

Special Specification 5100

Floating Turbidity Barrier



1. DESCRIPTION

Furnish, install, maintain and remove floating turbidity barrier (FTB) to minimize transport and accomplish the isolation of disturbed materials as a result of 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 by the Engineer. The FTB must be manufactured in accordance with the following specification and installed as shown on the plans and in the manufacturer's specifications. The barrier and installation must be sufficient for project site conditions, including water flow velocity and wave activity. Design criteria must meet Texas Pollutant Discharge Elimination System (TPDES) standards for erosion control and water quality, similar to other erosion control devices.

2. MATERIALS

The floating turbidity barrier supplied must be a standard manufactured product. All materials must be corrosion resistant. Materials at the water surface must not degenerate when exposed to sunlight, oils, and petroleum products. The manufacturer must supply a certification that the product supplied meets the requirements of this specification.

The floating turbidity barrier consists of a PVC coated nylon section and a geo-synthetic barrier/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 having 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.
 - The turbidity barrier/curtain must have a minimum grab strength of 300 psi when tested in accordance with ASTM D 4632-91.
- 2.2. **Floatation.** Turbidity barrier/curtain floatation material must be a closed cell solid foam material which has sufficient 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/curtain anchors must have a sufficient 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 and be sufficiently buoyant 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 barrier 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.

Operate the turbidity barrier in such a manner to avoid or minimize the degradation of the water quality of surrounding waters.

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

Implement no-wake zones in the vicinity of the barrier while in use.

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, 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.