SEDIMENT FENCES

WHAT IS THIS?

A sediment fence is a vertical barrier made from purpose-made woven or composite fabric, NOT shade cloth, held in place with pickets and a backfilled trench (Figure 22). A sediment fence works by ponding runoff upslope of the fence and allowing coarse sediment particles to drop out with gravity.

A sediment fence (Type 3 Sediment Control, catching only big particles) is installed across slopes (i.e. along the contour) and at other locations such as below stockpiles, to capture sediment from sheet-flow erosion. It is crucial to use the correct materials and installation procedure, otherwise it won't work. Sediment fences should NOT be used in drainage channels.

WHAT DO I NEED TO DO?

Before starting site works:

▶ Determine the number and size of sediment fences required on your site and document the locations on your ESCP (see page 17).

▶ Design sediment fences across the contour so that the drainage area (or catchment) up-slope of the sediment fence suits the size and arrangement of the fences. A single row of sediment fences at the bottom of a large site is unlikely to be sufficient to capture sediment from runoff – several rows of sediment fences may be required.

▶ Ensure you have enough sediment fence supplies to construct fences as shown on your ESCP. It is better to have it and not need it than the other way around. Keep spare rolls of fabric and posts/stakes on-site for "running repairs".

▶ Include the function and maintenance of sediment fences in all site inductions.

Note: A sediment fence is NOT designed to function as a filter; clay and silt particles will not be captured by a sediment fence. Sediment fences are your last line of defence and will NOT adequately treat water when used as the only control. Prevent erosion in the first place by installing the erosion controls as described in the Erosion Control section.

Installing the controls:

▶ Install sediment fences before the start of site works.

▶ Survey and mark out the location of sediment fences, ensuring they are parallel to the contours of the site with the ends angled up-slope.

▶ Dig a 200mm deep trench, 150mm above the proposed sediment fence line. Offsetting the trench from the sediment fence line ensures maximum stability for the fence pickets, which will be place in undisturbed soil.

▶ Place the bottom edge of the fabric in the base of the trench.

▶ Backfill the trench and compact to secure anchorage of the fabric.

▶ Drive pickets into ground on downslope side of the trench, 2m apart to support the sediment fence fabric. Tension and fasten fabric to pickets using UV stabilised zip ties or wire ties. For best results, attach a wire support along the top edge of the sediment fence, tension, and attach to pickets. This will reduce sagging and overtopping of the fence during larger runoff events.

▶ Join sections of fabric at a support post with a 2m overlap.

▶ Curve the ends of the sediment fence upslope (like a smile) to avoid scouring at the outer edges.

Note: DO NOT place sediment fences across concentrated flow paths, creeks or major drainage lines. Rock check dams, lined drainage channels, or rock filter dams are the appropriate controls for concentrated flow paths.
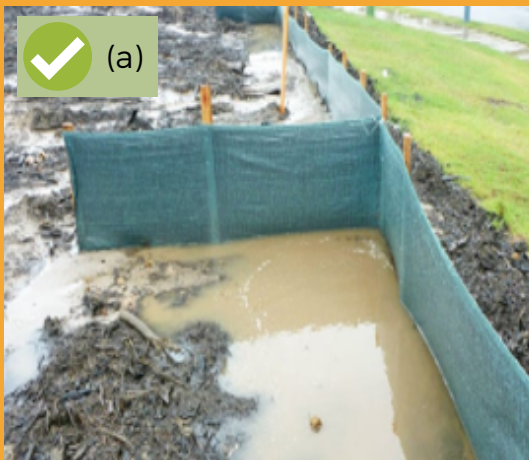
Well installed sediment fences (a) work effectively to pond runoff, allowing sediment to settle out via gravity, while poorly installed sediment fences (b) - where the fabric has not been correctly buried - do little to prevent sediment moving off-site. *Images from TOPO Pty. Ltd.*

Maintaining the controls:

Check your sediment fences regularly, especially prior to forecast rain and after every rain event to clean and repair. The arrangement of sediment fences can be altered if the site's drainage patterns change. If the ponding area behind the sediment fence has filled up more than 1/3 of the depth of the fence with sediment, it must be cleaned. The built-up material can be re-stockpiled and used on-site (if not contaminated) or disposed of to landfill. Check that all the pickets and the bottom of the fence are secure and there are no tears in the fabric – repair or replace as necessary. If there is evidence of significant amounts of sediment passing through the sediment fence, you must install further controls to prevent this occurring in the next rain event.
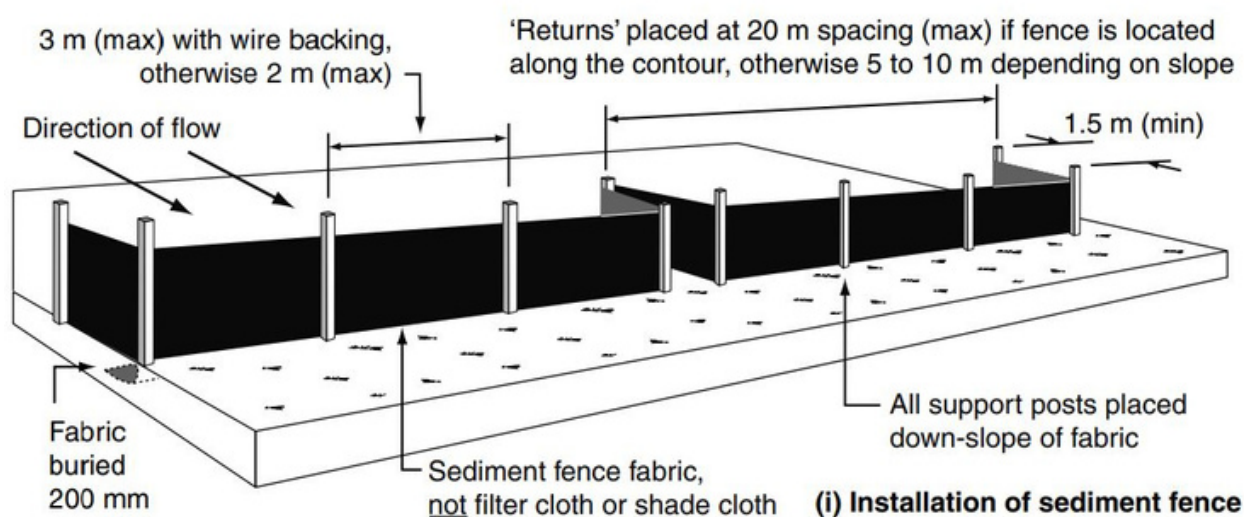

Figure 22: Nominal dimensions and constructions details for sediment fence installation. *Figure from Catchments and Creeks Pty Ltd.*