

Swimming Pool Hi-Rate Sand Filter

General:

1. It is the intent of these specifications to describe a hi-rate sand filter system – herein referred to as ‘filter’ designed specifically for swimming pool and spa applications. The specification is based on the **Pro-Series Plus Sand Filter** manufactured by Hayward Industries.
2. This specification includes criteria for the following CSI Master Format components:
 - 2.1. Division 13 – Special Construction
 - 13100 Special Facility Components
 - 131100 Swimming Pools
 - 131200 Fountains
 - 131700 Tubs & Pools
 - 2.2. Division 22 - Plumbing
 - 220150 Operation & Maintenance of Pool Systems
 - 220650 Schedules for pool and fountain plumbing systems
 - 225000 Pool and Fountain plumbing.
 - 225119 Pool Water Treatment
3. The filter shall meet the criteria of the following standards:
 - UL – Underwriters’ Laboratory
 - NSF – National Sanitation Foundation
 - ISO – International Standards Organization
 - ASTM – American Society for Testing and Materials
4. The filter shall be supplied to its site of installation in its original manufacturer’s packaging. The package shall clearly state the model name, model number and country of manufacture. The package shall include the relevant operating and installation instructions. The filter shall be appropriately labelled clearly indicating the manufacturer’s name. The manufacturer’s name/registered logo shall be molded into the body of the filter
5. The filter shall be a manufactured by a company with at least 10 years of proven product experience. The manufacturing facility shall be a permanent, established facility that meets the relevant codes.
6. The system shall be fabricated and fully assembled by the original equipment manufacturer. The valve and internal system accessories shall be removed from the system and shipped individually.
7. The filter shall be factory tested and shall be certified by NSF. Filter performance should match the performance as stated in the product literature. All filter material that comes into contact with water shall meet NSF 50 specifications.
8. The filter should have a working pressure of 50 psi. The test pressure shall be four times the working pressure.
9. The filter shall be guaranteed by the manufacturer for workmanship, materials and performance for a period of 2 years. The warranty will not include abusive or improper treatment of the filter during construction or under operation.



Filter Performance Data						
Model Number	Effective Filtration Rate	Design Flow Rate*	Maximum Working Pressure	Turnover (in gallons)		Sand Required
				8 hours	10 hours	
S311SX	4.95 ft ²	99 GPM	50 psi	47,520 gal	59,400 gal.	350 lbs.
	0.46 m ²	375 LPM	3.45 bar	180 kl	225 kl	159 kg
S360SX	6.50 ft ²	130 GPM	50 psi	62,000 gal.	78,000 gal	700 lbs.
	0.60 m ²	492 LPM	6.45 bar	236 kl	295 kl	318 kg

*Based upon 20 GPM per ft.² (815 LPM per m²). Maximum allowable NSF rating.

Product:

1. Filter System Capacity:

The filter system shall consist of _____ tanks each with a total effective area of _____ sq. ft. When operating at _____ gpm per square foot of filter area, the filter system will have a capacity of filtering _____ gallons in _____ hours. The backwash flow rate shall be equal to the filter flow rate.

2. Filter Tank:

- 2.1. The tank shall include _____ () complete with cover, gasket, bolts and nuts. On Side Mount Single and Tandem Tank Systems, the manways shall be located in the top head.
- 2.2. The filter tank(s) shall be HD-PE per ASTM D4976, Cell Classification 235. The tank shall be _____ thick and shall be _____ in diameter with a side shell height of _____ and
- 2.3. The filter system shall include _____ () media dump port(s) and drain(s) in the side shell. For side mount filters Influent and effluent connections shall be located in the tank side shell and shall be schedule 40 steel pipe.

3. Internal Distribution System:

- 3.1. Filter internal equipment shall include an upper distribution assembly and a lower collection system, hydraulically balanced to prevent turbulence and/or displacement of the media during filtration. Standard pipe arrangement or internal valving systems will not be acceptable.
- 3.2. The upper distribution system shall include a hydraulic injection molded ABS plastic distribution lense located uniformly over the filter bed. It shall be joined to the influent connection by means of a schedule 80 PVC pipe header.
- 3.3. The lower collection system shall consist of a schedule 80 PVC pipe header and cyclac laterals designed to retain the filter media with minimum head loss. The internal distribution system shall be designed to promote media bed circulation during backwash. The laterals should be the 360 deg slotted self- cleaning type.

4. Face Piping with Valves:

- 4.1. The Filter(s) shall be provided with all the necessary face piping and valves which shall be pre-assembled by the original equipment manufacturer. The face piping shall consist standard plastic fittings and a sight glass.
- 4.2. Face piping shall be _____" (inch(es)) I.P.S. with flanged fittings, matching influent and effluent connections on the filter tank.
- 4.3. Each filter will be equipped with a 6-way Variflo Valve.
- 4.4. A sight glass designed for 150 psi working pressure shall be fitted on the backwash line. It shall consist of a 1.5" (inch) I.P.S. base and cap with a 1" (inch) diameter lens.

5. Filter Media:

- 5.1. Filter media shall consist of uniformly graded silica sand which shall be free of limestone or clay.
- 5.2. Filter media shall be grade #20, effective size of .45 - .55 millimeter with a uniformity coefficient of 1.75 maximum. Support media shall be hard, uniformly graded 1/8" (inch) to 3/8" (inch) gravel. No limestone or clay shall be present.