**Section 890.1140 Special Applications and Installations**

a) Atmospheric Vacuum Breaker. An atmospheric vacuum breaker shall be installed between the control valve and the fixture in a manner that it will not be subject to water pressure, except the pressure incidental to water flowing to the fixture. An atmospheric vacuum breaker shall be installed on the outlet side of the control valve.

b) Flushometer Valve. Flush valves shall be equipped with vacuum breakers installed on the discharge side of the flushing valve with the critical level at least 4 inches above the overflow rim of the bowl or 4 inches above the top of the urinal. (See Appendix I.Illustration D.)

c) Flushing Tanks. Flushing tanks shall be equipped with anti-siphon ballcocks. The ballcocks shall be installed with the critical level of the vacuum breaker at least 1 inch above the full opening of the overflow pipe. If the ballcock has no hush tube, the bottom of the water supply inlet shall be installed 1 inch above the top of the overflow pipe. (See Section 890.650(d).)

d) Lawn Sprinklers. Any lawn sprinkler system connected to a potable water supply shall be equipped with an RPZ. The RPZ may be located outside provided that it is protected from freezing or is removed at the end of the season, and it complies with Section 890.1130(g)(1).

e) Valve Outlets for Hose Attachments

1) All threaded valve outlets shall have backflow protection in accordance with Section 890.1130. All outside threaded valve outlets shall not be subject to freezing.

2) Yard hydrants shall be installed as follows:

A) Potable Water. All hydrants with threaded spigots shall have backflow protection attached to the hydrant spigot (if threaded) and either:

i) Hydrants with buried drain down (weep) holes shall have the weep holes protected from ground water backup by proper open site drainage. A backflow preventer shall not be used on the buried weep hole to protect the hydrant from ground water backup; or

ii) A yard hydrant that automatically drains back to a sealed container when flow is shut off, such as a canister type hydrant.

B) Non-potable Water. One or more hydrants may be installed for non-potable use if they are isolated from the potable water supply by a backflow preventer device installed in accordance with Section 890.1130(f). The hydrants shall be clearly identified as non-potable by color (see Section 890.1120) and bear a sign that reads as follows: "This water unsafe for drinking."

3) In a campground licensed in accordance with the Department's rules titled Youth Camp Code or Recreational Area Code, backflow protection is not required if the water supply line is directly connected to a recreational vehicle and is under constant pressure.

f) Commercial Laundry Machines. The potable water supply to commercial laundry machines shall be protected against back siphonage by an air gap or backflow protection device. If a vacuum breaker is used, it shall be a minimum of 26 inches above the top of the machine.

g) Commercial Dishwashers. Commercial dishwashers shall be equipped with an approved vacuum breaker located in the rinse water supply line on the discharge side of the final control valve, a minimum distance of 6 inches above the uppermost spray outlets. The cold water or make-up water supply line shall be provided with an air gap or a vacuum breaker located on the discharge side of the final control valve, a minimum distance of 6 inches above the overflow level or flood rim.

h) Aspirators. Water-operated aspirators shall meet the following specifications:

1) The water supply line shall be equipped with a shut-off valve.

A) If aspirators are used in operating rooms, emergency rooms, recovery rooms, delivery rooms, autopsy rooms, dental offices and laboratories for removing blood, pus or other fluids, a vacuum breaker shall be installed on the discharge side of the control valve, at ceiling height (a minimum of 7 feet, 6 inches) and the water supply shall be protected against backflow and back siphonage by an air gap; or an RPZ shall be used.

B) Chemical dispensing units shall have a dedicated water supply and shut-off valves to each unit. Each unit shall have a backflow device installed to protect against backflow and back siphonage.

2) The aspirator water discharge shall be provided with a 2-inch air gap to the receiving fixture.

i) Manufactured Housing and Mobile Home Units Manufactured Prior to June 15, 1976. At the time of water service connection, backflow protection shall be installed between the water service line and any manufactured housing or mobile home unit that was manufactured prior to June 15, 1976. Backflow protection shall be provided by at least a dual check valve backflow preventer assembly (DuC) conforming to ASSE 1024. This backflow protection shall be installed in all instances where a unit manufactured prior to June 15, 1976 is connected or re-connected to a water service line, e.g., for connection of a relocated unit, or re-connection of a unit that was disconnected to allow repairs to the water line; however, backflow protection is not required for existing units unless a new connection or re-connection to the water service line occurs.

j) Carbonated Beverage Dispensers Water Supply. The water supply to carbonated beverage dispensers shall be protected by one of the following methods:

1) Air gap;

2) ASSE 1022 backflow preventer; or

3) ASSE 1022 backflow preventer with vent port added.

k) Water-Powered Sump Pump. Sump pumps powered by potable or reclaimed water pressure shall be used only as an emergency backup pump. The water-powered pump shall be equipped with a battery powered alarm having a minimum rating of 85 dBa at 10 feet. Water-powered pumps shall have a water efficiency factor of pumping at least 1.4 gallons of water to a height of 10 feet for every gallon of water used to operate the pump, measured at a water pressure of 60 psi. Pumps shall be clearly labeled as to the gallons of water pumped per gallon of potable water consumed. Water-powered stormwater sump pumps shall be equipped with a dual check valve with atmospheric vent conforming to ASSE 1012 or CSA B64.

(Source: Amended at 38 Ill. Reg. 9940, effective April 24, 2014)