This policy is intended to regulate the installation of new backflow prevention devices in the water distribution system of the University of Massachusetts, Amherst, including the replacement of existing units. If existing units do not comply with the requirements of this policy, replacement of such units shall include such modifications as is necessary to bring the units into compliance with the requirements of this policy.

All installations shall comply with all applicable provisions of Commonwealth of Massachusetts laws and regulations, specifically including (but not limited to) 310 CMR 22.22 (cross Connection) and 248 CMR 1.00-4.00 (Uniform State Plumbing Code). This policy is intended to amplify, standardize and particularize to the Amherst Campus of the University of Massachusetts some of the more general provisions of Commonwealth Law.

This policy shall be administered by the Physical Plant Utilities Section Head. All applications will be sent to the above address for review prior to the applications being forwarded to the Town of Amherst for approval by the purveyor of water.

1. Each device needs a separate completely filled out application and the application needs to be signed- UMASS PM’s signature will be accepted.

2. The applications should be submitted during the earliest portions of the construction or renovations so that any concerns can be addressed causing the slightest of interruptions.

3. Projects with multiple backflows should engage the Town of Amherst Backflow coordinator and the University’s Physical Plant Utility representative early in the design/construction process so that any concerns can be addressed early in the project.

4. The Town of Amherst requires that each building shall have containment devices installed to insure uninterrupted service, redundant devices Must be installed.

5. Each application must include the following:
   a. A general Plumbing plan of the complete building, when installations of devices involve large or complex plumbing systems, formal prints must be submitted with a professional engineers stamp, subject to the discretion of the reviewing authority. The forms and plans shall be submitted to UMASS Physical Plant Utilities Section Head for review; if found acceptable they will be forwarded to Conor Burke, Town of Amherst D.P.W. 586 S. Pleasant ST., Amherst MA 01002
   b. A detailed installation Plan shall also be submitted of the proposed installation
      1a. Clearances in device installation
      1b. Location of upstream and downstream shutoff valves
      1c. Make, Model, size and alignment of the devices
      1d. Location of potable water lines
      1e. System, Source of equipment fed downstream of device, complete with on the secondary system (operating pressure, chemical treatment, etc.)

6. Supervisory Authority- Backflow prevention is a public health issue related to the protection of public water supplies, and as such is regulated by the Department of Environmental Protection under 310 CMR 22.22 Cross Connection Distribution System Protection. It should be noted that plumbing inspectors derive their authority from a different source- 248 CMR 10.00: Uniform State Plumbing Code), and that their approval of the plumbing connected to a backflow preventer does not include approval of the preventer itself. The DEP gives the final authority over protection of a public water supply (including the installation of backflow prevention devices) to the water supplier. Final approval of any backflow device installation on the University’s Amherst campus will therefore rest with the Town of Amherst. Physical Plant Mechanical Utilities will facilitate the scheduling this final inspection and approval.
7. Interruption of University Operations: If an installation is such that only the space and equipment in the charge and under the control of a single individual is involved, work may commence when that person’s permission is obtained. In any case where preparations to begin work will affect more than one Department, office, laboratory or other University entity, the Physical Plant Department’s normal Utility Interruption notification procedure shall be used, and work shall not commence until that procedure is complete. If, upon notification of impending shutdown of utilities, a College, Department or other entity deems the intended time or circumstances incompatible with University operation, that shall be held to control, and an adjustment of the work plan to the satisfaction of that entity shall be made.

8. Upon receipt of the application packet by the UMASS PP Utility Section Head it will be reviewed for completeness and for compliance with the Town of Amherst’s requirements. If the application is judged to be complete and in compliance the application and supporting documentation will then be forwarded to the Town of Amherst for their review and action.

9. At the time of this policy’s publication the $500.00 application fee has been waived by the Town of Amherst. Please note that the application fee can be reinstated by the Town of Amherst at any time.

10. Upon the receipt of the application, the Town will also review the application for completeness and conformance with 310 CMR 22.22 and the Town’s requirements.

11. If any concerns are noted those concerns will be forwarded to the UMASS PP Utility Section Head who will then contact the project’s representative.

12. **Testing** - When the contractor determines that the backflow installation is complete the following procedure will be followed:
   a. If the backflow device is utilized as a building protection device the UMASS PP Utility Section Head should be notified so that a UMASS Utility crew member can turn on the water up to and through the device. The UMASS Mechanical crew member will then lock out the device’s discharge valve so that the contractor can have the device pre-tested and operational so that the device will pass the Town’s backflow acceptance test. Once the device passes the contractor’s pretest of the backflow, the UMASS PP Section head should than be contacted to arrange the final testing with the Town’s representative. The Town of Amherst requires a 10 day notification so please plan accordingly so projects are not adversely affected. Upon the Town’s satisfactory backflow acceptance test, installation review and Plumbing Inspectors approval, the UMASS Mechanical lock device will be removed and the discharge valve can be opened to provide the building with potable water.
   b. If the backflow device is to be utilized to protect a specific location in a building, the water can be turned on up to and through the device at which point a UMASS Mechanical crew member will lock out the device’s discharge valve so that the contractor can have the device pre-tested and operational so that the device will pass the Town’s backflow acceptance test. Once the device passes the contractor’s pretest of the backflow, the UMASS PP Section head should then be contacted to arrange the final testing with the Town’s representative. The Town of Amherst requires a 10 day notification so please plan accordingly so projects are not adversely affected. Upon the Town’s satisfactory backflow acceptance test, installation review and Plumbing Inspectors approval, the UMASS Mechanical lock device will be removed and the discharge valve can be opened to provide the protected area with potable water.

13. Copies of the test results can be obtained by the project by request to the UMASS Physical Plant Utility Section Head.

---

**Campus-specific Regulations**

1. **Approved Devices** - Devices installed on the University campus shall comply with 310 CMR 22.22.10 (a) or 310 CMR 22.22.10 (b), or CMR 22.22.10 (c), according to the type and use of the device.

2. **Installation Requirements** - Installations shall comply with 310 CMR 22.22.11. There are some special requirements particular to the University campus and are listed in this policy.

3. **Uniformity** - For efficiency of maintenance it is desirable that new installations use backflow devise for which tools and repair parts are already on hand. The installer shall furnish one repair kit sufficient to rebuild the entire device, and if any special tools are required for the rebuilding, shall furnish such tools.

4. **ACCESS** - 310 CMR 22.22 (11)(a)(4) provides that: *the reduced pressure backflow preventer shall be located so as to permit easy access and provide adequate and convenient space for maintenance, inspection and testing.* On the University campus this provision shall be deemed to have the following components:
a. Backflow preventers shall not be installed in restricted areas, areas with special keying or other areas not normally accessible to the University labor force during normal working hours. Units serving equipment whose shutdown requires lengthy or special procedures or contacting specific individuals who may not be available must be dual installations, per 310 CMR 22.22 (11)(a)(5).
b. The installation shall provide an area for testing and maintenance.
c. The pathway from public space to the clearance volume of the device shall be, to the extent possible, free of overhead obstructions and tripping hazards, and of a width sufficient to permit the passage of workman with tools.
d. The installation shall provide clearance to permit easy connection of test equipment, removal of all parts and covers necessary for the repair of the unit, insertion and removal of parts and tools, and inspection of the device interior. Dual installations shall not obstruct one another in this regard.

5. The Town of Amherst requires all new buildings to have backflow devices on the building’s Potable Water service. In addition, since the building’s Potable water supply cannot be interrupted all building water service MUST also include a redundant backflow device to insure uninterrupted water.
Typical Backflow Preventer Installation
Clearance Volume

Dimension ‘A’: distance from wall (310 C.M.R. 22.22.11)
Dimension ‘B’: depth of unobstructed access (36”, unless waiver obtained from U.M. Mech. Utilities).
Dimension ‘C’: width of unobstructed access (36” or lay length of preventer, whichever is greater).
Dimension ‘D’: height of unobstructed access (78”, unless waiver obtained from U.M. Mech. Utilities).
Dimension ‘E’: height of preventer (310 C.M.R.22.22.11)
Notes to Piping and Supports

Note 1: **Strainers and Blowdowns**
All backflow preventers shall be provided with a strainer.
Note 2: **Blowdown Valve**

The strainer shall be capable of being tested for blockage and upstream flow pressure during the semiannual testing, without the use of special tools. The discharge from such testing shall not spray on electrical equipment or against surfaces in such a manner to cause a hazard to the tester. The open end of the blowdown valve, shall be closed with a plug or nipple and cap, which shall be made hand-tight only. Units supplied with a strainer having a blind cover shall have the strainer coupled directly to the backflow preventer body and the inlet valve upstream from the strainer.

Note 3: **Test Cocks and Adapters**

Backflow preventers shall be furnished with the four (4) test cocks, which shall be fitted with 7/16-20 JIC 37° male flare adapters and protective caps. Test cocks shall be so oriented as to be accessible after installation is complete.

Note 4 **Backup Valve**

The outlet valve provided with a backflow preventer is part of the Test procedure and must be replaced when it fails to provide drop tight Shutoff. To avoid the need to drain the system when this happens, another valve with equivalent opening shall be provided downstream of the outlet valve for piping systems with nominal pipe sizes between ½” through 2” (inclusive). In parallel installations, a single valve on the common discharge does not satisfy this requirement.

Note 5 **Valve Replacement Union**

Devices having screwed pipe connections shall include a union between the outlet and backup valve.

Note 6 **Indirect Waste**

All backflow preventers having a relief vent or spillage port shall be provided with an air gap and an indirect waste line to an adjacent floor drain or other properly trapped and vented indirect waste receiver. Cup sinks installed specifically to receive the discharge from a backflow preventer must be individually approved by Mechanical Utilities.