



Warminster Fiberglass
Water and Wastewater Treatment Products
Keeping Americas' Water Clean

**SECTION 11301
FLAT WALK-ON TYPE ALGAE CONTROL/LAUNDER COVERS**

PART 1 – GENERAL

1.01 THE REQUIREMENT

- A. The contractor shall furnish and install complete Flat Walk-On Algae Control/Laundry Covers as shown on the drawings and as required for a complete installation as per the specifications.

1.02 REFERENCE STANDARDS

- A. Flat Walk-On Covers shall be provided in accordance with all requirements of the specification and shall be manufactured in accordance with industry standards and meet the following physical properties:

<u>TEST METHOD</u>	<u>ASTM</u>	<u>MINIMUM TEST RESULT</u>
1. Tensile Strength	D638	11,000 psi
2. Flexural Strength	D790	18,000 psi
3. Flexural Modulus	D790	0.9×10^6
4. Water Absorption	D570	.2% in 24 hrs.
5. Thermal Expansion	D696	10.5×10^{-6} in/in/°F
6. Barcol Hardness	D2583	35 Minimum

Results of the tests shall be recorded, date of testing, location of testing and number of pieces tested in accordance to the list of test methods.

Test results and date of testing shall be certified to be true and correct as to the accuracy of the tests performed.

1.03 SUBMITTALS

- A. The contractor shall submit shop drawings with complete details of the Flat-Walk-On Algae Covers, supports, anchor bolts and mounting details for a complete installation.
- B. The manufacturer shall submit a certification that the covers meet the requirements of the specification in all respects, materials of construction, details of construction and test results.

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- C. Submit 2-8" x 8" square sample pieces of the cover which will include a 3/16" thick outer laminate, 1" thick balsa core, a 3/16" thick inner laminate and 1" x 1" x 1/8" steel tubing molded-in. The outer layer will contain an anti-skid silica grit coating.
- D. Submit 2 end pieces of the hatch cover, width of cover either 8" or 24" wide by 8" long with 9/16" high flange all around, as shown on drawings and specified.
- E. Manufacturer will provide a 3 year written warranty for the Flat-Walk-On Algae Control Launder Covers. The warranty will begin upon acceptance by the engineers. The manufacturer will make any repairs necessary (except damage by others) for any defects in material or workmanship or replace as necessary, at no cost to the owner.

1.04 MANUFACTURER

The following manufacturer is acceptable to manufacture the Flat Walk-On Algae Control/Laundry Covers subject to the requirements of the specification. Warminster Fiberglass Company, P.O. Box 188, Southampton, PA 18966-0188; Telephone – 215 953-1260; Fax. – 215 357-7893; sales@wfgco.com.

1. Manufacturers "only" may request approval to bid if they meet the following criteria. Sales offices or agencies are unacceptable.
2. Provide a list of jobs you have manufactured over the past 10 years where the specified and designed flat-walk-on algae covers have been installed and in operation for a minimum of 10 years.
3. Provide a sample piece of cover typical to that described in the submittal section, one sample of the cover and 1 sample of the hatch cover.
4. The request must be submitted within 30 days of date of bid for evaluation and approval to be permitted to bid this job.

PART 2 – PRODUCTS

2.01 MATERIALS

The Flat-Walk-On Algae Control Launder Covers are molded in equal segments forming a complete circular cover with scum baffle molded in one piece with a silica sand grit surface to prevent slipping.

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The scum baffle molded-in forms a true radius for the wiper blade of the scum skimmer. The scum baffle will be 3/8" thick x 15" high by the full length of each segment.

Each segment contains 3 match-die-molded hinged hatch covers, for inspection and for cleaning of the weir plates. The hatch covers can be molded either 8" by 42" or 24" by 42".

The hatch covers have stainless steel hinges .050" x 4" x 2" open, attached to the cover for easy access.

Each match-die-molded hatch cover shall contain a pocket 5" long by 3" wide x 1-1/2" deep, molded-in. Each pocket shall contain a solid 3/8" stainless steel rod for lifting the covers.

The hatches, flanges and circular molded wall angle shall not be gasketed allowing free passage of air in and out from beneath the covers.

Fiberglass wall support angles shall be molded circular via the hand-lay-up method with the legs of the angle 1/4" thick by 5" wide x 4" high by full length of each segment.

The fiberglass scum baffle and cover will be supported with match-die-molded support brackets. One upper bracket and one lower bracket with a 1/4" thick mounting face with 3/16" thick full gussets on both sides of the 6" x 8" bracket. There will be six brackets equally spaced on each segment. There will be 2 - 7/16" slots crosswise in one 8" leg for attachment to the upper baffle bracket and 3 - 9/16" by 3-1/2" slots vertically for attachment of brackets together and anchoring to the concrete wall.

A 1/4" x 6" x 15" fiberglass lap plate shall be bolted to the end of each segment.

There shall be 4 - 10" diameter by 8-1/2" high mushroom vents with 4 - 4" by 4" screened vents for air movement both in and out of the cover. The mushroom vents will be located on 90° centers. The top of each vent will be shaped like a mushroom on the top, and shall be 14" in diameter. The mushroom vents will prevent gas build-up under the covers. Attach to covers with 6 - 3/8" lag screws and a bead of silicone sealant under the 3" wide mounting flange. Drill 1/2" holes on 13-1/2" diameter bolt circle.

Each algae cover segment will contain a vertical flange 3/8" thick x 4" wide, drill 7/16" holes on 8" centers for 3/8" stainless steel bolts.

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The fiberglass reinforced plastic cover segments shall have 3 pockets molded-in to receive either the 8" x 42" or 24" x 42" match-die-molded hatch covers. The scum baffle shall be molded-in along with the hatch cover openings as an integral part of each segment.

The cover shall be molded using a 20 mil thickness of isophthalic polyester gel-coat, followed by a 5/16" thick layer of fiberglass and resin (no fillers are permitted in the resin), followed by 1" thick end grain balsa core and 1" x 1" x 1/8" steel tubing placed in the laminate followed by a 3/16" thick laminate. The total thickness of the cover will be a minimum of 1-3/8" and the scum baffle shall be 1/4" thick.

Steel tubing 1" x 1" x 1/8" thick is molded-in between the hatches radially and molded-in along the hatches for additional reinforcement. When the molded segment has been trimmed and drilled, the entire walking surface including the hatches will be sanded, followed by a coating of gel-coat and silica sand to create an anti-skid surface.

2.02 LOAD TEST AND CERTIFICATION

- A. Live Load Test** – A live load test shall be performed at the manufacturer's facility applying 35-pounds per square foot maintained over a period of 24 hours, with a deflection using L/240. A height gauge shall be set at "0" at the start of the test and shall be read and recorded every 500-pounds until completion of the test. A reading shall also be recorded after the 24-hour period has expired.
- B. DOCUMENTATION** – Photographs of the set-up and loading and testing shall be taken when cover is empty and periodically during the test until fully loaded. The owner, engineer and contractor have the right to observe the test at the manufacturer's facility. A test report along with photographs shall be sent to the owner for documentation and verification.
- C. Documentation of load test results and photographs** will be forwarded immediately to the contractor and engineer for record purposes. Satisfactory test results must be met prior to proceeding with manufacturing of covers.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Verify the dimensions are correct and project conditions are suitable for installation.** Do not proceed with installation until unsatisfactory conditions have been corrected.

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- B.** Storage. If storage is necessary place skids or crates in a safe area and on a flat surface. A clean dry area is recommended.

3.02 INSTALLATION

- A.** Install products in accordance to approved shop drawings and manufacturer's installation instructions.
- B.** Insure that covers are installed at the same elevation at the wall all around. Slope covers 1/4" toward the center of the tank.
- C.** Insure the scum baffle radius is set correctly for the scum skimmer to make contact.
- D.** Check to be sure all bolts are in place and tightened.
- E.** Check and seal any nicks or gouges.
- F.** Install mushroom vents on 90° centers. Place caulking under flange, place over 10" opening, using lag bolts, bolt down to cover.

3.03 ADJUST AND CLEAN

- A.** Clean surfaces with a pressure washer to remove any dirt on the covers.
- B.** Remove trash and debris and leave the site in a clean condition.

END OF SPECIFICATION

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