

SPECIFICATIONS

E. Type 316L Stainless Steel Horizontal Pressure Sand Filter System

It is the intent of this specification to describe a water filtration system complete with all necessary items. It is the further intent of these specifications that the filtration unit from the pump through the backwash system, including all filter control valves as hereinafter specified, and all accessories, be supplied and guaranteed by one manufacturer. Any filter offered under these specifications shall be NSF listed at the time of offering (bid date). Such listing shall be evidenced by the filter model number appearing in the current NSF listing for swimming pool filters at the filtration rate required for this project. The filter specified shall be of the Pressure Sand type. The filter shall be a product of a manufacturer regularly engaged in the fabrication of water filtration equipment and who has a minimum of five (5) years experience in manufacturing this type of filter. The filter plant shall consist of a Type 316L Stainless Steel Horizontal Sand Pressure Filter manufactured by Paddock Industries of Rock Hill, SC. *The number, diameter, head and shell thickness, influent and effluent connections, area, filtration rate, backwash rate of tank(s), and method of operation shall be selected by the Project Engineer from the Paddock Type 316L Stainless Steel Horizontal Filter Data Table to meet the requirements of the pool and shall be provided on the drawings or in these Specifications.*

E.01 Type 316L Stainless Steel Filter Tank(s), ASME Code & Labeled

The tank(s) shall be constructed of ASME approved and certified Type 316L stainless steel material suitable for unfired pressure vessels with a working pressure of 50 psi and a 4 to 1 safety factor. The tank side shell shall be offset to form a backing strip for the fillet weld to ASME flanged and dished heads. The tank shall be manufactured according to ASME label so stating; written certification shall be provided with the filter. The tank heads shall be welded to the side shell by an automatic submerged arc process weld. Hand welding will not be permitted. Located in the side shell shall be a 14" x18" manhole complete with gasket, yoke and bolt for each tank. A 3/4" coupling for air release shall be welded to the side shell at the top of each cell. A tank drain with shutoff that can be operated from the ends of the filter shall be provided. The exterior of the filter shall be coated with PAD-COTE, an NSF listed chemically cured semi-gloss epoxy specifically formulated to protect steel surfaces from solvents and chemicals in corrosive environments.

E.011 Type 316L Stainless Steel Filter Tank(s), Non-Code (optional)

The tank(s) shall be constructed for a working pressure of 50 psi and tested to 75 psi. The tank side shell shall be offset to form a backing strip for the fillet weld to standard dished and flanged tank heads. The tank heads shall be welded to the side shell by an automatic submerged arc process weld. Hand welding will not be permitted. Located in the side shell shall be a 14" x18" manhole complete with gasket, yoke and bolt for each cell. A 3/4" coupling for air release shall be welded to side shell at the top of each tank. A tank drain with shutoff that can be operated from the ends of the filter shall be provided. The exterior of the filter shall be coated with PAD-COTE, an NSF listed chemically cured semi-gloss epoxy specifically formulated to protect steel surfaces from solvents and chemicals in corrosive environments.

E.02 Internal Distribution System

Each filter shall be supplied with a pressure equalizing overdrain system consisting of a Schedule 80 PVC Header with PVC laterals. Orifices shall be pointed upward. Each filter shall also be supplied with a pressure equalizing underdrain system consisting of a Schedule 80 PVC header drilled and tapped for 2" diameter molded ABS laterals. Non-clogging, self-cleaning orifice slots not to exceed .1985 inches on center shall be pointed downward.

E.03 Face Piping and Valves

All filter face piping required for the operation of the filter plant from the tank influent to and including "return to pool" valve and the "backwash to waste" valve shall be supplied. All fittings and piping material shall be as shown on the drawings. The filter system shall be supplied with nylon coated cast iron bodied wafer type butterfly valves with stainless steel shaft and aluminum bronze disc.

E.04 Automatic Backwash

The Paddock PC 6000 control panel supplied with the filter system shall automatically control chemicals, heater, recirculation pump, and filter backwash (time and/or pressure based). For details refer to Section F of these Specifications.

E.041 Manual Backwash (optional)

When the design flow rate can no longer be maintained, the media bed shall be cleaned by manually reversing the flow through the media. The backwash flow rate shall be 15 GPM per square foot of filter area and shall be directed to waste. The process shall be manually actuated by direct control of individual valves or by linkage assembly, as specified with the filter data provided by the Project Engineer.

E.05 Accessories

There shall be supplied: an air release system, an influent and effluent pressure gauge mounted in a common gauge holder, and a rate of flow indicator for each tank.

E.06 Filter Media

Each tank shall be supplied with a single grade of filter media supported upon a layer of 1/16" to 1/8" gravel. The filter sand shall be No. 20 with a particle size of .45 mm with a uniformity coefficient of 1.6 maximum. The gravel shall be placed in the bottom of the tank to a point 1/2" above the laterals. The media shall be supplied in separate bags, each containing approximately 1 cubic foot.

E.07 Pump and Motor

There shall be supplied a single or dual centrifugal pump and motor, with strainer. Pump characteristics and strainer sizes and product information shall be as on the drawings.

E.08 Guarantee

The filter manufacturer shall guarantee in writing that if the filter supplied is operated in accordance with written instructions given and accepted by the Owner, that it will perform in complete accord with the specifications.

E.09 Instructions

The contractor shall supply complete drawings and printed instructions for the installation and operation of all equipment specified herein and shown on the plans. A qualified representative of this contractor or the manufacturer shall visit the site of work after the installation of such equipment has been completed, shall put into operation all mechanical equipment and shall assist and instruct the Owner's representative in the operation of all such equipment.