SECTION 13 11 43 - POOL VERTICAL FIBERGLASS FILTERS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Pool vertical Fiberglass Filters

1.2 RELATED DOCUMENTS

A. Drawings and Contracting Requirements, including General and Supplementary Conditions and Division 01 - General Requirements, apply to this Section.

1.3 REFERENCES

A. The following latest edition reference specifications, guides and standards shall become part of this Specification as if herein written. If provisions conflict, the more stringent provisions shall apply.

1. National Sanitary Foundation (NSF)

1.4 DESIGN REQUIREMENTS

A. As assurance that each item of apparatus is properly sized to perform in conjunction with each other, the Owner requires bidders to use the filter manufacturer as a single source of supply for the items of equipment as listed and described herewith.

1.5 SUBMITTALS

A. Provide detailed Shop Drawings of the items of equipment being provided, indicating the dimensions, material and characteristics of the filter shells, interior and exterior filter manifolds, nozzle system and filter media.

B. Provide a typed sheet of Operating Instructions, embracing the operation functions and recurring maintenance processes involved in connection with the complete filtration system.

1.6 CERTIFICATIONS

A. Shall bear the NSF Seal of Approval, Standard #50 for sand type filters.

1.7 QUALIFICATION STATEMENTS

A. The equipment described herein shall be a product of a manufacturer regularly engaged in the fabrication of fiberglass pressure vessels for at least fifteen years.

1.8 WARRANTEE

A. The equipment supplier shall guarantee that the equipment to be furnished is of the correct capacity, that the various parts are designed to operate correctly and in conjunction with each other, that if the installation is made in accordance with his drawings and operated in accordance with his instructions, the system will perform the prescribed functions correctly, the water entering the pool will be clear, bright, free from suspended matter visible to the unaided eye, will not produce any toxic effect or impart undesirable taste, odors or colors, and will be sanitary to the satisfaction of all authorities having jurisdiction.

B. Provide a standard one year non-prorated warrantee.

1.9 SYSTEM STARTUP

A. An authorized representative of the equipment supplier shall provide the supervisory services of an Installation Engineer for at least 4 hours to fully instruct designated personnel in the operation, care and maintenance of the filter system.

PART 2 - PRODUCTS

2.1 FILTERS

A. Fiberglass Filter Tank

1. The filter tank shall be no less diameter and length than shown on plan. It shall be suitable for 50 psi working pressure.

2. The vessel(s) shall be constructed of multi-layer fiberglass. Layers shall consist of a combination of chopped glass and woven roving in an isopthalic-polyester matrix. The vessel shall be assembled from one side shell and two domed ends which shall be joined with an adhesive and reinforced with FRP layup. Alternate construction methods shall not be acceptable.

3. Vessels shall be provided with ABS support bases. The tanks will be secured to these bases with adhesive.

4. The wetted surface shall be a standard gel coat (GC). The gel coat shall be a modified polyester gel coat equivalent to a Cook gel coat 943-AN-023 with a thickness of no less than 10 mils.

5. The external surface shall be smooth in appearance and be free of cracks or other defects. The exterior surface shall be supplied with an all weather coating. The tank coating shall be water based acrylic emulsion paint with UV inhibitors.

6. Each filter tank shall be equipped with a bottom mounted drain out system that shall completely empty the vessel.

7. Each tank shall have an automatic and manual air release system and shall be of non-corrosive materials.

8. Each filter tank shall be equipped with the necessary flanges and connections for the internal and external piping and valves.

9. Each tank shall have one influent header fitted with sufficient distributors to properly distribute incoming flow evenly across the sand bed surface and one hub with sufficient laterals equally distributed not less than 12 inches below the filtering sand bed with a total effective slot area such that the average velocity through the slots will not exceed 6 feet per second at the design flow rate. The hub shall be fabricated of ABS and all distributors and laterals shall be replaceable. The laterals shall have “cam and ramp” ¼ turn connections and be constructed of ABS plastic with molded ‘V’-groove slots. Laterals with machined or cut slots shall not be accepted. Laterals shall be threaded at right angles into the header pipe.

10. Exterior influent and effluent pipe connections shall be 2” PVC.

11. Each tank shall have an 8.5 inch diameter access manhole with molded cover, o-ring, and pressure gauge.

12. The system shall be designed for installation against a back or side wall with all servicing accessible without moving tank(s). When the system is off, the tank(s) must remain full of water and not allow water to gravity drain back to the source in order to prevent disturbance of the sand bed.

13. Each filter tank shall be equipped with the necessary flanges and connections for the internal and external piping and valves.

B. Multi-port and Hi Flow Valve Control Assembly (Unless Otherwise Noted in Drawings).

1. Valve assembly shall be pre-plumbed and constructed of PVC. .

2. Valve shall include a six position positive lock operation system.

3. Shall be side mounted.

4. Valve mechanism shall be designed so that the filter, drain, rinse and backwash cycles can be accomplished by repositioning one valve handle that will provide accurate positioning for tight shut off.

2.2 FILTER MEDIA

A. A sufficient quantity of #20 US sieve grade clean crystal silica sand to cover filter elements with a minimum 12 inch sand bed shall be furnished and installed into each tank and shall be free of limestone or clay and shall be free from minerals that may precipitate onto pool surfaces The following is an acceptable gradation for this media:

#20 SILICA SAND

Effective size: 0.45 mm (0.018 in.)

Uniformity coefficient: 1.5

Mean diameter: 0.616 mm (0.0243 in.)

Standard deviation: 0.110 mm (0.00432 in.)

Grain Sphericity: GRTR 0.7

B. Each filter tank shall be provided with media as required per manufacturer’s recommendations.

END OF SECTION