

WPN Guide: Backflow Prevention

A backflow device functions as a 1-way valve to prevent liquid intrusion, i.e. back or reverse flow, between the upstream system side (#1) and the downstream service side (#2). Simple backflow devices are not testable, but there are different types of assembly that enable testing of backflow devices. The appropriate choices of both device and assembly depend on the backflow prevention application.

A backflow assembly typically has an upstream check valve (#1), a reduced pressure chamber, and a downstream check valve (#2). Shutoff valves (#1 & #2) are often present.

Testing

Backflow assemblies may be tested at regular intervals. A state-certified tester is often required to perform the test procedure, using a manufactured test kit. The test kit is in essence a differential pressure meter with 4 hoses that are connected to 4 test cocks on the backflow assembly. The exact test procedure is specific to the test kit model and the type of assembly.

Typical elements to be tested

- Check Valve #2 for tightness against reverse flow (the back pressure test): The result is either *Closed Tight* or *Leaked*.
- Check Valve #2 for its operating (reduced) pressure, that is, the pressure it holds at, expressed in PSID (pounds per square inch differential).
- Shutoff Valve #2 for tightness: *Closed Tight* or *Leaked*.
- Check Valve #1 for tightness: *Closed Tight* or *Leaked*, and its holding pressure in PSID.
- Shutoff Valve #1 for tightness: *Closed Tight* or *Leaked*.
- Relief Valve or Air Inlet Valve (an assembly has either one or the other) opening point: *Opened* or *Failed to Open*, and the pressure at which the valve opens, in PSID.