

SECTION 06 5102

FIBERGLASS LAUNDER COVERS

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PROJECT TEMPLATE: This document is provided as a specification template. Contact RPS Engineering at 847-931-1950 to work with our team on completing project-specific requirements and specifications for your facility.

PART 1 — GENERAL

1.1 DESCRIPTION

- A. Provide fiberglass launder covers and appurtenances for wastewater treatment clarifier applications, including all hardware and anchorage, as indicated and specified. All materials shall be suitable for continuous exposure to hydrogen sulfide (H₂S) gas and other corrosive byproducts of wastewater treatment environments.

1.2 REFERENCES

- A. American Society for Testing and Materials (ASTM) Publications:
 1. ASTM D256 — Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics.
 2. ASTM D570 — Test Method for Water Absorption of Plastics.
 3. ASTM D638 — Test Method for Tensile Properties of Plastics.
 4. ASTM D790 — Test Method for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

1.3 SEISMIC DESIGN REQUIREMENTS

- A. The Contractor shall conform to the seismic design requirements for this project and for the work of this specification section.
- B. Provide all equipment bases, anchorage, supports, and foundations designed in accordance with the seismic requirements indicated and specified.
- C. Seismic design parameters shall be per project location and jurisdiction in accordance with ASCE 7-22 and IBC 2021.
- D. Additionally, provide a certification for all equipment signed by a registered structural engineer licensed in the state where covers are installed, stating that computations were performed and that all components have been sized for the seismic forces specified and indicated. This certification is provided in the Manufacturer's Equipment Certification.

1.4 SUBMITTALS

- A. Submit the following in accordance with submittal procedures:
 1. Certified shop and erection drawings. Contractor shall submit electronic files of the proposed equipment in the capacity, size, and arrangement as indicated and specified.
 - a. Electronic files shall conform to the following minimum requirements:

1. Electronic Files: AutoCAD latest version, drawn to scale.
 2. Submit electronic files as part of the Shop Drawing submittal.
 3. Drawings shall include plan views, sectional views, title block, tag numbers, parts list (identifying each component), dimensions, connection sizes and types, and all details of all related items. Where certain information is proprietary and omitted, provide a statement indicating that the information is proprietary.
 4. Drawings shall be in conformance with all other requirements as specified.
2. Materials listing including resins and fiberglass content.
 3. Method of attachment, size of fasteners, and weights of each section.
 4. Shop drawing data for accessory items.
 5. Certified setting plans, with tolerances, for anchor bolts.
 6. Listing of reference installations with contact names and telephone numbers.
 7. Shop and field inspection reports.
 8. Shop test results: Certified test reports of the physical and mechanical properties as specified herein.
 9. Recommendations for short and long-term storage.
 10. Special tools.
 11. Number of service person-days provided and per diem field service rate.
 12. The latest ISO 9001 series certification or quality system plan.

1.5 QUALITY CONTROL

- A. Covers shall be the product of one manufacturer.
- B. Covers shall be manufacturer's standard cataloged product, modified to provide compliance with the drawings, specifications, and the service conditions specified and indicated.
- C. Shop tests as specified.
- D. Warranty: Provide a one (1) year warranty for material and workmanship defects.
- E. Coordination: Cover manufacturer shall coordinate the fabrication of covers with the contractor and clarifier manufacturer regarding the clarifier mechanism, scum collection, and launder and channel configurations.
- F. Contractor shall provide the services of the manufacturer's representative for equipment installation, startup, and training.
- G. Provide the following certificates related to the supply, installation, and operation of the equipment specified herein:
 1. Manufacturer's Equipment Certification.
 2. Equipment Installation Certification.
 3. Equipment Operation Warranty.

1.6 DELIVERY, STORAGE AND HANDLING

- A. Provide in accordance with manufacturer's requirements.
- B. Shipping:

1. All systems, sub-systems, and structures shall be shop fabricated and assembled into the largest practical size suitable for transporting.

1.7 OPERATION AND MAINTENANCE MANUALS

- A. Submit Operation and Maintenance Manuals as specified in closeout submittal.

PART 2 — PRODUCTS

2.1 MANUFACTURERS

- A. RPS Engineering
 1. 1300 Crispin Drive, Elgin, IL 60123
 2. Phone: 847-931-1950 | Fax: 847-931-4274
 3. www.rpsengineering.com
 4. Woman-Owned Business

2.2 COVERS

- A. Provide launder covers consisting of a system of molded fiberglass panels that are attached together to form a continuous cover over the launder trough, weir, and scum baffle within the tank.
 1. Provide the cover extending over the trough and weir to a point immediately inside the scum baffle so long as the cover does not interfere with the sweep arm.
 2. Individual sections: fitted to follow the curvature of the tank.
- B. Provide the cover designed such that adjacent panels fit together and the completed cover, when installed, forms a rigid structure.
- C. Provide covers designed and manufactured to inhibit incident sunlight from striking the surfaces of the launder and weir.
- D. Provide each cover section molded of UV-protected fiberglass and opaque to sunlight.
- E. Provide the cover designed to open away from or toward the operator as shown on contract drawings.
- F. Covers shall be designed to be non-walkable unless a walkable cover is specified. When a walkable cover is required, covers should be designed to support the weight of a 250-pound person.
- G. Cover segment: Two sections — a fixed mounting section and a hinged cover section connected by a continuous Type 316 stainless steel hinge.
 1. Mounting Section: Provide a rigid mount for the cover, fastened to the weir wall with Type 316 stainless steel brackets and hardware as indicated.
 - a. Provide the mounting section extending inward to a point just inboard the scum baffle.
 2. Cover Section: Hinged and extending outward or inward toward the tank wall to swing open to allow inspection and maintenance of the launder and weir. In the closed position, the Cover Section rests on an FRP support flange attached to the outer wall of the tank with "A" frame supports.

- a. Provide hinged cover sections designed such that alternating sections have integral tabs at each side, which rest on the adjacent section, covering the seams between panels and enabling alternate panels to open independently of every other panel.
3. Provide a latch mechanism that secures the hinged cover section to the support flange with integral lifting ring or handle.
- H. Provide a means of limiting the travel of the hinged cover section in the form of a Type 316 stainless steel cable restraint.
- I. Covers with inspection hatches or cleanout doors are not acceptable.
- J. Provide covers supported such that panels are held in place, with panels hinged to provide access to the launder and weir for inspection and maintenance.
- K. Where the circumference of the trough is interrupted by a bridge support or another obstacle, provide a fixed panel(s) over the trough beneath the support such that the surface of the cover is continuous around the entire tank.
- L. Provide the cover system designed to withstand wind and snow loads for the plant location per ASCE 7-22.
- M. Provide stiffeners as required integral to each panel. Panels reinforced with balsa or foam cores are not acceptable.

2.3 MATERIALS

- A. Fiberglass: Fiberglass reinforced polyresin composite laminate with UV stabilizer. All materials shall be resistant to hydrogen sulfide (H₂S) and corrosive gases typical of wastewater treatment environments.
 1. Glass fiber content shall be minimum 50% by weight.
 2. Physical Properties:
 - a. Tensile Strength (ASTM D-638): 30,000 PSI minimum
 - b. Compressive Strength (ASTM D-695): 30,000 PSI minimum
 - c. Flexural Strength (ASTM D-790): 30,000 PSI minimum
- B. Fasteners: All fasteners shall be stainless steel or structural plastic. Fasteners on underside of cover shall be Type 316 stainless steel. Beams and panels shall be fastened to concrete using Type 316 stainless steel drill-in-place anchor bolts.
- C. Seals: A mechanical and replaceable neoprene bulb-type seal shall isolate the cover perimeter from the concrete wall. No foam tape or caulk shall be allowed.
- D. Access Hatch: Provide raised access panels where indicated. Access panels shall be pultruded FRP. Provide Type 316 stainless steel fasteners, hinges, and hold-open device.
- E. Structural Supports: Wide flange or fabricated FRP structural beam. Resin vinyl ester with UV stabilizers. Provide at all hatches and pipe penetrations.

PART 3 — EXECUTION

3.1 INSTALLATION

- A. Install items in accordance with approved shop drawings, manufacturer's printed instructions, and as indicated.
- B. Contractor to field verify dimensions prior to installing the covers.

- C. Use factory drilled mounting holes. Field cutting of baffle panels will only be allowed as approved by the Engineer to complete the structure and accommodate in-tank obstructions.
- D. Coat all field cut or drilled edges in accordance with the manufacturer's recommendations to prevent fiber blooming or fraying.
- E. Provide adjacent baffle panels fastened together using ¼-inch bolts, 2 flat washers, lock washer, and hex nut. All hardware Type 316 stainless steel.
- F. The covers shall extend completely around the tank and shall be level, rigid, and free of sway that could work anchors loose or cause undue wear.

3.2 CONTRACT CLOSEOUT

- A. Provide in accordance with Section _____ CLOSEOUT PROCEDURES.

END OF SECTION 06 5102