

SECTION 44 42 28
WEIR AND BAFFLE PLATES

PART 1 GENERAL

1.01 REFERENCES

A. The following is a list of standards which may be referenced in this section:

1. American Water Works Association (AWWA): F102, Matched-Die-Molded, Fiberglass-Reinforced Plastic Weir Plates, Scum Baffles, and Mounting Brackets.
2. ASTM International (ASTM):
 - a. A167, Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip.
 - b. A193/A193M, Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications.
 - c. A194/A194M, Standard Specification for Carbon and Alloy Steel Nuts for Bolts for High Pressure or High Temperature Service, or Both.
 - d. A276, Standard Specification for Stainless Steel Bars and Shapes.
 - e. B209, Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.
 - f. B308/B308M, Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles.
 - g. C581, Standard Practice for Determining Chemical Resistance of Thermosetting Resins Used in Glass-Fiber-Reinforced Structures Intended for Liquid Service.
 - h. C920, Standard Specification for Elastomeric Joint Sealants.
 - i. D256, Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
 - j. D570, Standard Test Method for Water Absorption of Plastics.
 - k. D638, Standard Test Method for Tensile Properties of Plastics.
 - l. D790, Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.
 - m. D2583, Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor.

1.02 SUBMITTALS

A. Action Submittals:

1. Shop Drawings:
 - a. Detailed description of laminate and type of reinforcing to be used.
 - b. Manufacturer's drawings showing dimensions of the items and accessories being provided.
 - c. Complete information regarding specific resin to be used.
2. Sample: Manufacturer's 6-inch square sample of fiberglass reinforced plastic laminate of same construction, nominal thickness, and color as materials specified.

B. Informational Submittals:

1. Manufacturer's Certificate of Compliance, in accordance with Section 01 61 03, Equipment - Basic Requirements, and stating the following:
 - a. Reinforcing material used will provide suitable chemical resistance.
 - b. Resin is suitable for the environmental conditions intended and the fabrication technique proposed.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Site properly packaged for ease of handling and to minimize damage during shipping.
- B. Handling and storage of items provided hereunder shall be in strict accordance with manufacturer's printed instructions. Care shall be taken not to damage components and accessories.

PART 2 PRODUCTS

2.01 GENERAL

- A. Like items of equipment specified herein shall be the end products of one manufacturer in order to achieve standardization of appearance, operation, maintenance, and manufacturers' services.
- B. Coordinate scum baffle configuration with equipment, such as a scum skimmer, that will physically interface with baffle to ensure proper functioning of system.

2.02 MANUFACTURERS:

- A. MFG Water Treatment Products Company, Union City, PA.
- B. Or equal.

2.03 PHYSICAL CHARACTERISTICS

A. Fiberglass:

1. Match-die molded fiberglass, 1/4-inch minimum thickness, in accordance with AWWA F102.
2. Resin: Except as modified by this specification, conform to ASTM C581:
 - a. Type II: Premium grade and corrosion-resistant such as chlorendic polyester, vinyl ester, or bisphenol A fumarate polyester.
 - b. Shall not contain fillers or thixotropic agents, except as may be required, and shall conform to resin manufacturer's recommendations.
 - 1) Glass Content: 20 percent to 30 percent.
 - 2) Inorganic Fillers: No less than 40 percent of resin mixture.
 - c. Coloring: Pigmented gel-coat containing ultra-violet blocking agent; manufacturer's standard color.
 - d. Sufficient thixotropic agents to form a paste to seal machined or cut edges.
 - e. Reinforcement:
 - 1) Commercial grade glass, made specifically for use in fiberglass reinforced plastic, and having a coupling agent providing a compatible bond between the glass reinforcement and the resin.
 - 2) Weight and density may be varied to obtain necessary resin-glass ratio and structural strength for the specified service.
 - f. Mold Surfaces: Reinforced with surfacing mat, followed by minimum of 3 ounces of chopped strand mat, in a minimum of two layers, with no other product introduced between layers.
 - g. Exposed Surfaces:
 - 1) Resin-rich, 10 mils to 20 mils thick with Type C surfacing mat, silane finish, and styrene-soluble binder.
 - 2) Glass fibers shall not be exposed.
 - 3) Chopped strand and chopped strand mat shall be Type E glass with silane finish and styrene-soluble binder.
 - 4) Minimum Glass Content: 30 percent by weight.
 - h. Allowable cosmetic defects: As defined in AWWA F102.
 - i. Final Laminate:
 - 1) Thickness: Within plus or minus 10 percent of nominal laminate thickness.

- 2) Tolerance: Plus 1/16 inch; minus 0 inch of minimum specified thickness.
- 3) Void Content (Completed Laminate): Maximum 2-1/2 percent of laminate by volume.

B. Aluminum:

1. Plate, Baffles, and Support Material: Aluminum, ASTM B209 and ASTM B308/B308M, minimum 5/16 inch thick.
2. Fasteners: ASTM A193/A193M and ASTM A194/A194M, Type 316.

C. Stainless Steel:

1. Plate, Baffles, and Supports: ASTM A167 and ASTM A276, minimum 1/4 inch thick.
2. Fasteners: ASTM A193/A193M and ASTM A194/A194M, Type 316.

2.04 FUNCTIONAL CHARACTERISTICS

A. Fiberglass: None.

B. Aluminum: None.

C. Stainless Steel: None.

2.05 PERFORMANCE CHARACTERISTICS

A. Fiberglass:

1. Laminates:

Property (70 Degrees F)	ASTM Standard	Value
Ultimate Tensile Strength, psi	D638	7,500 minimum
Flexural Strength, psi	D790	16,000 minimum
Water Absorption	D570	0.2% in 24 hours
Impact, foot-pounds	D256	10

2. Barcoal Hardness: ASTM D2583; minimum 90 percent of resin manufacturer's minimum specified hardness for cured, nonreinforced resin.

B. Aluminum: None.

C. Stainless Steel: None.

2.06 APPURTENANCES

- A. Gasket: Closed-cell neoprene, 50 durometer, 1/4 inch thick.
- B. Sealant:
 - 1. Polyurethane base, single-component, moisture curing, ASTM C920, Type S, Grade NS or P, Class 25.
 - 2. Capable of being continuously immersed in water.
 - 3. Manufacturers and Products:
 - a. Sika Chemical Corp.; Sikaflex-1a.
 - b. Mameco International; Vulkem 45.
- C. Anchoring: Type 316 stainless steel adhesive anchors as specified in Section 05 50 00, Metal Fabrications.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install in strict accordance with the manufacturer's written instructions.
- B. FRP Plates: Sand all cut edges or drilled holes greater than 3/8 inch in diameter, and seal with a nonair-inhibited resin solution, as recommended by resin manufacturer.
- C. Install weir plates such that weir crest is level with a maximum variation of 1/16 inch throughout its entire length.
- D. Gasket:
 - 1. Install between weir plate and concrete wall, extending from bottom of weir plate to the top of the wall.
 - 2. Gasket shall be continuous along entire length of weir plate.
 - 3. Joints: Butt type, using adhesive recommended by gasket manufacturer for submerged service.
- E. Sealant:
 - 1. Clean and prepare concrete and weir plate surfaces in accordance with sealant manufacturer's recommendations.
 - 2. Application:
 - a. In accordance with manufacturer's instructions.
 - b. Completely cover the interface between the weir plate and mounting surface over the full height of the weir plate.
 - c. Apply sufficiently to completely fill any gaps between the weir plate and the supporting wall surface.

- d. Clean excess sealant that is forced from between the weir plate and supporting wall as the plate is tightened against the wall surface to provide a neat installation.
- e. Clean all adjacent surfaces of smears or soiling.

3.02 TESTS AND INSPECTION

- A. In accordance with Section 01 91 14, Equipment Testing and Facility Startup.
- B. Functional Test: Demonstrate proper installation of weir plate for both water tightness and level, prior to placing unit into service, by filling unit with water to the weir crest elevation. Make adjustments as necessary to meet specification.

END OF SECTION