where the objective is to minimise run-off velocities and drop sediment on the slope, for perimeter control and for the management of sediment associated with short duration channel flow (drainage swales).

ECT should be laid in place and walked over to bed the ECT into the ground (and prevent underflow). ECT should then be pegged into the underlying substrate by driving pegs through the centre of the ECT at regular intervals (typically at each end and then every 1-2m). Site maintenance will identify if the pegging adequate.

MAINTENANCE

ECT should be checked on a regular basis as part of the scheduled site maintenance. If excessive sediment has been caught by the ECT this should be removed. If the ECT was overtopped then additional ECT may be required upslope or another ECT can be stacked on the first to raise the height. However, excessive sediment may indicate further upstream erosion control is required to stop soil movement in the first instance.

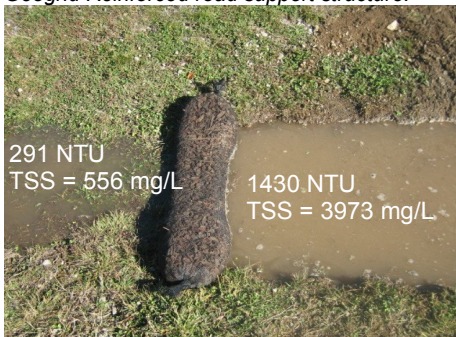
At the completion of the project ECT can be left in place (if permitted) and grassed over. ECT requiring removal can be cut lengthways and the internal contents spread over the site where sediment won't re-enter the local waterways as a natural growing medium.



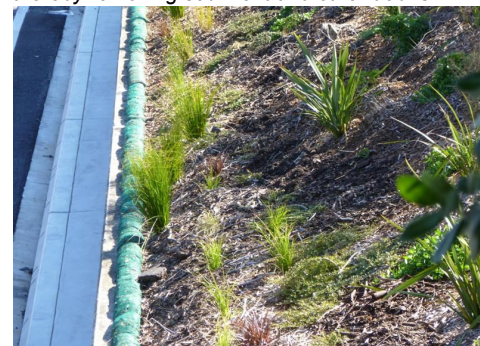
300mm ECT used as facing for an engineered Geogrid Reinforced road support structure.



300mm ECT used to control overland flow velocity thereby removing sediment and other debris.



150mm ECT used to remove coarse sediment and filter the finer sediment fraction.



150mm ECT used perimeter retention of bark mulch on motorway embankment landscape planting.

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