



Description

A filter strip is a technique that uses materials such as mulch or grass to decrease velocity of overland water flow and remove sediment by filtration, deposition, infiltration, absorption and plant uptake.

Application and Function

Filter strips are usually placed around impermeable surfaces such as roads, pavements or drainage lines to act as a last defence between an area needing protection (such as a storm water system) and the adjacent property.

Mulch and vegetation filter strips placed downslope of construction works can provide a simple method of trapping sediment. Nature strips are a good example of the last defence against sediment loss in an urban environment before water reaches the curb and gutter.

Limitations

- Filter strips are only capable of trapping coarse sediments. The fine silt will pass through this buffer during periods of heavy rainfall.
- Filter strips are not intended to treat concentrated flows.
- If direct seeding of grasses is used, the timing of the project is critical to establishment prior to rain events.

Alternatives

Existing vegetation can be retained and used as a filter strip; however existing coverage will need to be at least 80%.

Advantages

Easy installation and generally low construction cost. They provide a natural and effective measure to remove coarse sediment. They can be designed as a long term sediment control measure.

Generally, the wider the filter strip, the more effective it will be in reducing the overland flow velocity and settling of suspended sediments.

Construction

Refer to approved plans for design, location, extent and detailed specifications of filter strips. Refer any questions regarding location, extent or methods of installation to the responsible on-site supervisor or contract Engineer.

A vegetation filter strip using grass can be achieved using either instant turf products or direct seeding.

Mulch is an alternative form of filter strip that can perform the same function as a grassed filter strip.

It is important that flow enters the filter strip as sheet flow and spreads out over the width of the strip. Runoff must be able to flow to and be dispersed through the filter strips without concentrating flow along the upper edge of the buffer. Regular diagonal strips may be required to force low flows through the buffer and avoid rill erosion along the upper edge.

Where a slope exists along the filter strip, a return strip can be installed to prevent scouring along the upper edge of the buffer by reducing water flow velocity.

As clearing of the site progresses, construct diversions as required to capture and direct runoff evenly through the filter strip.

Maintenance

- Filter strips should be inspected after each rain event.
- Check for evidence of scouring / rilling and flows along the upper edge of the strip.
- If excessive sediment loads are apparent, investigate the source and resolve.
- Where direct seeding or instant turf is installed, reticulation may be required to establish effective plant growth.
- Vehicular traffic and construction equipment must be kept off the filter strip, particularly in the early stages.
- Depending on the construction material used, additional turf strips, mulch or small earth banks may need to be installed diagonally to the existing filter strips to direct flow through the buffer.

Contact details

For further information contact the DLRM Land Management Unit in your region. Additional Technical Notes and Erosion and Sediment Control Guidelines are available on the website: <http://www.lrm.nt.gov.au/soil/management>

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