

# Dispersive Soils



Dispersive soils are structurally unstable in water, they readily breakdown into their constituent particles (sand, silt and clay) resulting in some of the clay particles dispersing into the water. Once dispersed, the clay particles can remain suspended in the water for long periods—days, months or even years.

Dispersive soils—which include sodic soils—are normally highly erodible and are likely to cause problems to road cuttings, table drains and basin embankments.



Dispersible soil can cause the following problems:

- severe erosion (rilling) of slopes and drain inverts;
- high levels of turbidity in stormwater runoff;
- severe rilling of unprotected earth batters;
- undermining of newly grassed areas;
- high susceptibility to tunnel erosion causing dam failure;
- undermining of hard channel linings (eg. concrete) and semi-rigid channel linings (eg. rock mattresses).



In most circumstances, the best engineering treatment of dispersive soils is to ensure the soils are buried under a layer of non-dispersive soil before the final surface treatment (eg. grass seeding, turfing, rock, concrete, rock mattresses) is applied. A minimum cover of 100mm is generally recommended on gentle slopes and 200mm on steep slopes. If suitable non-dispersive soils are not available, then treat the dispersive soil by working either gypsum or lime (depending on desired soil properties) into the top 200mm (minimum) of the soil.

