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Product Solutions for a Cleaner World

TURBIDITY CONTROL BARRIER

Typical Assembly And Installation Instructions

*This is a basic guide to installing **Granite Silt Barriers** (www.SiltBarriers.com). It is in no way comprehensive and is limited to generic information as each site is unique, along with contractor ability and equipment available for use. Please contact us to discuss designs, layout and performance requirements.*



Type 1 DOT Silt Barrier

Several sections of **Granite Environmental, Inc.** Turbidity Control barriers can be attached together to create a total length of curtain required for the application.

Attachment of turbidity barrier sections involves a three step procedure. Each section of curtain is bundled separately when shipped from the factory. The bundles are secured with vinyl straps and either placed on pallets, in boxes or directly on to a commercial truck or container. The skirt of the silt barrier is reefed or furled to the flotation with light twine. **DO NOT CUT THE TWINE REEFING LINES UNTIL THE CURTAIN IS TOWED AND ANCHORED IN THE DESIRED POSITION.**

If there is adequate space along the shoreline of the work site, you may place each bundle approximately 15-20 inches apart. Cut or untie the vinyl bundle straps.

Please Note at the bottom end of medium and heavy duty barriers, the chain ballast is secured to a triangular stainless steel stress plate. On one end of the section there is a heavy duty snap hook. On the other end, there is a steel ring. It is important that the end of one section's hook will attach to the next section's ring. On light duty and economy type II barriers there are no bottom plates. Shackles

perform the same function. Cut one or maybe two, of the reefing lines in order to extend the skirt for complete fastening.

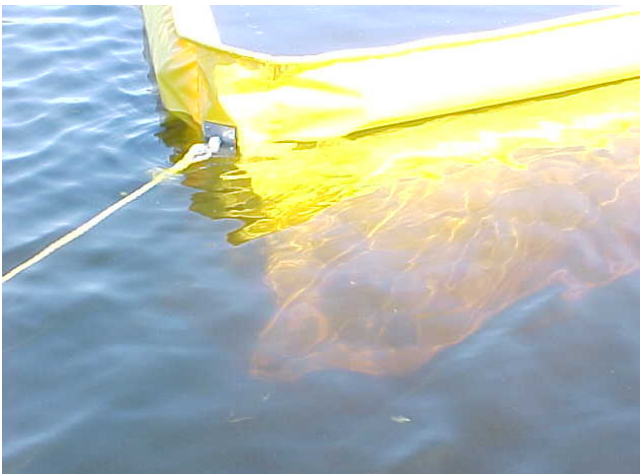
After all steps of connection are complete, the skirt can be reefed again (tied with light cord) prior to towing into the water.

- STEP 1.** Attach the chain via shackle or snap hook (as applicable for design utilized) for section 1 to the chain or ring of section 2.
- STEP 2.** Slide together the aluminum extrusion end connectors for Type 2 and Type 3 barrier (Skip this step for Type 1 Silt Barriers). Insert the toggle pin.
- STEP 3.** Using the rope ties or heavy duty zip ties (or suitable substitute), tie one grommeted eye of one section to the aligned eye of the mating section. Repeat for entire skirt depth.

The curtain should be furled/reefed up to the flotation by tying a reefing line around the flotation log. This will make it easier to maneuver when towing to position. When towing the curtain into the water, take care not to allow the curtain to become twisted. Avoid sharp objects or areas which may damage the curtain when deploying it.



River Dredging



Anchored with Fluke Anchor



Deploying Silt Curtain with Small Boat

Anchoring:

It is normal for marine turbidity barrier installations to use a site plan with designated anchor points denoted, or if anchoring a customized system, to utilize GPS coordinates to place the Anchors accurately.

The placement and style (i.e. flukes, Navy, mushroom, pyramid styles, etc) of anchors will very much depend on local conditions, current and curtain performance requirements. Once in place then the curtain is deployed and attaches to the shock absorption buoys via a short painter line (included with anchor systems provided by Granite Environmental, Inc).

The layout, load design and attachment of anchor systems is typically performed by contractor on-site with assistance or input from customer engineers, manufacturer or qualified representative depending on the project complexity.

Anchor points are provided at each joint (end) of each section, in line with the tension cables (if so equipped) and also normally 50' OC on Type 2 and Type 3 turbidity barrier. The Type 1 style only attaches at section ends to reinforced grommets.

Once the barrier is positioned and anchored in the desired area for maximum resource protection and conditions, the skirt may be unfurled by cutting the light skirt reefing lines. It is suggested that a length of fltable (polypropylene) line be tied to the grommets in the chain pocket. This Furling/Reefing Line System can be added when the Turbidity Barrier is manufactured at additional cost. Reefing lines allows for the skirt to be raised, making it easier to move or reposition an installation.

Marine Lighting/Navigation

We recommend marker buoys, navigational aids and lights to warn other water craft if hazards. Local regulatory agency, USACE or Coast Guard can provide performance requirements.



Typical Maintenance

A scheduled visual inspection is required to determine if all components are working as intended. Special attention needs to be given to all load carrying components (i.e. cables, shackles anchors and connectors). These should be attached correctly and free to function as intended. Periodic re-tensioning of the cables and anchors may be required and GPS readings (if used) should be taken if it is not able to visually determine correct location.

Scheduled cleaning is desirable to ensure that the barriers/curtains maintain their integrity. All marine growth (algae, molluscs, etc) should be brushed off with stiff bristled broom or pressure washers by divers (if in water). Sections can be removed and swapped out with spare section to enable cleaning on shore if so required.

When water elevation changes occur, adjustments may need to be made to anchor and mooring lines, to ensure they do not get submerged and cause barrier failure. (Installation should account for high water conditions and waves)

Granite Environmental, Inc recommends following all installation maintenance and emergency handling instruction to achieve best use and results from the system.



Type 2 Silt Barrier in Action

The following is an example of **typical equipment**, services and materials that **may be** needed for installation- this is by no means comprehensive;

- Prior to equipment arrival shoreline anchor points or posts are to be identified and set as sturdy termination points for the bridle cable ends. These should be capable of holding horizontal load of equal to the TENSION CABLE load, plus a minimum safety factor of 1.2. This is something that owner engineers can design and have put in place by contractors.
- Anchors to be made or available prior to barrier arrival. This will save installation time and money due to delays.
- Minimum of 6 Personnel are needed for barrier and anchor installation.
- Each section weighs approximately from 200-1000 lbs depending on size.

Equipment typically required by contractor/owner

- A) Forklift or similar to move unload equipment.
- B) Radios for communication.
- C) Hand tools and personnel.
- D) 2 each work boats (preferably one with a flat bottom and the other with a V-hull), Typically a minimum 21' Long, and 8 feet wide, stable, with minimum 90 HP motor on the back. Equipped with a strong centrally located towing point. The boats should be capable of handling the anchors be equipped with a small derrick crane to raise/lower the anchor blocks into place- this depends on anchor size.
- E) Safety equipment & First Aid box
- F) Installation instructions, permits and site plan.

Have questions? Need technical Assistance?

Please call us @ +1 - 772-646 0597

www.TurbidityBarriers.com or www.SiltBarriers.com

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