

Common Questions and Answers about Erosion and Sediment Control

General Questions

Question 1: Why are people so concerned about the environmental impact of dirt when it is a natural substance anyway?

There are a number of reasons why dirt, soil or sediment needs to be kept out of our waterways. These include:

1. Most soils contain some "plant food" or nutrients like phosphorous or nitrogen. These nutrients are water soluble. When water gets on the soil they are dissolved. Plants then draw these dissolved nutrients into their root system. That's how plants eat. If you then take a bucket full of soil with these water soluble nutrients in it and dump it into a water way then all the water soluble nutrients will dissolve. In every waterway in Australia there are different types of algae. Algae are very simple plants. When there is extra plant food or nutrient in a waterway the algae will eat it and multiply. So when there is a lot of extra nutrient around in a waterway we get algal blooms. Other major sources of nutrient in our waterways include agricultural fertilisers, sewerage overflows and contaminated ground water.
2. Soils running off building sites can also be contaminated with paints and other chemicals. These paints and other chemicals can contain heavy metals and other poisons which will harm our waterways.
3. Soils from building and development sites affect the way our rivers flow by building up on the bottom of the rivers or near the banks. This change to flow patterns in a waterway can affect the biological systems in that waterway.
4. Soils from building sites can block local drains. These drains are there to carry water away from a particular area. If the drains are blocked local flooding could occur. Clearing blocked drains is also an extra expense for either developers or the local Council.
5. Increased soil in waterways can affect the amount of light penetrating in to that waterway which affects the way algae grow.
6. Increased soil in waterways can also cover the plant and animal communities that live on the bottom of the waterway as well as reduce visibility in the waterway which affects the animal life. Soil can also scratch the gills of fish.

So there are lots of good reasons for wanting to keep extra soil out of our waterways.

Question 2: What are the penalties if I break the erosion and sediment control laws?

There are a range of laws governing installation and maintenance of appropriate erosion and sediment controls on Council and building and development sites. Most Council approvals require for example people to put appropriate erosion and sediment controls in place before that work begins. For builders and developers these are set out in their "Conditions of Approval". If these are not complied with Council can impose an on the spot fine of \$600 under the Environmental Planning and Assessment Act (1979). The other major law that Councils and the Department of Environment and Climate Change (DECC) officers can use to "encourage" more effective erosion and sediment control on building and development and Council work sites is the Protection of the Environment and Operations Act (1997). Under this Act authorised officers have a range of enforcement options. These include use of:

- Clean Up Notices which can require immediate action for incidents that have occurred or are likely to occur
- Prevention notices to deal with "environmentally unsatisfactory behaviour"
- On the spot fines of up to \$1500 for minor offences
- Fines of up to \$500 000 for individuals and \$1 000 000 for corporations for more serious offences

There are also provisions within this law for even higher fines of up to 5 million dollars, frozen assets, clean up costs and damages for corporations and up to \$1 000 000 and/or seven years gaol, clean up costs, frozen assets and damages for very serious offences. Authorised officers from the Department of Environment and Climate Change and local Councils have a broad range of enforcement powers.

Technical Questions

Question 3: What is Erosion?

Erosion is the wearing away of the land by the action of rainfall, running water, wind, moving ice or gravitational creep. Soil detachment (erosion) occurs when the erosive forces, from raindrop impact and/or flowing water, exceeds the soils resistance.

Question 4: How do I stop Erosion?

Protect the soil surface from the erosive forces of raindrop impact and convey water in a non-erosive manner. Eg: mulch, rock, grass and slowing the running water down

Question 5: What is sediment and sedimentation?

Sediment is the by-product of erosion, the small soil particles that have been detached. Sedimentation occurs when the transportation of detached soil particles ceases and soil particles settle (or fall) out of suspension.

Question 6: What do sediment control measures do?

They slow the velocity of water so that soil particles can settle out by gravity or chemically treat sediment laden water to promote settlement of very fine suspended soil particles. You could say that sediment control measures catch sediment before it makes its way to our waterways etc.

Question 7: Why is a sediment control fence or sometimes called a silt fence?

Sediment Control Fences are temporary measures used to reduce sediment pollution to down-slope lands and waterways. They are a long level and porous dam made out of geo-fabric materials. This dam is designed to catch the sediment laden water allowing sedimentation by gravity. Water decants through the fabric leaving the sediment behind the sediment control fence. Sediment Control Fences are **not** used to filter water.

Question 8: Is it true that the Sediment Control Fence must be trenched into the ground and compacted?

Yes the fence must be trenched into the ground at least 150mm, back filled and compacted. If you do not trench the fence into the ground water will simply run underneath the fence. You must back fill and compact the earth where you have trenched it. If you do not backfill and compact then there will be air pockets around the bottom and water will find the area and tunnel underneath the fence.

Remember: Where the sediment fence is not installed correctly water will inevitably flow through the point of least resistance. Damaged fences must be repaired promptly.

Question 9: What does a Stabilised Access (Entry/Exit) Point do?

A stabilised access assists in preventing sediment tracking off the site. The stabilised access is an area a vehicle can park and deliver without getting their tyres muddy. The rock also assists in taking mud off any tyres before the vehicle enters the street. A stabilised access also allows work to begin a lot sooner after rain and reduces the likelihood of vehicles bogging on site.

Question 10: What rock depth and rock size should be used for a stabilised access?

The recommended depth of rock is 200mm and 30-40 mm in rock size. Remember that geotextile fabric should be placed under rock to prevent intermixing of sub grade and rock material. Stabilised access points only require periodic maintenance with the topping up of the rock. Street sweeping on adjacent roads may still be required.