

ENGINEERING SPECIFICATION
FIBERGRATE[®] WEIR PLATES AND SCUM BAFFLES

SECTION 11204

FIBERGLASS REINFORCED PLASTIC WEIR PLATES AND SCUM BAFFLES

PART 1 - GENERAL

1.1 SCOPE OF WORK

- A. The CONTRACTOR shall furnish, and install fiberglass reinforced plastic (FRP) Weir Plates and Scum Baffles with all appurtenances, accessories and incidentals necessary to produce a complete, operable and serviceable installation as shown on the Contract Drawings and as specified herein, and in accordance with the requirements of the Contract Documents.

1.2 REFERENCES

- A. The publications listed below (latest revision applicable) form a part of this specification to the extent referenced herein. The publications are referred to within the text by the designation only.

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) Test Methods:

- ASTM D 638 Tensile Properties of Plastics
- ASTM D 790 Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials
- ASTM D 2583 Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor
- ASTM D 256 Pendulum Impact Resistance of Notched Specimens of Plastics
- ASTM D 570 Water Absorption of Plastics

1.3 CONTRACTOR SUBMITTALS

- A. The CONTRACTOR shall furnish shop drawings of the weir plates, scum baffles, and accessories in accordance with the provisions of this Section.
- B. The CONTRACTOR shall furnish manufacturer's shop drawings clearly showing material sizes, types, styles, part or catalog numbers, complete details for the fabrication and erection of components including, but not limited to, location, lengths, type and sizes of fasteners, and connection details.
- C. The CONTRACTOR shall submit the manufacturer's published literature, corrosion resistance tables, certificates of compliance, and test reports as applicable.
- D. The CONTRACTOR may be requested to submit sample pieces of each item specified herein for acceptance by the ENGINEER as to quality and color. Sample pieces shall be manufactured by the method to be used in the WORK.

1.4 QUALITY ASSURANCE

- A. All items to be provided under this Section shall be furnished only by manufacturers having a minimum of ten (10) years experience in the design and manufacture fiberglass reinforced plastic systems.
- B. Manufacturer shall offer a 3 year limited warranty on all FRP products against defects in materials and workmanship.
- C. Manufacturer shall be certified to the ISO 9001-2008 standard.

1.5 PRODUCT DELIVERY AND STORAGE

- A. Delivery of Materials: Manufactured materials shall be delivered in original, unbroken pallets, packages, containers, or bundles bearing the label of the manufacturer.
- B. Storage of Products: All materials shall be carefully handled to prevent them from abrasion, cracking, chipping, twisting, other deformations, and other types of damage. Adhesives, resins and their catalysts are to be stored in dry indoor storage facilities between 70 and 85 degrees Fahrenheit (21 to 29 degrees Celsius) until they are required.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Weir Plates and Scum Baffles shall be Fibergrate[®] as manufactured by

Fibergrate Composite Structures Inc.
5151 Belt Line Road, Suite 1212
Dallas, Texas 75254-7028 USA
(800) 527-4043 Phone (972) 250-1530 Fax

Website: www.fibergrate.com
E-mail: info@fibergrate.com

2.2 GENERAL

- A. All FRP items furnished under this Section shall be composed of fiberglass reinforcement and resin in qualities, quantities, properties, arrangements and dimensions as necessary to meet the design requirements as specified in the Contract Documents.
- B. Except for components fabricated from pultruded sections, fiberglass reinforcement shall consist of alternating layers of chopped strand mat and woven roving in sufficient quantities as needed by the application and/or physical properties required.
- C. Open molded components shall include a resin rich layer 0.01" – 0.02" in thickness, reinforced with a Type C surface veil, on the outer surface of the Weir Plates and Scum Baffles.

- D. Resin system: The resin system used in the manufacture of the Weir Plates and Scum Baffles shall be general purpose thermosetting polyester suitable for use in submerged wastewater treatment applications. The resin should also contain UV stabilizers to reduce damage from UV light.
- E. All finished surfaces of FRP items and fabrications shall be smooth, resin-rich, free of voids and without dry spots, cracks, crazes or unreinforced areas. All glass fibers shall be well covered with resin to protect against their exposure due to wear or weathering.
- F. All bolts and concrete anchors shall be manufactured of AISI 316 stainless steel.

2.3 FRP WEIR PLATES

- A. Manufacture: Weir Plates, lap plates, and washers shall be manufactured using an open molding process.
- B. Weir Plates are not to exceed maximum length of 12'-0".
- C. Weir Plate nominal thickness is to be 1/4" \pm 1/16".
- D. Weir Plates shall be XX inches in height with XX inch deep, with 90 degree vee notches spaced at XX inches on center.
- E. Weir Plates are to feature oversized mounting holes which allow for at least 2 inches of vertical and horizontal alignment. They are to be installed with 1/2 inch diameter 316 stainless steel anchor bolts and 5 inch diameter FRP washers to cover the mounting holes.
- F. The ends of the Weir Plates are to be secured to each other using 6" wide lap plates. The lap plates are to be secured using 1/2" diameter 316 stainless steel bolts in slotted holes which allow for horizontal adjustment of the Weir Plates.
- G. For installations on straight surfaces, the Weir Plates are to be anchored at a maximum of 12" on center. For curved surfaces, the Weir Plates are to be anchored at a maximum spacing of 24" on center.
- H. Color to be blue green.
- I. All cut edges and drilled holes are to be sealed following the manufacturers recommended procedures.
- J. Substitutions: Other products of equal strength, stiffness, corrosion resistance and overall quality may be submitted with the proper supporting data to the engineer for approval.

2.4 FRP SCUM BAFFLES

- A. Manufacture: Scum Baffles and lap plates shall be manufactured using an open molding process. The Scum Baffle brackets shall be fabricated from pultruded structural shapes.
- B. Scum Baffles shall be 12 inches in height and not exceed a maximum of 12'-0" in length.
- C. Scum Baffle nominal thickness is to be 1/4" \pm 1/16".

- D. Scum Baffle brackets are to be fabricated from 6" x 6" x 3/8" dark gray isophthalic fire retardant pultruded FRP angles. The brackets are to be fabricated such that they allow for 1-1/2 inches of vertical, horizontal, and radial adjustment. The brackets are to be spaced at a maximum of 48 inches on center and installed using 1/2 inch diameter 316 stainless steel anchor bolts.
- E. The ends of the Scum Baffles are to be secured to each other using 6 inch wide lap plates. The lap plates are to be secured using 1/2 inch diameter 316 stainless steel bolts in slotted holes which allow for horizontal adjustment of the Scum Baffles.
- F. Color of Scum Baffles to be blue green. Scum Baffle brackets are to be dark gray.
- G. All cut edges and drilled holes are to be sealed following the manufacturers recommended procedures.
- H. Substitutions: Other products of equal strength, stiffness, corrosion resistance and overall quality may be submitted with the proper supporting data to the engineer for approval.

PART 3 - EXECUTION

3.1 INSPECTION

- A. The contractor shall field verify all existing dimensions and conditions and verify that they are suitable for installation of the Weir Plates and Scum Baffles. Any unsatisfactory site conditions are to be corrected prior to installation.
- B. Shop inspection is authorized as required by the Owner and shall be at Owner's expense. If a shop inspection is required, the fabricator shall give ample notice to Contractor prior to the beginning of any fabrication work so that an inspection may be conducted.

3.2 INSTALLATION

- A. Contractor shall install the Weir Plates and Scum Baffles in accordance with manufacturer's shop drawings that have been released for construction by the owner.
- B. Install Weir Plates and Scum Baffles without excessive twist or warp. Weir Plates and Scum Baffles are to be carefully leveled to the elevations shown and within the tolerances specified by the contract drawings.
- C. When required, field cut and drill fiberglass reinforced plastic products with carbide or diamond tipped bits and blades. Seal cut or drilled surfaces in accordance with manufacturer's instructions. Follow manufacturer's instructions when cutting or drilling fiberglass products or using resin products; provide adequate ventilation.