

# **Rain Bird Industrial Water Filtration System** **Specification**

## Multiple Tank for In-Line Application of Media Filtration Equipment

### **General:**

The filtration system shall remove suspended solid contaminants from process water. The filter system is completely factory-assembled and mounted on a structural steel skid. The system shall include down-flow vertical type filters, interconnecting piping, valves, gauges, fittings and automatic controls. Media to be provided by Rain Bird consistent with system application. The filtration system shall be Rain Bird Model # \_\_\_\_\_.

### **Filter Tanks:**

Filter tanks shall be available in diameters of 18", 24", 30", 48" and 54". Sideshell dimension shall be specified consistent with media selection. Larger diameter filter tanks are available. Filter vessel shell definition shall be non-code stamp fabrication. Tanks shall be fabricated from carbon steel and shall be fusion epoxy lined. Equipment manufacturer shall maintain an ASME code certified shop, with ASME code certified welders. ASME code stamped vessels available on special order basis.

### **Piping:**

The filter system shall be provided with all inlet, outlet and backwash inlet and outlet piping. Manifolds shall be fusion epoxy lined carbon steel. All piping is provided with 150# raised face flange connections unless specified differently.

### **Tank and Piping Epoxy Lining:**

All interior surfaces of the filter tanks plus the inlet and outlet manifolds are fusion epoxy interior lined with a minimum thickness of 8 mils, 3M Scotchkote 134. The surfaces are sandblasted to near white metal prior to the fusion epoxy application and immediately after the application, the coating is cured at 400°F for a minimum of 20 minutes. The fusion epoxy lining is thermosetting epoxy powder that is electrostatically applied. The material is non-toxic and is approved for potable water applications by the EPA, AWWA, and NSF.

### **Automatic Valves:**

Each filter tank shall be supplied with a diaphragm operated cast metal valve. The valve shall be suitable for air or water operation and shall utilize a stainless steel valve shaft, stainless steel valve element retainer and polyurethane valve seal. The valve seal shall be removable for replacement or service. Cast iron valves shall feature external grease fittings for easy lubrication without disassembly. Hydraulic (water) operation shall be optional.

### **Filtration System Underdrain:**

The filtration system underdrain shall be Rain Bird's proprietary header lateral type underdrain with removable 304 stainless steel wedge wire laterals. The underdrain shall provide even, non-turbulent media bed fluidization and shall require a gravel pack and coarse garnet interface media.

### **Filtration Media:**

Shall be supplied consistent with system application requirements. Media options shall include sharp edge silica sand, sharp edged garnet sand, granular activated carbon, anthracite or other suitable media as selected by the specifier.

### **Automatic Controls:**

The filter system will include a Rain Bird Ultra 116-1i solid state automatic controller. This controller will provide labor-saving, unattended automatic backflush on a time-selected interval. In addition, there shall be included a field adjustable automatic pressure differential (P.D.) override safety circuit. Through the use of the Rain Bird Ultra 116-1i Controller, the filters are assured of being cleaned on a time-scheduled basis; however, should the source water quality vary and pressure differential develop to a preset limit prior to the scheduled backwash time, the P.D. circuit will activate a backwash cycle. A backwash cycle counter shall be integral to the controller. Controller shall be 110 VAC powered (220 VAC optional). Other enclosures and controllers are available as options. A solar powered package may be specified optional for the Rain Bird Ultra 116-1i controller.

### **Backwash:**

Multiple tank filter systems are designed to provide for clean filtered water backwash. The filter system shall not go off-line during backwash and shall not require an outside water source for the backwash function. Single tank systems generally require an external water source for backwashing or may use source water for the purposes of backwashing.