

SCOPE SPECIFICATIONS
FOR
ELASTEC/AMERICAN MARINE, INC.
FLOW CONTROL CURTAINS
AND
FLOATING LAGOON BAFFLES

Specification

Floating Lagoon Baffle (Pond Flow Control Curtain)

1.0 General

1.1 The water treatment pond floating baffle system described herein shall be factory fabricated and specifically designed to satisfy the flow control requirements of the subject lagoon. The baffle system shall be delivered to the site with each piece completely assembled, requiring no field fabrication. All materials of the baffle system shall be new, marine grade quality designed for long period exposure to the environmental conditions typical of the installation site.

2.0 Manufacturer

2.1 The baffle system shall be manufactured by American Marine, Inc. of Cocoa, Florida, or shall be equivalent in all respects.

2.2 Alternate manufacturers shall have:

- a) At least 10 years experience in the design and fabrication of industrial grade floating baffles utilizing thermal and dielectric seaming techniques.
- b) Designed and delivered at least 100 floating baffle systems for industrial or municipal lagoon applications.

3.0 Components

3.1 Fabric

3.1.1 Baffle fabric must have excellent U.V. and weathering resistance, and must be resistant to any chemical solutions inherent in the lagoon. The fabric shall possess significant tensile and tear strength. (See fabric specifications and samples).

3.1.2 The recommended baffle fabric, recently developed specifically for floating WWTP lagoon use, is Seaman corp. XR-5 Style 6730.

3.1.3 Alternate fabrics are:

- a) 22 oz. PVC
- b) 23 oz. Urethane
- c) 30 oz. XR-5 Style 8130 (for potable water application)

If unusually high concentrations of certain hazardous materials enter the lagoon, samples of the proposed fabric should be subjected to the influent before selection as the fabric for the baffle system.

3.2 Flotation

- 3.2.1 A series of closed cell, marine grade, polystyrene foam logs shall be completely sealed, individually, into an upper flotation collar in the fabric of the baffle. Depending on the depth of the baffle, and the wind and wave fetch on the lagoon, the logs shall be 4 to 12 inches in diameter and 6 to 9 feet in length. Each log shall be sealed into its chamber with appropriate space between each segment to facilitate folding for shipment and enhance conformance to wave action.

3.3 Ballast

- 3.3.1 Ballast and bottom tension are provided by a 1/4" to 1/2" galvanized steel chain seamed into a double fabric pocket at the bottom edge of the baffle. It shall be attached, on each end of the baffle, to the end plates which transfer tension loads to the shore anchors.
- 3.3.2 At appropriate intervals, along the length of the chain ballast, bottom auxiliary anchor attachment points consist of a loop (approximately 6 inches in diameter) of stainless steel cable which passes through grommet reinforced holes in the chain ballast pocket and through a link in the ballast chain. Typically, bottom anchors can consist of rubber tires filled with concrete with handling and anchor points attached.

3.4 Top Tension Member

- 3.4.1 For most baffles exceeding 100 feet in total length, an upper tension cable shall be seamed into the fabric directly beneath or directly above the flotation. The cable shall be stainless steel, 1/4" to 3/8" diameter, and shall be sheathed in a vinyl casing. The cable shall be secured to the baffle's end connector plates, which transfer tension loads to the shore anchors.

3.5 Skirt Depth

- 3.5.1 The depth and shape of the skirt is to be determined by the water depth and the bottom profile of the lagoon. The skirt depth shall be about three (3) inches greater than the depth of the water. Baffles installed in lagoons where the water level varies shall be shaped to conform to the lagoon when the water level is at its highest. The baffle should also be designed to allow the flotation to lie flat on the exposed banks when the water level drops so as to preclude high winds from getting under any skirt areas, which might be exposed above water, and lifting the baffle up out of the water. Baffle side slopes are to be designed to conform to the side slope angles of the lagoon.

3.6 Connectors

- 3.6.1 The baffle end connectors shall consist of pairs of stainless steel plates bolted together so as to firmly clamp doubled over and bolt roped ends of the fabric. The ballast chain and top tension cables shall be secured to these plates and the tension loads of the fabric, the ballast chain and the top tension cable transferred through the plates to stainless steel

shore anchor cables also secured to the plates. The length of the shore anchor cables may be varied so as to impart the appropriate amount of overall tension the baffle as well as to allow the baffle to be adjusted for variations in water level of the lagoon.

3.7 Flow thru Windows (if required)

3.7.1 Where required, flow thru windows shall be installed in the baffle's skirt. Location, number and size of the windows will depend on the flow characteristics of the lagoon. All windows are to be reinforced with a double layer of fabric around the perimeter of the opening and employ bias cut corner reinforcements.

3.7.2 Flow thru window size and/or number is determined by the volume and rate of water flow through the lagoon. A minimum opening size of one (1) square foot of opening per 30 gallons of water per minute is recommended.

3.8 Mid Span Stabilization

3.8.1 If individual baffles reach several hundred feet in length it is often appropriate to provide surface anchor points away from the shoreline to prevent winds normal to the baffle direction from excessively distorting its track across the lagoon. Such anchor points shall be provided, where necessary, by pairs of back-to-back stainless steel plates, backed up with 1/8 inch neoprene gaskets, bolted to the fabric between flotation segments and carrying stainless steel eyebolt/eyenut combinations to which buoyed mid point anchors may be attached.

4.0 Installation

4.1 The baffle sections should arrive at the site with the skirt reefed to the flotation with light lines to simplify installation. Each baffle section shall be marked at the factory as to its proper orientation in the lagoon to simplify and expedite the installation.

For larger baffle systems it is desirable to have the manufacturer deliver the system to the site using his own trucks and personnel who can provide coordination with and instruction for the installation crew.

5.0 Warranty

5.1 The baffle shall be warranted for a period of two (2) years against defects in materials and workmanship.

A prorated, 10-year warranty is available from the Seaman Corporation, Knoxville, Tennessee, the manufacturers of Shelterite.