

19-13-B37. Cross connections between water supplies prohibited**Water Supplies****19-13-B37. Cross connections between water supplies prohibited**

No physical connection between the distribution system of a public water system and that of any other water supply shall be permitted, unless such other water supply is of safe sanitary quality and the interconnection of both supplies is approved by the State Department of Public Health. No officer, board, corporation or other person or group of persons, owning, managing or controlling any public water system, shall provide new water service to a site where any person, firm or corporation either maintains such connection or is not in compliance with Section 19-13-B38a of the Regulations of Connecticut State Agencies at this location. Upon written order by the local health department or the Department of Public Health, an officer, board, corporation or other person or group of persons, owning, managing or controlling any public water system, shall terminate existing water service to a site where any person, firm or corporation either maintains such connection or is not in compliance with Section 19-13-B38a of the Regulations of Connecticut State Agencies at this location.

(Effective June 25, 1985; Amended July 7, 1993; Amended effective December 5, 2001.)

19-13-B38a. Permissible arrangements for connections to public water supply lines

(a) Definitions. As used in this section:

- (1) "Air gap" means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or outlet supplying water to a tank plumbing fixture, or other device, and the flood level rim of the receptacle. The vertical physical separation shall be at least two times the inside diameter of the water inlet pipe above the flood rim level but shall not be less than one inch;
- (2) "Air vent type backflow preventer" means a device containing two independently operating check valves separated by a chamber which can automatically vent to the atmosphere if backflow occurs;
- (3) "Atmospheric vacuum breaker" means a mechanical device which automatically air vents a pipeline to prevent backsiphonage;
- (4) "Double check valve assembly" (DCVA) means a device which contains two independently acting check valves located between two tightly closing shut-off valves and fitted with properly located test cocks;
- (5) "Fire sprinkler system" for fire protection purposes means an integrated system of underground and overhead piping designed to provide fire protection for a building or structure. The installation includes one or more automatic water supplies. The portion of the sprinkler system above-ground is a network of specially sized or hydraulically designed piping installed in a building, structure, or area generally overhead, and to which sprinklers are attached in a systematic pattern. The valve controlling each system riser is located in the sprinkler riser or its supply piping. Each sprinkler system riser includes a device for actuating an alarm when the system is in operation. The system is usually activated by heat from a fire and discharges water over the fire area;
- (6) "Hose bibb vacuum breaker" means an atmospheric vacuum breaker designed to be attached to an outlet having a hose connection thread;
- (7) "Owner" means the customer of a public water system;
- (8) "Pressure vacuum breaker" means a device which contains a spring loaded check valve and a spring loaded atmospheric vent which opens when the pressure approaches atmospheric. The unit shall include two tightly closing shut-off valves located at each end of the device and two test cocks properly located for testing the device;
- (9) "Reduced pressure principle backflow preventer" (RPD) means a device

Current with materials published in Connecticut Law Journal through 06/01/2006

19-13-B38a. Permissible arrangements for connections to public water supply lines

containing within its structure a minimum of two independently acting, approved check valves, together with an automatically operating pressure differential relief valve located between the two check valves. The first check valve reduces the system pressure a predetermined amount so that during normal flow and a cessation of normal flow the pressure between the checks shall be less than the system pressure. In case of leakage of either check valve, the differential relief valve, by discharging to atmosphere, shall operate to maintain the pressure between the checks less than the system pressure. The unit shall include tightly closing shut-off valves located at each end of the device and each device shall be fitted with properly located test cocks;

- (10) "Siamese connection" means an inlet equipped with one or more couplings to which a fire hose can be attached and through which water can be delivered by a fire department pumper to a sprinkler system; and
- (11) "Toxic or objectionable substance" means any compound which could affect the public health, the potability, or the aesthetic quality of the water.
- (b) Air Gap. An air gap is required between all potable water lines and equipment or systems which may be subject to contamination.
- (c) Reduced pressure principle backflow preventer.
 - (1) A reduced pressure principle backflow preventer (RPD) is required on a line to all facilities where toxic or objectionable substances are used in addition to the required air gap, vacuum breaker or RPD on individual pieces of equipment unless the public water system has determined that an RPD is not necessary. Where such substances are used in a specific area, an RPD on the line to that area may be used in place of the RPD on the line to the facility.
 - (2) The owner shall install a reduced pressure principle backflow preventer (RPD) or an air gap in the following instances:
 - (A) On a line to fire sprinkler systems (including tanks) where chemicals are added or to foam fire fighting systems;
 - (B) On a line to pressurized water systems on ships;
 - (C) On a line used to supply car wash facilities where pressure is boosted;
 - (D) On a line to irrigation or lawn sprinkler systems where chemicals are added;
 - (E) On a line to all boiler systems where chemicals are added;
 - (F) On a line to heat exchangers where chemicals are added;
 - (G) On a line to solar heating systems where chemicals are added;
 - (H) On a line to plating tanks or areas. No potable water use will be allowed downstream of the device pursuant to section 19-13-B38a(e)(2) of the Regulations of Connecticut State Agencies.
 - (3) Unless otherwise required by sections 19-13-B38a(b) or 19-13-B38a(c) of the Regulations of Connecticut State Agencies, the owner shall install either an RPD or an air vent type backflow preventer or an air gap in the following instances:
 - (A) Water supply lines to all boiler systems where chemicals are not added;
 - (B) Water supply lines to carbonators for beverage machines, water conditioning systems, and commercial ice making equipment;
 - (C) Water supply lines connected to solar heating systems where chemicals are not added and heat exchangers where chemicals are not added;
 - (D) Water supply lines to storage tanks used for fire protection where chemicals are not added.
- (d) Double Check Valve Assembly. The owner shall install a double check valve assembly (DCVA) on public water supply lines to fire sprinkler systems with siamese connections unless chemicals are added to the fire sprinkler system. Where chemicals are added to such systems, the owner shall install an RPD pursuant to Section 19-13-B38a(c)(2)(A) of the Regulations of Connecticut State Agencies. An owner may install an RPD instead of a DCVA on public water supply lines to fire sprinkler systems with siamese connections.
- (e) Vacuum breaker. The owner shall install either an atmospheric vacuum breaker or a

Current with materials published in Connecticut Law Journal through 06/01/2006

19-13-B38a. Permissible arrangements for connections to public water supply lines

pressure vacuum breaker or an air gap in the following instances:

- (1) Irrigation or lawn sprinkler systems where chemicals are not added;
 - (2) Flush valve toilets;
 - (3) Inlets which are or may become submerged, except where an RPD is required pursuant to section 19-13-B38a(c)(2) of the Regulations of Connecticut State Agencies;
 - (4) Hemodialysis units;
 - (5) At marinas and docks on all hose bibbs or other outlets to which a hose may be connected.
- (f) Installation and maintenance. The devices required by section 19-13- B38a of the Regulations of Connecticut State Agencies shall be purchased, owned, installed, and maintained by the owner in compliance with the following conditions:
- (1) New devices shall conform to the revision of American Water Works Association Standard C510, C511 or the revision of the applicable standard of the American Society of Sanitary Engineering in effect at the time of building permit application.
 - (2) There shall be no connection made for potable water use downstream of an RPD and upstream of the equipment or systems subject to contamination except where the device is installed on the service line and the required air gap, vacuum breaker, or RPD is provided on all individual pieces of equipment.
 - (3) Each RPD, DCVA and pressure vacuum breaker shall be located in a room or structure that is well lighted, properly drained, and not subject to flooding. These devices shall be easily accessible for repair, testing and inspection.
 - (4) There shall not be any bypass around a device without appropriate protection as required by Section 19-13-B38a of the Regulations of Connecticut State Agencies.
 - (5) If an RPD or DCVA cannot be removed from service for maintenance and testing during normal working hours, then a second device of the same type shall be installed in parallel so as to permit inspection and repair of either unit.
 - (6) The owner shall notify the public water system prior to the installation of any RPD, DCVA or pressure vacuum breaker required by Section 19-13-B38a of the Regulations of Connecticut State Agencies. Immediately after installation of such devices, the owner shall arrange for the public water system to have each device tested by a person who has met the requirements of Section 25-32-11(e) of the Regulations of Connecticut State Agencies.
 - (7) The public water system shall have each RPD, DCVA and pressure vacuum breaker tested annually and shall maintain records of the test. Any malfunctioning device shall be promptly restored to proper operating condition by the owner. A summary of the results shall be forwarded to the Department of Public Health as a part of the annual cross connection survey report. All tests must be performed by a person who has met the requirements of Section 25-32-11(e) of the Regulations of Connecticut State Agencies.
 - (8) Atmospheric vacuum breakers shall be located beyond the last control valve prior to the first outlet. All vacuum breakers shall be installed at an elevation higher than any outlet according to manufacturers instructions.
 - (9) An atmospheric vacuum breaker shall be installed so that it is not subject to backpressure or continuous operating pressure of more than twelve (12) hours duration. Where vacuum breakers are to be installed under section 19-13-B38a(d) of the Regulations of Connecticut State Agencies and a continuous operating pressure exists, a pressure vacuum breaker shall be used.
 - (10) An atmospheric vacuum breaker shall be installed in such a fashion that it will not be subject to corrosion which will render it inoperative.
 - (11) The owner is responsible for complying with all building, plumbing, fire safety or other applicable codes, regulations or requirements.
- (g) Civil Penalties.
- (1) Notice of violation. When the Commissioner determines that a violation of

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19-13-B39. Quality of water supplies made available for public and for employees

Section 19-13-B38a(d) of the Regulations of Connecticut State Agencies has occurred or is occurring, the commissioner may so notify the violator and may impose a civil penalty in accordance with this subsection if compliance is not achieved by the date specified in the notice of violation.

- (2) Appeals. Within twenty days (20) after such notice is sent by the commissioner, an owner in receipt of a notice of violation issued pursuant to this subsection may petition the commissioner in writing, by U.S. mail, certified or registered, postage prepaid, return receipt requested, for an opportunity to contest the determination that a violation occurred, the determination a violation has not been corrected, the initial date of the imposition of the penalty, and the imposition of a penalty.
- (3) Penalty. Failure to install a device required pursuant to Section 19- 13-B38a(d) of the Regulations of Connecticut State Agencies shall result in a penalty of not more than \$2000.

(Effective March 7, 1989; Amended July 7, 1993; Amended effective December 5, 2001.)

19-13-B39. Quality of water supplies made available for public and for employees

No water supply shall be used or rendered available for drinking and for other personal or domestic purposes in any industrial plant, mercantile establishment, hotel, lodging or boarding house, tenement house, hospital, theatre, park or public building, or on any outdoor or construction work, unless such supply is of safe sanitary quality approved by the state department of health. If a water supply for industrial or fire protection purposes is obtained entirely or in part from a source not approved for drinking purposes, this supply shall be distributed through an independent piping system having no connection with the systems for drinking and for other domestic use.