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Sand Filter Testing: Pressure Loss By Selected Brands

The International Center for Water Technology was contracted to test the pressure loss through selected sand media filters for the purpose of comparative analysis. Four different sand media filter designs, all 48-inch diameter tanks, were tested specifically for pressure loss through clean sand media. Sand media installed in all instances as prescribed by the relative manufacturers (Yardney & Fresno Valve filters included prescribed gravel). All filters were tested with #16 sand as the filtration-grade media.

The typical flow range for a typical 48-inch filter media tank, based on a flow-through rate of 18-25 gpm per square-foot of surface area is 220 – 315 gpm. This testing was done with clean media sand, backwashed for two minutes at 200 gpm.

Test results are as follows:

<u>Flow Rate*</u>	<u>Pressure Loss Through Sand Filter (tank inlet-to-outlet)</u>			
	<i>LAKOS-SST</i>	<i>LAKOS-PRO-II</i>	<i>Yardney-SS</i>	<i>Fresno Valve-SS</i>
240 gpm	0.88 psi	1.36 psi	1.21 psi	1.65 psi
260 gpm	1.21 psi	1.66 psi	1.63 psi	2.14 psi
280 gpm	1.54 psi	1.96 psi	2.07 psi	2.65 psi
300 gpm	1.90 psi	2.27 psi	2.53 psi	3.20 psi

Pump operated at 40-50 psi.

All testing was performed with the same pumping, piping and instrumentation for accurate comparability. Flow rates were allowed to run for at least 5 minutes to achieve relatively constant flow-through characteristics. Testing was performed to recognized standards and protocol. Note: All sand media filters tested were provided by Claude Laval Corporation, LAKOS Filtration Division.

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