

Part 1 GENERAL:

1.1. SUMMARY

- A. The design, fabrication, supply, and installation of the insulated floating cover system shall be as specified herein.
- B. The work shall include furnishing labor, equipment, material and supplies to complete work as specified herein.

1.2 REFERENCES

- A. The publications listed below form a part of the specification to the referenced.
 - 1. ASTM – American Society for Testing and Materials
 - 2. ASTM D638 – Tensile Properties of Plastics
 - 3. ASTM D1004 – Initial Tear Resistance of Plastic Film and Sheeting
 - 4. ASTM D1593 – Thickness
 - 5. ASTM D1603 – Carbon Black in Olefin Plastics
 - 6. ASTM D3786 – Mullen Burst Strength
 - 7. ASTM D4533 – Trapezoid Tear
 - 8. ASTM D4632 – Grab Tensile Strength and Grab Elongation
 - 9. ASTM D4833 – Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products
 - 10. ASTM D5261 – Mass
 - 11. ASTM D5199 – Measuring Nominal Thickness of Geotextiles and Geomembranes
 - 12. ASTM D5596 – Microscopic Evaluation of the Dispersion of Carbon Black in Polyolefin Geosynthetics
 - 13. Geosynthetics Research Institute
 - 14. GM11 – Accelerated Weathering of Geomembranes Using a Fluorescent UVA Device

1.3 QUALIFICATIONS

- A. The manufacturer of the insulated floating cover shall have manufactured a minimum of five (5) similar insulated floating cover systems with over five years operating experience in manufacturing covers.
- B. The design of the insulated floating cover is patented and shall be supplied by Environmental Fabrics, Inc., Gaston, SC.

1.4 SUBMITTALS

- A. The manufacturer shall submit shop drawings to the **Engineer** prior to Fabrication. The submittal package shall include a layout drawing and drawings of individual system components.

Part 2 PRODUCTS:

2.1 INSULATED FLOATING COVER SYSTEM

- A. The insulated floating cover system shall include insulated panels, HDPE slope covers, connection material, and anchoring system.
- B. The insulated floating cover system shall not require a gas collection system. The cover system shall be installed so that lagoon gases are not trapped beneath the cover. The cover system shall be designed to allow gases to escape vertically through the cover fabric.
- C. The insulated floating cover system shall not require a rainwater collection trench or water pumping equipment. The cover system shall be designed to allow rainwater to drain through the cover fabric. No water shall pool on top of the cover.
- D. The insulated floating cover system shall have sufficient flotation to support any cover weights and three people (600 pounds) in a 100 square foot area at the same time.
- E. The insulated floating cover system shall cover the entire water surface, with no edge(s) floating freely.
- F. The insulated floating cover system shall allow for the water level within the basin to fluctuate.

2.2 FABRIC PANELS

- A. The fabric panels shall be fabricated in such a manner that each panel can be individually displaced or removed to allow access to the water surface under the panel or the repair of the panel.
- B. Each panel shall be secured to all adjacent panels and the entire insulated cover shall be secured to the sides of the pond in such a manner that allows for installation and removal of the insulated cover.
- C. A single panel shall be independently buoyant, thereby requiring no additional support or buoyancy.

- D. The insulated floating cover shall be comprised closed-cell PE foam, bonded to a polyester/polypropylene fabric. Each panel along the edge of the lagoon shall be sewn to a panel of 40 mil HDPE to act as a slope cover. The HDPE shall meet the standards for HDPE geomembrane in accordance with Part 1, 2A.

2.3 CONNECTION OF PANELS

- A. UV resistant thread shall be used to sew the panels together.

2.4 PERIMETER ANCHORAGE

- A. Perimeter anchorage shall be installed along the perimeter of the lagoon and concrete wall.
- B. The cover edges shall be anchored firmly such that in no case will the perimeter of the cover allow wind to enter between the cover and the ground.

Part 3 EXECUTION:

3.1. GENERAL

- A. The installer of the cover system shall furnish all materials, tools, Equipment and services necessary to fabricate and install a insulated floating cover system.
- B. All fabrication and welding of the insulated floating cover panels shall be performed in a climate-controlled building. All straight welds on the sides shall be double-fusion wedge welds.
- C. Only assembly and attachment of the panels shall be allowed on-site.
- D. The insulated floating cover shall be capable of being installed in a wet basin. Insulated cover shall be assembled and connected on shore and pulled into position in the basin.
- E. The insulated floating cover shall be anchored to the shore using 40 mil HDPE. Anchoring methods shall be shown on the shop drawings. The anchoring shall be such that no wind can come between the cover and the ground.