

Swimming Pool Diatomaceous Earth Filter

General:

1. It is the intent of these specifications to describe a diatomaceous earth (DE) filter system – herein referred to as ‘filter’ designed specifically for swimming pool and spa applications. The specification is based on the **Pro Grid DE 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
- 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.

Model Number	Effective Filtration Area	Public Design Flow Rate*	Residential Design Flow Rate**	D.E. Required	Height	Width
DE2420	24 sq.ft	48 gpm	60 gpm	3 lbs	32 ½"	24"
DE3620	36 sq.ft	72 gpm	90 gpm	4 ½ lbs	34 ½"	24"
DE4820	48 sq.ft	96 gpm	120 gpm	6 lbs	40 ½"	24"
DE6020	60 sq.ft	120 gpm	150 gpm	7 ½ lbs	46 ½"	24"
DE7220	72 sq.ft	144 gpm	150 gpm	9 lbs	52 ½"	24"

*Based on 2 gpm/ft² (Maximum allowable NSF rating)
 ** Based on 2.5 gpm/ft² (Maximum allowable NSF rating)

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 filter shall be complete with piping, operating valves, pressure gauges, automatic air relief vent, internal media retainer, internal distribution system.
7. 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.
8. 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.
9. The filter should have a working pressure of 50 psi. The test pressure shall be four times the working pressure.
10. 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.

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.

2. Filter Tank:

- 2.1. The tank shall include _____ () complete with cover, gasket, bolts and nuts.
- 2.2. The filter tank(s) shall be durable glass reinforced copolymer as per ASTM D4976, Cell Classification 235. The tank shall be _____ thick and shall be 24 inches in diameter with a side shell height of _____ .
- 2.3. The filter tank shall be consist of self-aligned top and bottom parts secured together by a heavy-duty, tamper-proof, one piece flange clamp.
- 2.4. The tank shall be equipped with a media drain port and an air relief valve.
- 2.5. A pressure gauge indicating the differential pressure shall be fixed to the top shell.

3. Internal Distribution System:

- 3.1. Filter internal equipment shall include an inlet diffuser elbow that distributes the flow of unfiltered water evenly to all the filter elements.
- 3.2. High impact grid elements shall be assembled on a filter element locator.
- 3.3. A top collector manifold shall collect the water and direct it to the output. The top collector manifold shall have the integral air relief assembly.
- 3.4. The filter shall have 2" full flow internal piping and plumbing.

4. Filter Media:

- 4.1. Filter media shall consist of diatomaceous earth coated on polymer grids.
- 4.2. The grids shall have a fabric sleeve that holds the diatomaceous earth cake. The size of the openings on the fabric should be fine enough to allow a firm cake to be formed quickly while at the same time giving a minimum resistance to flow.
- 4.3. The filter media shall be cleaned by reversing the flow through the filter so that the dirt is loosened. When the filter is opened and the grids are exposed they should be hosed down.
- 4.4. After reassembly of the filter top, additional media should be recharged into the filter to ensure sufficient filtration efficiency.
- 4.5. An arrangement shall be provided to collect the backwash effluent and the spent diatomaceous cake washed from the filter for proper disposal.