

systems shall have the water supply protected with a vented backflow preventer for carbonated beverage dispensers.

603.4.13 Water Treatment Units. Reverse osmosis drinking water treatment units shall meet the requirements of the applicable standards referenced in Table 14-1 or equivalent International Standard(s) approved by the Authority Having Jurisdiction. Waste or discharge from reverse osmosis or other types of water treatment units shall enter the drainage system through an airgap.

603.4.14 Backflow preventers shall not be located in any area containing fumes that are toxic, poisonous, or corrosive.

603.4.15 Deck-mounted or equipment-mounted vacuum breakers shall be installed in accordance with their listing and the manufacturer's instructions, with the critical level not less than 25mm (1 in.) above the flood-level rim.

603.4.16 Protection from Fire Systems.

603.4.16.1 Except as provided under Sections 603.4.16.2 and 603.4.16.3, potable water supplies to fire protection systems that are normally under pressure, including but not limited to standpipes and automatic sprinkler systems, except in one- or two-family residential sprinkler systems, piped in materials approved for potable water distribution systems shall be protected from back-pressure and back-siphonage by one of the following testable devices:

- (1) Double check valve assembly.
- (2) Double check detector assembly.
- (3) Reduced pressure backflow preventer.
- (4) Reduced pressure detector assembly.

Potable water supplies to fire protection systems that are not normally under pressure shall be protected from backflow and shall meet the requirements of the appropriate standards referenced in Table 14-1 or equivalent International Standard(s) approved by the Authority Having Jurisdiction.

603.4.16.2 Where fire protection systems supplied from a potable water system include a fire department (siamese) connection that is located less than 520m (1,700 ft.) from a nonpotable water source that is used by the fire department as a secondary water supply, the potable water supply shall be protected by one of the following:

- (1) Reduced pressure backflow preventer.
- (2) Reduced pressure detector assembly.

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Note: Nonpotable water sources include fire department vehicles carrying water of questionable quality or water that is treated with antifreeze, corrosion inhibitors, or extinguishing agents.

603.4.16.3 Where antifreeze, corrosion inhibitors, or other chemicals are added to a fire protection system supplied from a potable water supply, the potable water system shall be protected by one of the following:

- (1) Reduced pressure backflow preventer.
- (2) Reduced pressure detector assembly.

603.4.16.4 Whenever a backflow device is installed in the potable water supply to a fire protection system, the hydraulic design of the system shall account for the pressure drop through the backflow device. If such devices are retrofitted for an existing fire protection system, the hydraulics of the sprinkler system design shall be checked to verify that there will be sufficient water pressure available for satisfactory operation of the fire sprinklers.

603.4.16.5 Residential Sprinkler Systems. When residential sprinkler systems are installed using the potable water system, they shall be installed in accordance with the standards listed in Table 14-1 or equivalent International Standard(s) approved by the Authority Having Jurisdiction.

603.4.17 Special Equipment, Water Supply Protection. Vacuum breakers for washer-hose bedpans shall be located not less than 1.5m (5 ft.) above the floor. Hose connections in health care or laboratory areas shall be not less than 1.8m (6 ft.) above the floor.

603.4.18 Portable cleaning equipment, dental vacuum pumps, and chemical dispensers shall be protected from backflow by an airgap, an atmospheric vacuum breaker, a spill proof vacuum breaker, or a reduced pressure principle backflow preventer.

603.4.19 Combination stop-and-waste valves or cocks shall not be installed underground.

603.4.20 Pure Water Process Systems. The water supply to a pure water process system, such as dialysis water systems, semiconductor washing systems, and similar process piping systems, shall be protected from back-pressure and back-siphonage by a reduced-pressure principle backflow preventer.