

Description	Instream sediment trapping devices include both floating materials (turbidity curtains) anchored to the watercourse bottom and instream sediment collection mats that run along the watercourse bottom (Sedimat™). These materials are specifically designed to limit sediment transport impacts within a body of water. Turbidity curtains are floating silt fences that allow water to pass through but retain soil particles and other debris. Depending on the curtain's permeability, they can also slow the flow of water enough to give sediment time to settle.								
Applications	To provide sedimentation protection for in-stream, bank, or upslope ground disturbance or from dredging or filling within a waterway. Practice applies within a flowing watercourse, lake, or other area of water impoundment or flow that has aquatic resources needing protection. Also applies when runoff occurs close to rivers, streams, lakes, reservoirs, or when construction projects take place on or under water.								
Limitations	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">Drainage area – N/A</td> <td style="width: 50%;">Maximum slope – N/A</td> </tr> <tr> <td>Minimum bedrock depth - N/A</td> <td>Minimum water table - N/A</td> </tr> <tr> <td>NRCS soil type – N/A</td> <td>Freeze/thaw – N/A</td> </tr> <tr> <td colspan="2">Drainage/flood control – N/A</td> </tr> </table> <p>Turbidity curtains should not be installed across streams unless they are specifically engineered to stop sand bar creation and are approved by appropriate local, state and/or federal authorities.</p>	Drainage area – N/A	Maximum slope – N/A	Minimum bedrock depth - N/A	Minimum water table - N/A	NRCS soil type – N/A	Freeze/thaw – N/A	Drainage/flood control – N/A	
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Targeted Pollutants	Sediment								
Design Parameters	<p>These BMPs are designed and selected for specific flow conditions. For sites with flow velocities or currents greater than 5 ft per second, a qualified engineer and product manufacturer should approve of the use.</p> <ul style="list-style-type: none"> ▪ Materials should be of strong, heavy-weight materials that have ultraviolet light (UV) inhibitors. The tensile strength should be sufficient to withstand predicted flows. All material seams and line attachments should be sewn or vulcanized welded into place. Materials should be of bright colors, when applicable, to attract attention of boaters or swimmers using areas near the work site. Flotation devices for turbidity curtains should be flexible, buoyant units contained in an individual flotation sleeve or collar attached to the curtain. ▪ Shoreline turbidity curtain anchors and instream sediment mat anchors should be 2 x 4 or 1.33 pounds/lineal ft metal stakes. Bottom anchors for turbidity curtains should hold the curtain in position and may be any of the following anchor types: plow, fluke, mushroom, or a grappling hook. All instream anchors should have a floating anchor buoy or other identifying mark. 								

This is a partial listing of some of the proprietary products available:

- Brockton Equipment markets and customizes the Siltdam in a number of ways. Vinyl-cased polyethylene flotation logs are attached to a skirt of woven polypropylene, and the skirts are available in different permeabilities and lengths. A sealed pocket at the bottom of the skirt holds a galvanized steel chain for ballast.
- Indian Valley Industries produces turbidity curtains to specification, depending on water-flow rate, depth of channel, desired filtering properties and, if necessary, tide action. The 50-ft standard curtains have grommets along the bottom skirt edge so they can be anchored to the channel bottom.
- The SiltMaster, a floating turbidity curtain manufactured by Parker Systems Inc. of Chesapeake, VA, comes with various skirt lengths. Similar to the Siltdam, it has a chain ballast at the bottom of the skirt. The skirt is of either a permeable geotextile fabric to allow water but not silt to pass through or, if specified, an impermeable vinyl or urethane-coated fabric.

Construction Guidelines

For manufactured products, install as per manufacturer's instructions.

- Turbidity curtains should be installed parallel to flow of the watercourse allowing for 10 to 20% variance in the straight-line measurements. Allow for at least 50 ft between joints in the curtain and no more than 100 ft between anchor or stake locations.
- Instream sediment mats can be aligned either direction along the watercourse bottom, as long as upstream mat overlaps the downstream mat (like a drainage ditch erosion control blanket installation). Ensure the upstream edge is firmly trenched in to prevent flows from going under the mat. Mats should cross the entire stream and be staked or use stones to keep the mat in place. Follow the manufacturer's specifications for length of mat needed for the site's flow rate.
- Turbidity curtains should extend the entire depth of the watercourse. In significant wind or wave action areas a 10- to 12-ft depth is the most practical due to fabric and mooring anchor strain from the heavy-water and sediment loads.
- Soils should be allowed to settle for a minimum of 6 to 12 hours prior to BMP removal and cleaning. All cleaning operations should also use good sediment control practices. Consider sizing materials adequately to allow for maintenance only prior to removal, and not throughout project.
- In areas heavily impacted by wind generated wave action; turbidity curtains should have slack to follow the rise and fall of the water level without submerging. Curtains should also maintain adequate flow through, usually by using heavier woven fabric from the bottom sections of the curtain.
- Setting the upstream anchor points first, then unfurling the fabric and letting the flow carry the fabric downstream or to vertical position achieves best installation.

**Maintenance
Removal**

Follow manufacturer instructions for fabric and material repair.

- All materials should be removed at low flows and in such a fashion as to scoop and trap sediments within the fabric. The removal area should be clear of any obstructions that could tear the fabric. For mats, consider rolling up from the downstream end to trap silts in the mat roll. For curtains, consider pulling the bottom line and top lines in together like a parachute to pull soils ashore.
- Spoils should be dewatered and reused on a nearby bank or upland area needing additional fill. Controls should be in place to ensure that the sediment does not re-enter the waterway.