

TEMPE CITY CODE:

ARTICLE V. CROSS-CONNECTION CONTROL

Sec. 33-100. Purpose.

The purpose of this article is to protect the public water supply of the city from the possibility of contamination or pollution by isolating within the user's system such contaminants or pollutants which could backflow into the public water supply; and to provide for the monitoring and enforcement of a continuing program of backflow prevention which will prevent the contamination or pollution of Tempe's potable water supply.

(Ord. No. 87.57, § 33-100, 1-28-88)

Sec. 33-101. Responsibility.

(a) The water utilities department (hereinafter called the "department") of the city is invested with the authority and responsibility for the implementation of an effective cross-connection control program and for the enforcement of the provisions of this article and to prevent water from unapproved sources to enter the potable water system. No water service connection to premises of a type specified in this article shall be installed or maintained unless the public water supply is protected as required by this article.

(b) The user shall not allow any pollutants and contaminants to enter the public potable water system from the point of delivery from the public potable water system. The user shall at his own expense install, operate, test and maintain approved backflow prevention assemblies as directed by the department.

(c) The development services department is authorized to enforce the provisions of this article on all new buildings, additions with new services and changes of use of existing buildings where required by § 33-103(c) in accordance with Chapter 8, Article 7, Division 2.

(Ord. No. 87.57, § 33-101, 1-28-88; Ord No. 95.19, 7-20-95; Ord. No. 97.20, 4-10-97; Ord. No. 2001.17, 7-26-01; Ord. No. 2004.15, 4-29-04)

Sec. 33-102. Definitions.

The following words and terms, when used in this article, shall have the following definitions, unless the context clearly indicates otherwise:

Approved means accepted by the department as meeting an applicable specification stated or cited in this article, and as suitable for the proposed use.

Auxiliary water supply means any water supply on or available to the premises other than the public potable water supply, including, but not limited to, water from another purveyor's public potable water supply, treated effluent, wastewaters or industrial fluids.

Backflow means the reversal of the normal flow of water caused by either backpressure or backsiphonage.

Backflow prevention assembly means an assembly or means designed to prevent the reversal of the normal flow of water caused by either backpressure or backsiphonage.

(a) Air gap means the unobstructed vertical distance through the free atmosphere between the lowest opening from any pipe or faucet supplying water to a tank, plumbing fixture, or other device and the flood level rim of said vessel. An approved air-gap shall be at least double the diameter of the supply pipe, measured vertically, above the overflow rim of the vessel, and in no case less than one inch.

(b)Reduced pressure principle assembly means an assembly of two (2) independently acting approved check valves together with a hydraulically operating, mechanically independent differential pressure relief valve located between the check valves and, at the same time, below the first check valve. The unit shall include properly located test cocks and tightly closing shutoff valves at each end of the assembly. The entire assembly shall meet the design and performance specifications as determined by a recognized laboratory and approved by the department for backflow prevention assemblies. To be approved, these assemblies must be readily accessible for in-line testing and maintenance.

(c)Double check valve assembly means an assembly of two (2) independently operating approved check valves with tightly closing shutoff valves on each end of the check valves, plus properly located test cocks for the testing of each check valve. The entire assembly shall meet the design and performance specifications as determined by a recognized laboratory and approved by the department for backflow prevention assemblies. To be approved these assemblies must be readily accessible for in-line testing and maintenance.

(d)Pressure vacuum breaker assembly means an assembly containing an independently operating loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve. The assembly will be equipped with properly located test cocks and tightly closing shutoff valves located at each end of the assembly.

Backpressure means the flow of water or other liquids, mixtures or substances under pressure into the distribution pipes of a potable water supply system from any source or sources other than the intended source.

Backsiphonage means the flow of water or other liquids, mixtures or substances into the distribution pipes of a potable water supply from any source other than its intended source caused by the reduction of pressure in the potable water supply system.

Contamination (high hazard) means an impairment of the quality of the potable water by sewage, industrial fluids or waste liquids, compounds or other materials to a degree which creates an actual or potential hazard to the public health through poisoning or through the spread of disease.

Cross-connection means any physical connection or arrangement of piping or fixtures between two (2) otherwise separate piping systems, one of which contains potable water and the other nonpotable water or industrial fluids through which, or because of which, backflow may occur into the potable water system. This would include any temporary connections, such as swing connections, removable sections, four-way plug valves, spools, dummy section of pipe, swivel or change-over devices or sliding multiport tube.

Pollution (low hazard) means the presence of any foreign substance (organic, inorganic or biological) in the water which tends to degrade its quality so as to constitute a hazard or impair the usefulness or quality of the water to a degree which does not create an actual hazard to the public health but which does adversely and unreasonably affect such waters for domestic use.

Tester certified means a person who has completed a minimum of forty (40) hours of training and has passed a written and practical exam as part of a certification or re-certification process. Each person certified to make competent tests or to repair, overhaul and make reports on backflow prevention assemblies shall be conversant with the applicable laws, rules and regulations and have had experience in plumbing or pipe fitting or have other qualifications which are equivalent in the opinion of the department.

Water, nonpotable means water which is not safe for human consumption. Water, potable means any water which, according to standards recognized by the city, is safe for human consumption.

Water, service connection means the terminal end of the service connection from the public potable water system at its point of delivery to the user's water system. If a meter is installed at the end of the service connection, then the service connection shall mean the downstream end of the meter. Unprotected takeoffs from the service line will not be permitted upstream of any meter or any backflow prevention assembly located at the point of delivery to the user's water system.

Service connection shall also include water service connection from a fire hydrant and all other temporary or emergency water service connections from the public potable water system.

(Ord. No. 87.57, § 33-200, 1-28-88; Ord. N
o. 95.19, 7-20-95; Ord. No. 2004.15, 4-29-04)

Sec. 33-103. Approval.

(a) Backflow prevention assemblies required hereunder shall be approved by the department and shall be installed by and at the expense of the user.

(b) The department may approve backflow assemblies when such assemblies have met the criteria set forth in § 33-106(b) and provided the manufacturer has a local parts and service center.

(c) Assemblies shall be specified and located on the construction plans for all new buildings, additions with new services, and changes of use or occupancy of existing buildings where required by § 33-105. Approval shall be obtained prior to issuance of the building permit. This section does not apply to building permits applied for prior to the effective date of this article except as provided in § 33-110.

(Ord. No. 87.57, § 33-300, 1-28-88; Ord. N
o. 95.19, 7-20-95; Ord. No. 2004.15, 4-29-04)

Sec. 33-104. Installation of backflow prevention assemblies.

(a) Assemblies shall be installed at the service connection or near the property line but in all cases before the first branch line leading off of the service line, and in an accessible location approved by the department.

(b) Backflow prevention assemblies shall have at least the same cross-sectional area as the water service and or meter. In those instances where a continuous water supply is necessary, two (2) sets of backflow prevention assemblies shall be installed in parallel, if the water supply cannot be temporarily interrupted for the testing of assemblies.

(c) No bypass shall be installed around backflow prevention assemblies.

(d) Double check valve assemblies shall be installed as prescribed in the standard details approved by the department. Copies of the standard details are available from the department. Double check valve assemblies may be installed below ground in a vault, if approved in writing, on a case-by-case basis by the department.

(e) Reduced pressure principle assemblies shall be installed as prescribed in the standard details approved by the department. Copies of the standard details are available from the department. Reduced pressure principle assemblies shall be installed above ground.

(f) All pressure-type backflow prevention assemblies, which are designed for periodic field testing, shall be equipped with resilient seated shut-off valves on both the upstream and the downstream side of the assembly. In addition, resilient seated test cocks shall be provided and located so that test equipment may be connected to the assembly at such points that the pressure in each pressure zone may be detected and, in addition, a test cock shall be located upstream of the upstream shut-off valve as close as possible to the upstream shut-off valve.

(Ord. No. 87.57, § 33-400, 1-28-88; Ord. No. 95.19, 7-20-95; Ord. No. 2004.15, 4-29-04)

Sec. 33-105. Premises or systems requiring approved backflow prevention assemblies.

(a) An approved backflow prevention assembly of the type specified in this section shall be the minimum installation of each service connection (whether from a fire hydrant, temporary regular or other water service connection) to the following type of premises or systems:

Type of Assembly Required

Premises Requiring Approved Backflow Prevention Assemblies	Double Check	Reduced Pressure	Air Gap	Pressure Vacuum Breaker
Air craft and missile plants		X		
Animal clinics, animal grooming shops		X		
Automotive repair with steam and/or acid cleaning equipment or solvent facilities		X		
Auxiliary water systems (interconnected)		X		
Auxiliary water systems (non-interconnected)	X			
Beverage bottling plant		X		
Breweries		X		
Buildings greater than 3 stories or 34 feet in height (low hazard)	X			
Buildings greater than 3 stories or 34 feet in height (high hazard)		X		
Buildings with booster pumps or potable water storage (low hazard)	X			
Buildings with booster pumps or potable water storage (high hazard)		X		
Canneries, packinghouses and reduction plants		X		
Car wash facilities		X		
Central heating and air conditioning plants		X		
Chemical plants		X		
Chemically treated potable or non-potable water systems		X		
Civil works (government-owned or operated facilities not open for inspection by the department)		X		
Commercial laundries		X		
Dairies and cold storage plants	X			
Dye works		X		
Film processing labs		X		
Food processing		X		
High schools and colleges		X		
Holding tank disposal stations		X		
Hospitals and mortuaries		X		
Medical and dental buildings		X		
Sanitariums, rest and convalescent homes		X		

Irrigation systems with chemical injection		X		
Irrigation systems (premises having separate systems)		X		
Labs using contaminating materials		X		
Manufacturing, processing and fabricating plants using contaminating materials		X		
Mobile home parks		X		
Motion picture studios		X		
Oil and gas production facilities		X		
Plating plants		X		
Power plants		X		
Radioactive materials processing		X		
Restricted, classified or other closed facilities		X		
Rubber plants		X		
Sand and gravel plants		X		
Sewage and storm drainage facilities		X		
Shopping centers		X		
Water trucks, hydraulic sewer cleaning equipment		X	X	
Any premises where a cross-connection is maintained		X		

(b) Fire protection systems will be required to have the following type of protection:

Type of Assembly Required

Premises Requiring Approved Backflow Prevention Assemblies	Double Check	Reduced Pressure	Air Gap	Pressure Vacuum Breaker
Direct connection from public water system (non-contaminating)	X			
Direct connection from public water system (contaminating)		X		
With pump and/or storage tank		X		
With auxiliary supply		X		

(c) Any premises where water supplied by the city is subject to deterioration in sanitary quality and there is the potential for its entry into the public water system shall be protected as required by the department.

(Ord. No. 87.57, § 33-500, 1-28-88; Ord. No. 95.19, 7-20-95, Ord. No. 2004.15, 4-29-04)

Sec. 33-106. Approved backflow prevention assemblies.

(a) As designated in § 33-103(b) the standard installation at each service connection to premises or each system requiring an approved backflow prevention assembly shall be a model and size approved by the department.

(b) The term "approved backflow prevention assembly" means an assembly approved by the department and shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association—AWWA C506-78 most recent revised publication "Standards for Reduced Pressure Principle and Double Check Valve Backflow Prevention Assemblies", and have met completely the laboratory and field performance specifications of the Foundation for Cross-Connection Control and Hydraulic Research (FCCCHR) of the University of Southern California established by specifications of backflow prevention assemblies in the most current issue of the "Manual of Cross-Connection Control" or another third party certifying entity approved by the department.

(c) Backflow prevention assemblies which may be subject to backpressure or backsiphonage that have been fully tested and have been granted a certificate of approval by FCCCHR may be listed on the current list of "Approved Backflow Prevention Assemblies", which will be made available upon written request to the department.

(Ord. No. 87.57, § 33-600, 1-28-88; Ord. No. 95.19, 7-20-95; Ord. No. 2004.15, 4-29-04)

Sec. 33-107. Maintenance, testing and records.

(a) The user shall maintain accurate records of tests and repairs made to backflow prevention assemblies and provide the department with copies of such records. The records shall be on forms approved by the department and shall include the list of materials or replacement parts used.

(b) Testing, maintenance and repairs to such assemblies shall be made at the customer's expense by a certified backflow prevention assembly tester that is approved by the department or any other agency designated by the department to prescribe test methods or to certify or approve persons to conduct such tests. It shall be the duty of the user to see that these tests are made at the time of the initial installation and at least once a year, on the anniversary date of the initial inspection.

(c) The user shall notify the department fifteen (15) days in advance when the annual tests are to be done, so that an official representative of the department may witness the tests if so desired.

(d) Following the installation of any assembly required by this article, it shall be tested by a certified tester. The test results shall be submitted to the development services department with a request for inspection approval before the certificate of occupancy can be issued.

(e) Following the repair, repiping, overhaul or relocation of an assembly, the user shall have it inspected by the department and tested by a certified tester.

(Ord. No. 87.57, § 33-700, 1-28-88; Ord. No. 95.19, 7-20-95; Ord. No. 97.20, 4-10-97; Ord. No. 2004.15, 4-29-04)

Sec. 33-108. Inspections.

The user's system must be open for inspection at all reasonable times, and in all emergencies to authorized representative's of the department to determine whether cross-connections or other structural or sanitary hazards, including violations of these regulations, exist. When such a condition becomes known the department may deny or immediately discontinue service to the premises by providing a physical break in the service line until the user has corrected the condition in conformance with this article.

(Ord. No. 87.57, § 33-800, 1-28-88)

Sec. 33-109. Discontinuance of service.

Service of water to any premises may be discontinued by the department if a backflow prevention assembly required by this article is not installed, tested and maintained, if it has been found that a backflow prevention assembly has been removed or bypassed, or if a cross-connection exists on the premises. Service will not be restored until such conditions or defects are corrected. The department may also terminate a user's service upon twenty (20) days' notice in writing in non-emergency.

(Ord. No. 87.57, § 33-900, 1-28-88; Ord. No. 2004.15, 4-29-04)

Sec. 33-110. Existing assemblies and users.

(a) If the department determines that a user's backflow prevention assembly does not meet current standards, the user shall retrofit the assembly so that it will meet current standards.

(b) Whenever it is determined by the water utilities manager or his authorized representative that a water service poses an actual or potential threat to the physical properties of the water system or potability of the public water system an assembly complying with this article shall be installed.

(Ord. No. 87.57, § 33-1000, 1-28-88; Ord. No. 2001.17, 7-26-01; Ord. No. 2004.15, 4-29-04)

Sec. 33-111. Penalty.

Any violation of this article shall constitute a misdemeanor, and shall be punishable as set forth in § 1-7 of this code.

(Ord. No. 87.57, § 33-1100, 1-28-88)

Secs. 33-112—33-119. Reserved.