

FRP Weirs & Baffle Standard Specification-Section-06000

1. General Information

The information related to providing all labor, equipment and materials required to install fiberglass weir plates, scum baffles, mounting brackets, lap plates. Fabrication shall be in strict compliance with the American Water Works Association procedures set forth in standard ANNSI/AWWA F102-91

2. Physical properties

Property at 70°F	Value	Test Method
Tensile Strength	15,000 psi	ASTM D 638
Flexural Strength	20,000 psi	ASTM D 790
Flexural Modulus of Elasticity	1,000,000 psi	ASTM D 790
Barcol Hardness (min)	35	ASTM D 2583
Water Absorption - % (max)	0.2	ASTM D 570
Notched Izod Impact Strength (ft-lb/in)	10	ASTM D256

Table 1: Fiberglass Laminate Mechanical and Physical Properties

3. Materials

3.1 Resin

The resin shall be a commercial grade polyester thermosetting resin.

3.2 Glass Reinforcement

The reinforcing materials used shall be Type E glass mat, with chrome or saline finish and a styrene-soluble binder compatible with the resin. Surfacing veil shall be Type C veil, with Styrene-soluble binder compatible with the resin. All plates shall have a glass content of 30%, +/-2%.

3.3 Ultraviolet Resistance

0.25% UV stabilizers are required in all laminates exposed to UV light.

3.4 Manufacturing Procedures

- The matched-die molding process shall be used to produce fiberglass-reinforced plastic molded parts with smooth resin-rich surfaces and edges, dimensional accuracy, and consistency. Weir plate notches shall be molded within dies to ensure resin-rich edges and notches for increased corrosion and weather resistance. Weir plates and scum baffle plates produced from fabricated plate stock with cut edges and notches will not be acceptable. All cut edges shall be sanded and sealed with non-air-inhibited resin to ensure edges are completely sealed and to prevent water and chemicals from penetrating the laminate.
- All weir plates shall be attached to the concrete on curve surfaces 2 feet on center with $\frac{1}{2}$ " x $5\frac{1}{2}$ " 316 stainless steel anchor bolts & straight wall surfaces 12 inches on center.
- Scum baffle should be attached with 6" shoe bracket assembly 4 feet on center.

4. Design Criteria

4.1 Weir plates shall be a nominal $\frac{1}{4}$ inch thick and shall have 90 degree V-notches or Straight edge.

Notches - 2", 2 $\frac{1}{2}$ " or 3" deep by 90 degrees on 6 inch centers.

Height - 9", 10" or 12"

Length - Nominal 12 feet long.

Each weir plate shall be provided from the manufacturer with oversized mounting slots to allow a minimum of 2" of vertical adjustment. For curved walls, these slots shall be located a maximum of 24 inches on center. For straight walls, slots shall be located a maximum of 12 inches on center. The ends shall be joined with 6" wide FRP joint plates to allow for horizontal expansion.

4.2 Scum baffle plates shall be a nominal $\frac{1}{4}$ " inch thick by 12 inches wide & 12 feet long. Mounting holes shall be counter-sunk to a depth that allows the flat head bolts to be flush or below the surface. Spacing of holes for mounting brackets shall be a maximum of 48 inches for curved walls, and a maximum of 24 inches for straight walls. Scum baffle mounting brackets shall have a width of not less than 3 inches, a base length of not less than 6 inches, and a depth of not less than 6 inches. Brackets shall be fabricated from fiberglass-reinforced material with a nominal thickness of $\frac{1}{4}$ inch.

5. System Manufacture

1. EDGENG

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Or approved equal.

2. If Contractor wished to furnish an alternate system manufacturer, Contractor shall first make written application to Engineer for acceptance thereof, certifying that the proposed substitute will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified and be suited to the same use as that specified. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of other contractors affected by the resulting change, all of which will be considered by Engineer in evaluating the proposed substitute.

6. Submittals

The final project approval will be made after all the drawings, specifications and data are reviewed precisely. The shop drawings shall be drawn of the required projects according to all the dimensions, anchor locations and the location area dimensions.

Specifications for the relevant project in all areas of components shall be provided. Details of the major fabricated components showing the arrangement of components and labeled with component sizes and materials of construction shall be submitted. Structural calculations for all components shall be submitted. Manufacturer's commended procedures for job site storage of equipment, handling, and erection shall be submitted.

7. Quality Assurance

- A. Manufacturer should be able to confirm five years of hand-in experience on fabricating FRP Weirs & Baffles and shall be able to document fabricated FRP Weirs & Bafflesystems of scope and similar type to the requirements of the customers.
- B. All fabrication shall be carefully inspected at the factory by inspectors who shall use whatever means necessary to assure the proper fit of all field connections and compliance with all material and fabrication requirements of the specifications.

8. Warranty

Minimum of one year for the materials and for the workmanship of the fabricated product, after the installation with a maximum of eighteen months would be the general warranty for these Weirs & Baffles.

9. Installation, Storage, Handling, and Maintenance

The manufacturer shall provide detailed written instructions for the installation, long term Storage, handling, and maintenance for the products provided.