

Special Specification 5129

Floating Turbidity Barrier



1. DESCRIPTION

Furnish, install, maintain, and remove floating turbidity barrier (FTB) to minimize transport and accomplish the isolation of disturbed materials resulting from construction operations. This Item will govern for the furnishing of all labor, equipment, and materials necessary to complete this work at the locations as shown on the plans, or as approved. The FTB must be selected in accordance with the following Specification and the Floating Turbidity Barrier details shown on the plans. The FTB and installation must be enough for a flow condition where the velocity of flow may reach 5 ft. per second (or a current of approximately 3 knots).

2. MATERIALS

The FTB supplied must be a standard manufactured product, selected based on site-specific criteria in accordance with manufacturer's specifications. All materials must be corrosion resistant. Materials at the water surface must not degenerate when exposed to sunlight, oils, and petroleum products. The Contractor must supply documentation from the manufacturer to demonstrate the FTB meets the requirements of this Specification.

The FTB consists of a PVC coated nylon section and a geo-synthetic barrier or curtain section, load line, mooring lines, adjustment lines and tie-downs, floatation, ballast, anchors, mooring buoys, and lighted buoy.

- 2.1. **Turbidity Barrier or Curtain.** The Turbidity Barrier or curtain geo-synthetics must have the following properties:
- the top section must consist of an 18-22 oz. PVC coated nylon fabric. It must be a bright yellow or orange color to increase visibility;
 - the bottom section must consist of a geo-synthetic with a filtration Apparent Opening Size (AOS) of 0.220 mm maximum for non-woven geotextiles, and AOS of 0.425 mm maximum for woven textiles, when tested in accordance with ASTM D 4751-99a;
 - be a non-woven or woven material such that the opening size cannot be enlarged under pressure or by being snagged; and
 - the turbidity barrier or curtain must have a minimum grab strength of 300 psi when tested in accordance with ASTM D 4632-91.
- 2.2. **Floatation.** Turbidity barrier or curtain floatation material must be a closed, cell solid foam material which has enough buoyancy to provide the curtain with continuous support and a minimum of 6 in. freeboard.
- The sections of floatation must be installed such that they cannot move along inside the sleeve, and the space between sections must not be more than twice the thickness of the floatation material.
- 2.3. **Load Lines.** Load lines must be minimum 5/16 in. vinyl coated galvanized aircraft cable with 9800 lb. breaking strength. The load line must have galvanized connectors with tool free disconnect.
- 2.4. **Mooring Lines.** Adjustment lines must be minimum 1/2 in. nylon rope.
- 2.5. **Adjustment Lines and Tie Downs.** Adjustment lines and tie down lines must be minimum 1/2 in. nylon rope.
- 2.6. **Ballast.** Ballast must be minimum 5/16 in. galvanized steel chain.

- 2.7 **Anchors.** Turbidity barrier or curtain anchors must have enough mass and spaced to secure the barrier as recommended by the manufacturer depending on the current velocities.
- 2.8 **Mooring Buoys.** Mooring buoys must have provisions for the mooring line to be securely attached with enough buoyancy to remain afloat under normal load conditions.
- 2.9 **Lighted Buoy.** Lighted buoys must be manufactured self-contained buoys with automatic flashing lights (on at dusk, off at dawn) installed at 100 ft. on center along the barrier, when shown on plans.

3. CONSTRUCTION

Construction methods, workmanship, equipment, and materials used must conform to the various items of the standard specifications which govern the items of work to be performed under this Contract and as specified on the plans.

Place the FTB before commencement of any work that could impact the area of concern. Ensure that the type of barrier used and the deployment and maintenance of the barrier will minimize dispersion of turbid water from the excavation and dredging area. Maintain FTB until sediment generating activities have ceased, and the area has been stabilized.

Operate the turbidity barrier in such a manner to avoid or minimize the degradation of the water quality of surrounding waters. When located adjacent to a shoreline or bank, the ends of the curtain will be secured to fully enclose the area.

The barrier must have enough ballast to anchor the barrier along the channel bottom.

4. MEASUREMENT

This Item will be measured by the linear foot of barrier constructed.

5. PAYMENT

- 5.1. **Furnish and Install.** The work performed and materials furnished, in accordance with this Item and measured as provided under "Measurement," will be paid for at the unit price bid for "Floating Turbidity Barrier (Furnish and Install)." This price is full compensation for all materials, tools, equipment, labor, and all incidentals necessary to complete the work, including installation, and adjustments as needed during operation.
- 5.2. **Remove.** The work performed and materials furnished, in accordance with this Item and measured as provided under "Measurement," will be paid for at the unit price bid for "Floating Turbidity Barrier (Remove)." This price is full compensation for all materials, tools, equipment, labor, and all incidentals necessary to complete the work including removal and disposal.