

Water Filter Testing Protocol

1.101 Fall 2006

Water filters will be tested at three different flow rates. Below are the steps you will be using to test, broken into two parts: **connection** and **testing**.

Connection

1. Connect the filter to the inlet and outlet connections provided at the water source, making sure that all connections are tight.
2. Make sure the outlet valve is turned off and then open the inlet valve.
3. Open the outlet valve slowly to allow the air out of the system. It may be best to orient the filter so the outlet is at the top during air purging. Make sure someone holds on to the outlet hose as outlet hoses under pressure can whip around causing a mess and injury.
4. Once the air has been purged from the system, orient the filter as per your design.
5. You will want to start the test with the system at full pressure, so run the water until the pump turns on, then close the outlet valve and wait for the pump to shut off.

Testing

1. Mechanical pressure gages may have a small discrepancy so you will want to check the readings of both the inlet gage and outlet gage while the system is equalized. The pressure of the system should be around 50 psi. Record the reading of each gage and note the difference if any.
2. Due to the fact that the stationary water in the filter will be neutralized, you will need to run the water for at least two volume changes. Open the outlet valve until the flow meter reads 3 gal/min and let run for at least two volume changes. Record the inlet and outlet pressure. Fill the first beaker with the filtered water.
3. Close the outlet valve until the flow meter reads 2 gal/min and let run for at least two volume changes. Record the inlet and outlet pressure. Fill the second beaker with the filtered water.
4. Close the outlet valve until the flow meter reads 1 gal/min and let run for at least two volume changes. Record the inlet and outlet pressure. Fill the third beaker with the filtered water.
5. Close the inlet valve and let the water drain from the filter.
6. Disconnect the filter from the system.
7. Run some water from the auxiliary tap and fill the fourth beaker with water.
8. Measure the pH of the three flow rate samples and the supply and record the readings.

Measurements

| | Inlet PSI | Outlet PSI | In - Out | pH |
|------------------|------------------|-------------------|-----------------|-----------|
| No Flow | | | | NA |
| 3 gal/min | | | | |
| 2 gal/min | | | | |
| 1 gal/min | | | | |
| Supply | NA | NA | NA | |

If there is a difference between the inlet pressure and outlet pressure in the no flow condition, the flow pressure drops should be adjusted accordingly.