



MEDFORD WATER COMMISSION

41-00513

REGULATIONS

GOVERNING WATER SERVICE

EFFECTIVE NOVEMBER 1, 1994

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All backflow prevention devices shall be located on the downstream side of and adjacent to the meter unless special permission to locate such device elsewhere in existing building situations is granted by the Commission. ²

The backflow prevention devices, when and if allowed inside existing buildings, must meet all of the following conditions:

- (1) Special permission must be granted by the Commission and any special requirements followed.
- (2) The location of required by-pass meter remote registers shall be located outside the existing building adjacent to the domestic meter in a separate underground box at the property line and/or Medford Water Commission easement line.
- (3) The maximum length of service line from the backflow prevention device to the property line and/or Medford Water Commission easement line shall not exceed fifteen feet (15').
- (4) A continuous 1-inch conduit shall be installed between the backflow prevention device and any remote register location.

22.8 Underground Piping

All private fire system underground piping which is upstream from the backflow protection device shall be ductile iron pipe in accordance with the Medford Water Commission "Standard Specifications for Ductile Iron Pipe and Cast Iron Fittings."

22.9 Installation Requirements

All backflow protection installed shall comply with the installation guidelines included in Section V of Standards for Fire Protection Systems and defined as follows:

| | | |
|--------------|---|--|
| Schedule I | = | Reduced Pressure Principle Device (RP) |
| Schedule II | = | Double Check Valve Assembly (DC) |
| Schedule III | = | Double Detector Check Valve Assembly (DDC) |

² **NOTE:** It is the policy of the Commission not to allow any backflow prevention devices inside any buildings.

Schedule IV = Reduced Pressure Principal Detector Check Assembly (RPDC)

22.10 Responsibility for Fire Service

For those places where the device is placed within the building, the owner shall be responsible for the maintenance and repair of the fire service, or damage caused by the fire service in all areas outside public right-of-way or Medford Water Commission easement.

SECTION 23 CROSS CONNECTIONS

23.1 General Statement

- (1) These standards set forth minimum requirements for safe practice in the delivery of water for domestic use. They are to be interpreted as meeting only the minimum requirements of design, construction, maintenance, and operation of the water utility system.
- (2) For the purpose of these minimum requirements, the use of the word "Shall" indicates a mandatory requirement and the use of the word "Should" indicates a recommendation for good waterworks practice.

23.2 Water System

- (1) The water system shall be considered as made up of two parts: The utility system and the customer system.
- (2) The utility system shall consist of the source of facilities and the distribution system, and shall include all those facilities of the water system under the complete control of the utility, up to the point where the customer system begins, generally at the water meter, which is at the easement line or property line.
- (3) The customer system shall include those parts of the facilities which convey domestic water to points of use beyond the termination of the utility system. The term "customer system" is that of any user whether or not a charge is made.

23.3 Connection With Customer System

- (1) As used in these standards, unless the context requires otherwise, the following definitions shall apply:

- (a) **"AIR GAP SEPARATION"** means a physical separation between the free flowing discharge end of a potable water supply pipeline and the overflow rim of an open or non-pressure receiving vessel.
- (b) **"ATMOSPHERIC VACUUM BREAKER"** means a device which allows air to enter the water line when the line pressure is reduced to a gauge pressure of zero or below.
- (c) **"AUXILIARY WATER SUPPLY"** means any water supply that is or may be cross connected to the public water supply system.
- (d) **"BACKFLOW"** means the flow of water or other liquids from any source, back into the potable water supply within a facility and/or public water supply. Backflow occurs due to a differential pressure existing between two different points within a continuous fluid system and may occur due to either backsiphonage or backpressure.
- (e) **"CHECK VALVE"** means a check valve that seats readily and completely. It must be carefully machined to have free moving parts and assure water tightness. The base of the closure element and valve seat must be molded synthetic rubber, composition or other non-corrodible material which will seat tightly under all prevailing conditions of field use. Pins and bushings shall be of bronze or other non-corrodible, non-sticking material, machined for easy dependable operation. The closure element shall be internally loaded to promote rapid and positive closure in all sizes where this feature is obtainable.
- (f) **"CROSS CONNECTION"** means any physical arrangement whereby a public water supply is connected, directly or indirectly, with any non-potable or unapproved water supply system, sewer, drain, conduit, pool, storage reservoir, plumbing fixture, or other device which contains, or may contain, contaminated water, liquid, gases, sewage or other waste, of unknown or unsafe quality which may be capable of imparting contamination to the public water supply as a result of backflow.

Bypass arrangements, jumper connections, removable sections, swivel or change-over devices, and other temporary, permanent or potential connections through which, or because

- of which, backflow could occur, are considered to be cross connections.
- (g) **"DOUBLE CHECK VALVE ASSEMBLY"** means a device consisting of two internally loaded check valves, either spring loaded or internally weighted, installed as a unit between two approved shut off valves.
 - (h) **"DOUBLE DETECTOR CHECK VALVE ASSEMBLY"** means a device which is a hybrid version of a mainline double check valve assembly with a smaller factory installed double check valve assembly and meter in a bypass configuration to detect leakage or use.
 - (i) **"PRESSURE VACUUM BREAKER"** means a device consisting of one or more spring loaded check valves and an independently operating air inlet valve installed as a unit between two tightly closing shut off valves. The air inlet valve is internally loaded to the open position.
 - (j) **"REDUCED PRESSURE PRINCIPLE DEVICE"** means a device consisting of two independently acting, spring loaded check valves separated by a spring loaded differential pressure relief valve. This device shall be installed as a unit between two approved shut off valves. During normal operation the pressure between the two check valves is maintained at a lower pressure than the supply pressure. If either check valve should leak, the differential pressure relief valve will maintain a pressure differential of not less than two psi between the supply pressure and the zone between the check valves by discharging water to atmosphere.
 - (k) **"REDUCED PRESSURE PRINCIPAL DETECTOR CHECK ASSEMBLY"** means a device which is a hybrid version of a mainline reduced pressure principal device with a smaller factory installed reduced pressure principal device and meter in a bypass configuration to detect leakage or use.
- (2) The customer's system should be open for inspection at all reasonable times to authorized representatives of the utility to determine whether cross connections or other hazards, including violations of these regulations, exist. When such a condition becomes known, the utility may deny or immediately discontinue the service to the premises by a physical break in the service until the condition has

been corrected, provided that opportunity by the customer to be heard upon request shall be allowed thereafter as soon as practicable.

- (3) Backflow prevention device assemblies for protecting community water systems shall be installed on the service connection to premises where an approved airgap does not exist and:
- (a) There is an auxiliary water supply which is, or can be, connected to the potable water piping;
 - (b) There is piping for conveying liquids other than potable water, and where that piping is under pressure and is installed and operated in a manner which could cause a cross connection;
 - (c) There is intricate plumbing which makes it impractical to ascertain whether or not cross connections exist;
 - (d) There is backsiphonage potential.
 - (e) Cross connections or potential cross connection exists.

The type of backflow prevention required shall be commensurate with the degree of hazard which exists:

- (a) An approved air gap of at least twice the inside diameter, but not less than one inch, of the incoming supply line measured vertically above the top rim of the vessel, or an approved reduced pressure (RP) device assembly shall be installed where the substance which could backflow is hazardous to health, such as but not limited to; sewage treatment plants, sewage pumping stations, chemical manufacturing plants, plating plants, hospitals, mortuaries, car washes, medical clinics;
- (b) An approved double check valve assembly shall be installed where the substance which could backflow is objectionable but does not pose an unreasonable risk to health. An approved double check valve assembly shall be minimum protection on fire service sprinkler systems using piping material that is not approved for potable water use and/or which does not provide for periodic flow during each 24-hour period;
- (c) An approved pressure vacuum breaker or an atmospheric vacuum breaker shall be installed where the substance which could backflow is objectionable but does not pose an

unreasonable risk to health and where there is no possibility of backpressure in the downstream piping. A shutoff valve may be installed on the line downstream of a pressure vacuum breaker but shall not be installed downstream of an atmospheric vacuum breaker.

- (4) Irrigation systems may be protected by atmospheric and pressure vacuum breakers, when properly installed. These devices do not provide adequate protection if they are subject to flooding, backpressure, or if compressed air is used to winterize the system. In these situations, double check valve assemblies shall be used.
- (5) A reduced pressure principle backflow prevention device or an air gap separation shall be used in cases where chemicals are introduced into the system.
- (6) Any protective device required herein shall be a model approved by the Commission.
- (7) All backflow protection installed shall comply with the installation guidelines defined in these rules and access to such devices shall remain unrestricted at all times.
- (8) It shall be the duty of the owner of the property served to keep backflow prevention devices in good working condition at all times. It shall also be the duty of the owner of the property at any premise where backflow prevention devices are installed to have thorough inspections and leakage tests made at least once a year or more often in those instances where successive inspections indicate failure. These inspections and tests shall, at the expense of the owner of the property, be performed by a person approved by the Commission as a competent device tester. It is the responsibility of the Commission's representatives to see that these tests are made. Approved device testers may be required to notify the Commission in advance when the test is to be undertaken so that Commission representatives may witness the test. Backflow prevention devices shall be repaired, overhauled or replaced at the expense of the owner of the property whenever they are found to be defective. Records of such tests, repairs and overhauls will be maintained by the Commission, and it is the responsibility of any backflow prevention device tester performing tests and maintenance on backflow prevention devices to submit records of such tests, repairs, and overhauls to the Commission.

- (9) All presently installed backflow prevention devices which do not meet the requirements of these rules, but were approved devices for the purposes described herein at the time of installation and which have been properly maintained shall, except for the requirements under sub-section I-C. 8., be excluded from the requirements of these rules so long as they satisfactorily protect the water system. Whenever such existing device is moved from the present location or requires more than minimum maintenance, the device shall be replaced by a backflow prevention device meeting the requirements of these rules.
- (10) Backflow prevention devices which are installed to isolate premises from the public potable water system must be installed on the downstream side of the meter at or near the property line or immediately inside the building being served, but in any case must be installed before the first branch line.

23.4 Private Fire Protection Service

Backflow protection requirements are defined in "Medford Water Commission Standards for Fire Protection Systems."

23.5 Interconnection With Other Water Supplies Prohibited

- (1) The Commission shall not permit any physical connection between any other water supply and the Commission's water distribution system unless a reduced pressure principle backflow device as described in I-C. 1. j. above is installed and maintained. The Commission will immediately discontinue water service to any premises or customer where such a condition occurs until such time as the cross connection is eliminated or the required backflow prevention device is installed. Customers using the Commission's water supply and any other water supply on the same premises shall install and maintain a separate plumbing system for the Commission's water supply which shall be separated by an approved air gap, unless such reduced pressure principle backflow device is installed and maintained at the meter for the premises.

23.6 Plumbing Code

- (1) As a condition of water service, customers shall install, maintain, and operate their piping and plumbing systems in accordance with the Oregon State Plumbing Laws and Administrative Rules and, if applicable, in accordance with the City of Medford Plumbing Code.

23.7 Protection Against Circulating Flow

- (1) The Commission may refuse to service any premise with more than one service connection except that multiple service connections may be used for service to a premise under one ownership or management wherein each service connection serves a separate building, and there is no physical connection between the separate plumbing systems which would permit circulating flow at the time of application for service, and there is reasonable assurance that no future interconnection will be established.

In large industrial and commercial customer piping systems requiring multiple service connections for adequacy of supply and for fire protection, the Commission may permit such multiple connections with interconnection on the customer's premises provided that there shall be an approved double check valve assembly installed immediately downstream from each meter to prevent circulating flow.

23.8 Vaults

- (1) Vaults shall be pre-cast Utility Vault Model #676-WA-32"-2-332P, poured-in-place concrete, block wall, or approved equal. All vaults shall be well drained, constructed of suitable materials, and sized to allow for the minimum clearances established.

Lids used with pre-cast vaults, shall be Utility Vault #2-332P for non-traffic locations and #2-332P-80 style for traffic locations, or approved equals. Lids used with other vaults and non-traffic situations shall be as per Medford Water Commission's standard detail, or approved equal. Lids used with other vaults and traffic situations shall be designed by a registered engineer.

Vaults as well as lids shall be H-20 load, rated when in traffic areas, and designed by a registered engineer. Medford Water Commission provides only initial inspection and approval of vaults and appurtenances. Vaults, lids, and the backflow device are owned by the property owner, and they incur all responsibility and liability of these items. These items shall be maintained by the property owner.

Vaults shall be provided with a sump pump when in potential groundwater installations. Brass plugs are required in all device test ports in any case.