

Silt Control Guidance

Preventing Pollution While Dredging

Dredging work is required to be carried out under a Controlled Activities Regulations authorisation which will contain conditions to prevent silt pollution. It is therefore your responsibility to comply with the conditions and to prevent pollution while undertaking the work. This guidance is intended to provide information on silt control methods for those carrying out dredging work.

There are various methods available to prevent pollution and it is up to you to choose the best one for the type of river you are working on depending on its width, depth and speed of flow. If silt-laden water escapes downstream of the works it can pollute the river, harm wildlife and smother habitat. Prevention measures must therefore be in place **before** work starts. Whichever method is used will require regular checking and maintenance to ensure it is functioning properly and that silt is not escaping downstream.

If problems do arise then the first action is to safely stop dredging and notify your local SEPA office.

Silt control techniques other than those listed below are acceptable, provided they prevent silt from being carried downstream of the work and ensure compliance with the authorisation.

Filtering and Settlement Methods

Sediment control works best where the flow of water is slowed, e.g. by using a barrier, in addition to a method being employed upstream of the barrier to trap and remove silt where it settles e.g. sedi-mats. Fine sediment particles can take a long time to settle out of the water column so water should be slowed over a long length of channel to maximise the amount of settlement taking place. It is important to remove as much of the trapped sediment as possible to avoid releasing a concentrated plume when the barrier is removed after completion of the work. The risk of releasing a plume can be further reduced by removing the barrier slowly from the top down so that the impounded water upstream is released slowly.

The methods below may need to be used in combination. The size of the river and volume of water will be critical in establishing the best option.

- **Sedi-mats:** These are products that can be placed on the bed of a river downstream of works to trap sediment as water flows over them. They may be suitable for small and shallow burns or where a barrier has been placed downstream to slow the flow.
- **Straw bales:** Placing a barrier of straw bales downstream of works may help trap suspended sediment while allowing the water through the bales. Careful anchoring and regular checking of the bales will be needed. This method may be enhanced by materials such as sedi-mats being placed upstream to trap settled sediment.
- **Straw bale cages:** Bales can be placed into a cage or net to keep them together and then placed downstream of works to act as a filter for suspended sediment. This method may be enhanced by having materials such as sedi-mats placed up stream to trap settled sediment.
- **Rock filter dams:** temporary barriers placed downstream of works, made from rock and geotextile, which allow water to filter through them, trapping sediment in the process.

Other Methods

You may choose a different method for the control of silty water if you consider it will be more effective for your particular circumstances. Other methods may involve more installation effort and include:

- **Coffer dams:** temporary barriers placed around works to create a dry working area, constructed from, e.g. sand bags, sheet piling, clay/earth, wooden sheeting.
- **Aqua-dams:** a water filled barrier which can isolate a dry working area.
- **Flumes:** river water is directed through a pipe keeping it separate from dredging works. A coffer dam is usually employed to direct water into the flume.
- **Over-pumping:** The area to be dredged is isolated, e.g. using a coffer dam, and dried by pumping the water downstream of the works.
- **Silt curtains:** A permeable screen of fabric, e.g. hessian, vinyl or other geotextile, normally used to isolate an area. The screen is anchored and hangs within the watercourse.

Note: All of the above methods require careful installation to trap as much silt as possible, and need to be regularly inspected and maintained to prevent failure during the work. Material that has accumulated upstream of a filter or barrier should be carefully removed and properly disposed of e.g. by spreading over the adjacent field. The filter or barrier should be removed as soon as possible after it is no longer needed.

Other Considerations

- **Wildlife and Conservation:** CAR authorisations contain conditions to ensure there is no detriment to any protected sites, e.g. SAC, SPA, SSSI, or sensitive species such as freshwater pearl mussel. You must therefore be aware of any protected sites and sensitive species in or near the stretch of river to be dredged. You must comply with all your authorisation conditions including one which states that the work must not be undertaken during periods in which fish are likely to be spawning in the watercourse nor in the period between any such spawning and the subsequent emergence of the juvenile fish.
- **Weather conditions:** Avoid working during high flows. Dry weather and low flow conditions are pre-requisites for the safe installation and management of sediment management apparatus, and isolating works such as coffer dams are easier to manage during dry flows.
- **Plan the work in advance:** Have a plan for controlling and reporting spillages and pollution incidents. Dredge small sections at a time and allow sediment to settle before continuing. Minimise in-channel machine access in compliance with your authorisation conditions.
- **Managing dredged material:** Don't heap it on the banks. Spread it out if placing on adjacent land.

For further guidance on working in or near rivers, visit our guidance page on the website: http://www.sepa.org.uk/water/water_publications.aspx, see WAT-SG-29 Good Practice Guide: Construction Methods.