

Table D1 Erosion Control Products for Stabilising Disturbed Lands

* (note that this table has been updated from Table D1 in Landcom (2004)).

| Erosion control practice (generic type) [1] | Type | Effect on vegetation | | | | Controlling erosion and pollution | | | | Structural Performance | | | | | | Constraints | |
|--|---|-------------------------------------|----------------|------------------------------|---------------------------------|-----------------------------------|----------------|---------------------------|---------------|-------------------------|---------------|--|--|--|----------------------|---|---|
| | | enhances germination of grass seeds | controls weeds | enhances growth of tubestock | reinforces root-holding ability | protects soil surfaces | reduces runoff | filters or traps sediment | stops seepage | reinforces steep slopes | resists waves | stable in low (<2 m/sec) channel flows | stable in moderate (2-5 m/sec) channel flows | stable in high (5-7 m/sec) channel flows [2] | stabilises pavements | | |
| ORGANIC PRODUCTS (can be recycled) | | | | | | | | | | | | | | | | Might need anchoring | |
| Composted Coarse Mulch | 16 tonnes per hectare | 1 | 1 | 1 | 0 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Composted Coarse Mulch | 27 tonnes per hectare | 0 | 2 | 3 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Composted Coarse Mulch | 56 tonnes per hectare | 0 | 3 | 3 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Composted soil conditioner | 100 L per m ² (max) | 3 | 1 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Product needs incorporation into existing soil |
| Manufactured soils | 150 L per m ² (max) | 3 | 1 | 3 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SPRAY ON PRODUCTS | | | | | | | | | | | | | | | | | |
| Hydromulching | 2.0 tonnes mulch + 300 litres binder per hectare | 3 | 0 | 0 | 0 | 3 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Bonded Fibre | 5 tonnes fibre per hectare | 3 | 1 | 1 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Bonded, Blown Compost | Min 50 mm cover | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ROLLED EROSION CONTROL PRODUCTS (RECPs) | | | | | | | | | | | | | | | | Ensure RECP's have intimate contact with subsoils (good preparation), are well anchored and have check slots in conditions of concentrated flow | |
| Biodegradable ECB's | Jute mesh | 2 | 1 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | |
| | Coconut fibre mesh (400gsm) | 2 | 1 | 0 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | |
| | Coconut fibre mesh (700gsm) | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 0 | 0 | 0 | 2 | 2 | 0 | 0 | 0 | |
| | Curled wood fibre in plastic mesh | 3 | 1 | 1 | 1 | 3 | 2 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | Nets might trap fauna |
| | Jute matting (~350 gsm) | 3 | 1 | 1 | 1 | 3 | 2 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | Allows weed growth |
| | Jute matting (~600 gsm) | 0 | 3 | 3 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | Not for grass growth |
| | Coconut fibre matting (~400 gsm) | 3 | 1 | 1 | 1 | 3 | 2 | 1 | 0 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | Allows weed growth |
| Photodegradable ECB's | Coconut fibre matting (~900 gsm) | 0 | 3 | 3 | 0 | 3 | 2 | 1 | 0 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | Not for grass growth |
| | Mesh (< 5 mm openings) | 2 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | Little moisture retention |
| | Super light weight nonwoven (~30gsm) | 2 | 0 | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | Little moisture retention; net (if included) can trap fauna |
| Non Biodegradable TRM's | Plastic fibres with netting | 2 | 1 | 0 | 3 | 3 | 2 | 1 | 0 | 0 | 3 | 3 | 3 | 0 | 0 | 0 | Soil-filled and vegetated |
| | Light performance 3D welded fibres | 2 | 1 | 0 | 3 | 3 | 2 | 1 | 0 | 0 | 1 | 3 | 2 | 0 | 0 | 0 | Soil-filled and vegetated |
| | Medium performance 3D welded or woven fibres | 2 | 1 | 0 | 3 | 3 | 2 | 1 | 0 | 0 | 2 | 3 | 3 | 0 | 0 | 0 | Soil-filled and vegetated |
| | High performance 3D woven fibres | 2 | 1 | 0 | 3 | 3 | 2 | 1 | 0 | 0 | 3 | 3 | 3 | 3 | 1 | 0 | Soil-filled and vegetated |
| | Med. perform. composited with degradable material | 2 | 1 | 0 | 3 | 3 | 2 | 1 | 0 | 0 | 2 | 3 | 3 | 0 | 0 | 0 | Soil-filled and vegetated |
| HYDRAULIC SOIL STABILISERS | | | | | | | | | | | | | | | | | |
| | Polymers/Polyacrylamide (rate depends on type) | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | Needs water supply for application |
| | Bitumen emulsion (12,000 l/ha) | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | Environmental concerns |
| TEMPORARY SEEDING | | | | | | | | | | | | | | | | | |
| | Annual | 0 | 1 | 0 | 0 | 3 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | Minimum 28 days to establish |
| | Perennial | 0 | 2 | 0 | 0 | 3 | 2 | 2 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | Needs water supply |
| INSTANT TURF | | | | | | | | | | | | | | | | | |
| | Kikuyu | 0 | 1 | 0 | 0 | 3 | 2 | 2 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | Needs water supply |
| | Reinforced turf (pregrown) | 0 | 1 | 0 | 3 | 3 | 2 | 2 | 0 | 1 | 1 | 2 | 2 | 0 | 0 | 0 | Needs water supply |
| OTHER PRODUCTS | | | | | | | | | | | | | | | | | |
| Straw (anchored) | 4.5 tonnes per hectare | 3 | 1 | 1 | 0 | 3 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Weed mat | | 0 | 3 | 1 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Restricts air and moisture |
| Geotextile | | 0 | 1 | 1 | 1 | 2 | 0 | 2 | 0 | 2 | 0 | 2 | 1 | 0 | 3 | 0 | See general note for RECP's above if used in channels |
| Sediment fences | | 0 | 0 | 0 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Earth-filled geotextile tubes | | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Low profile |
| Floating sediment barriers | | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| Grout injected mats | | 0 | 1 | 0 | 0 | 3 | 0 | 0 | 1 | 0 | 2 | 3 | 3 | 3 | 0 | 0 | Rigid structure |
| Gabion Mattresses | | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 3 | 3 | 3 | 1 | 0 | |
| Articulated concrete mats | | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 3 | 2 | 2 | 0 | 0 | |
| Reinforced armouring systems | | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 3 | 3 | 2 | 2 | 0 | 0 | |
| Cellular soil confinement (synthetic) | | 2 | 0 | 0 | 0 | 3 | 1 | 0 | 0 | 2 | 2 | 2 | 2 | 0 | 2 | 0 | Anchor on steep slopes |
| Wind barrier fencing | | 0 | 0 | 0 | 0 | 2 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Flexible waterproof membranes | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Vertical soil moisture barriers | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Geosynthetic clay liners | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| Prefabricated subsurface drainage | | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 3 | 2 | 0 | 0 | 0 | 0 | 2 | 0 | |
| Pipe inlet sediment barriers | | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Clean regularly |
| Wattles and logs | | 0 | 0 | 0 | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | Needs pinning |

Key to Rating System

- 0 – not designed for, and has no expected performance in this application
- 1 – not specifically designed for, but can enhance performance of other measures in this application
- 2 – generally designed for this application in conjunction with other applications, but performance is less able to deal with the range of conditions met by specific purpose materials
- 3 – specifically designed to meet a full range of requirements for this application

[1] There can be considerable differences between products within any generic type. For further information products, including trade names and suppliers, please phone the office of Australasian Chapter of the International Erosion Control Association on 1800 354 322 or (+61 2) 4677 0901.

[2] The designer should check shear stress as well as velocity. Shear stress becomes determining as slope gradient increases.