# Oregon Health Division
# Drinking Water Program

Rules and Statutes Relating to

# Cross Connection Control

OAR 333-061-0070, 0071, 0072, 0073, and 0074 effective

July 15, 1999

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**333-061-0020 DEFINITIONS**

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(4) "Air Gap Separation" means the physical vertical separation between the free flowing discharge end of a potable water supply pipe line and the open or non-pressure receiving vessel.

(5) "Approval" or "Approved" means approved in writing.

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(9) "Atmospheric Vacuum Breaker (AVB)" means a device consisting of an air inlet valve, a check seat and an air inlet port(s).

(10) "Auxiliary Water Supply" means any supply of water used to augment the supply obtained from the public water system which serves the premises in question.

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(13) "Backflow" means the flow in the direction opposite to the normal flow caused by backsiphonage or back pressure. Backsiphonage is caused by negative or reduced pressure in the supply piping and back pressure occurs when the potable supply piping is connected to a system or fixture which exceeds the operating pressure of the supply piping.

(14) "Backflow Preventer" means an airgap, AVB, PVBA, SVBA, DCVA or RPBA.

(15) "Backflow Prevention Assembly" means a backflow prevention device such as a pressure vacuum breaker, spill resistant pressure vacuum breaker, a double check valve or a reduced pressure principle device, and the attached shut off valves on the inlet and outlet ends of the device assembled as a complete unit.

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(20) "Check Valve" means a valve which allows flow in only one direction.

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(23) "Community Water System" means a public water system which has 15 or more service connections used by year-round residents, or which regularly serves 25 or more year-round residents.

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(32) "Cross Connection" means any link or channel between the piping which carries drinking water and the piping or fixtures which carry other water or other substances.

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(40) "Division" means the Health Division of the Oregon Department of Human Resources.

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(43) "Double Check Valve Assembly (DCVA)" means an assembly of two independently acting check valves with shut-off valves on each side of the check valves and test cocks for checking the water tightness of each check valve.

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(81) "Non-Transient Non-Community Water System (NTNC)"means a public water system that is not a Community water system and that regularly serves at least 25 of the same persons over 6 months per year.

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(98) "Pressure Vacuum Breaker Assembly (PVBA)" means an assembly consisting of an independently operating, internally loaded check valve and an independently operating loaded air inlet valve located on the discharge side of the check valve.

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(106) "Reduced Pressure Backflow Assembly (RPBA)" means a device for preventing backflow which has two check valves, a differential relief valve located between two check valves, two shut-off valves, one on the upstream side and the other on the downstream side of the check valves, and four test cocks for checking the watertightness of the check valves and the operation of the relief valve.

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(116) "Service Connection" means the piping connection by means of which water is conveyed from a distribution main of a public water system to a user's premises. For a Community water system, the portion of the service connection which conveys water from the distribution main to the user's property line, or to the service meter where provided, is under the jurisdiction of the water supplier.

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(119) "Spill Resistant Pressure Vacuum Breaker Assembly (SVBA)" is one type of Pressure Vacuum Breaker Assembly.

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(128) "Transient Non-Community Water System" means a public water system which serves a transient population of 25 or more persons.

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## 333-061-0070 CROSS CONNECTION CONTROL REQUIREMENTS

(1) Water suppliers shall undertake programs for controlling and eliminating cross connections:
  (a) In Community water systems, water suppliers shall carry out a local cross connection program consisting of the following elements:
    (A) Local ordinance or enabling authority which authorizes discontinuing water service to premises for failure to install an approved backflow device or conduct a required annual test on a backflow device.
    (B) A written program plan for community water systems with 300 or more service connections which includes the following:
      (i) A master list of facilities and premises which are subject to inspection, and the hazard level for each.
      (ii) A current list of cross connection control staff and work responsibilities.
      (iii) Provision and schedule for an initial inspection, the installation and annual testing of each required backflow assembly, and a periodic re-inspection of each required backflow assembly.
    (C) The water supplier shall maintain current records of backflow assemblies installed, inspections completed, and backflow assembly test results.
    (D) The water supplier shall prepare and submit an annual written report to the Division using a format to be provided by the Division.
  (b) In Community water systems where the water supplier has reasonable cause to believe that an existing or potential cross connection is located on the user's premises, the water supplier shall deny or discontinue service to those premises until an appropriate backflow prevention assembly is installed or until the cause of the hazard is eliminated;
  (c) Where the water supplier owns and/or operates a Transient or Non-Transient Non-Community water system, the water supplier shall assure that cross connections do not exist or are isolated from the potable water system with a Division-approved backflow preventer. Inspections to assure compliance with this section may be made by the licensing agency where licensing is required or by the Consumer and Business Services, Building Codes Division under ORS 447.020.
(2) In Community water systems having 300 or more service connections, water suppliers shall make provision for at least one person certified in cross connection control inspection to carry out the cross connection control program unless specifically exempted by the Division.
(3) Whenever a water user or the owner of the premises obtaining water from a public water system treats the water in any way or adds any chemical or substance to the water, they shall notify the water supplier.
(4) In Community water systems, water suppliers shall ensure that Division-approved backflow prevention assemblies are installed at 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 in proximity to potable water piping;

(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 connections exist.

(5) In Transient or Non-transient Non-community water systems, water suppliers shall ensure that Division-approved backflow prevention assemblies are installed at or near the points of water use where potential cross connections are identified.

(6) In all public water systems, water suppliers shall ensure that the type of backflow prevention required under sections (4) and (5) of this rule, are at least 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 backflow (RPBA) 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, and medical clinics;
(b) An approved double check valve assembly (DCVA) shall be installed where any substance other than potable water could backflow but does not pose an unreasonable risk to health. An approved double check valve assembly shall be the minimum protection for fire sprinkler systems using piping material that is not approved for potable water use and/or which does not provide for periodic flow through during each 24 hour period.
(c) An approved pressure vacuum breaker assembly (PVBA), spill resistant vacuum breaker assembly(SVBA) or an atmospheric vacuum breaker (AVB) 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.

(7) All backflow prevention assemblies required under this section shall be of a type and model approved by the Division and the Division shall maintain a list of backflow prevention assemblies approved for use in Oregon.

(8) All backflow prevention assemblies installed after the effective date of these rules shall conform to the following specifications:
(a) All testable assemblies shall meet the specifications of construction, evaluation and approval of backflow prevention assemblies as specified in **Section 10, Manual of Cross-Connection Control, 9th Edition, December, 1993**. Published by the **Foundation for Cross-Connection Control and Hydraulic Research, University of Southern California and AWWA Standards C510-92 and C511-92**.
(b) All atmospheric vacuum breakers shall meet the specifications of construction, evaluation and approval of backflow prevention devices as specified in the **State of Oregon Plumbing Specialty Code**.

(9) All backflow prevention assemblies shall be installed in accordance with Sections (1) through (4) of OAR 333-061-0071.

(10) The water user or the owner of the premises where one or more reduced pressure assembly, double check valve assembly, pressure vacuum breaker, or spill resistant vacuum

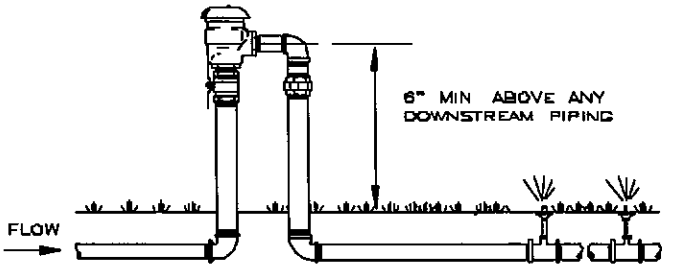
breaker have been installed shall have the assemblies tested by a certified tester at least once per year. Assemblies installed at facilities which pose an extreme health risk and assemblies which repeatedly fail shall be tested on a more frequent basis as determined by the local water purveyor. Backflow prevention assemblies found not to be functioning properly shall be promptly repaired by the water user or owner of the assembly or the water supplier may deny or discontinue service as provided in subsection (1)(b) of this rule. After a backflow assembly is repaired, installed or moved, the assembly shall be tested before use. Reports on the tests shall be prepared by the certified tester and copies of the reports shall be provided to the water user or the owner of the premises and to the water supplier. Tests performed by certified testers shall be in conformance with procedures established by the **Foundation for Cross Connection Control and Hydraulic Research, Manual of Cross Connection Control, 9th Edition, December, 1993, University of Southern California.**

(11) Water suppliers may adopt requirements which are more stringent than those set forth in this rule.

(12) Backflow prevention assemblies installed before the effective date of these rules which were approved at the time they were installed but are not on the current list of Division-approved assemblies maintained by the Division, shall be permitted to remain in service provided they are properly maintained, are commensurate with the degree of hazard as set forth in OAR 333-061-0070(6), are tested at least annually, and perform satisfactorily. When assemblies of this type are moved, or require more than minimum maintenance or are on services that are modified, changed size or remodeled, they shall be replaced by assemblies which are on the Division list of approved assemblies.

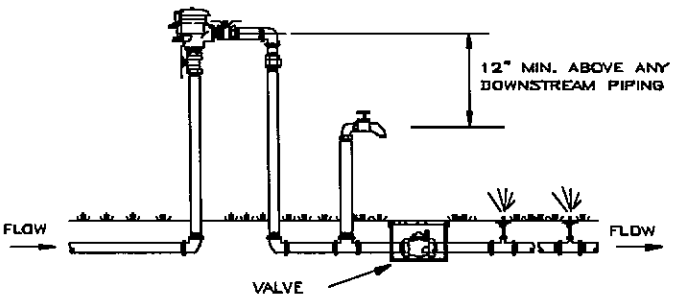
## 333-061-0071 BACKFLOW ASSEMBLY INSTALLATION AND OPERATION STANDARDS

(1) An Atmospheric Vacuum Breaker(AVB) shall:




(a) Have absolutely no means of shut-off on the downstream or discharge side of the atmospheric vacuum breaker;
(b) Not be installed in dusty or corrosive atmopheres;
(c) Not be installed where subject to flooding;
(d) Be installed a minimum of six inches above the highest downstream piping and/or outlets;
(e) Be used intermittently;
(f) Not be pressurized for more than 12 hours in any 24 hour period; and
(g) Not be subject to any backpressure.

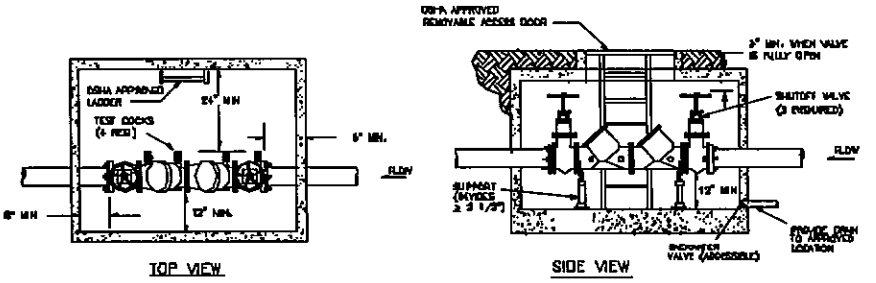
(2) A Pressure Vacuum Breaker Assembly (PVBA) or Spill-Resistant Vacuum Breaker Assembly (SVBA) shall:




(a) Be installed where occasional water discharge from the assembly caused by pressure fluctuations will not be objectionable;
(b) Have adequate spacing available for maintenance and testing;
(c) Not be subject to flooding;
(d) Be installed a minimum of twelve inches above the highest downstream piping and/or outlets;
(e) Have absolutely no means of imposing backpressure by pump or other means. The downstream side of the PVBA or SVBA may be maintained under pressure by a valve; and
(f) Be used to protect against back siphonage only, not backpressure.

(3) A Double Check Valve Assembly (DCVA) or Double Check Detector Assembly (DCDA):

MINIMUM CLEARANCES FOR DCVA INSTALLATION




(a) Shall conform to bottom and side clearances when the assembly is installed inside of a building;

(b) May be installed vertically as well as horizontally provided that the assembly:
  (A) Is internally spring loaded -- not weighted checks;
  (B) Is 4 inches or smaller, or is specifically listed in the Division's Approved Backflow Prevention Assembly List;
  (C) Is recommended by the manufacturer for vertical installation; and
  (D) Has the normal flow upward.

(c) May be installed below grade in a vault provided water tight, fitted plugs are installed in the test cocks, but the assembly shall not be subject to continuous immersion;

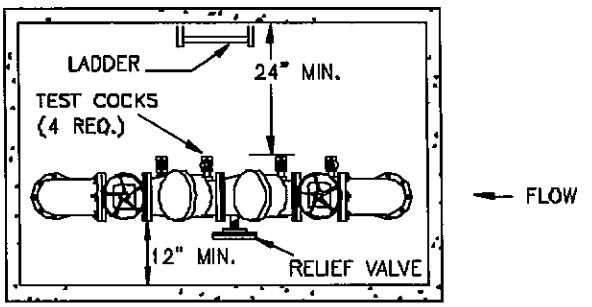
(d) Shall not be installed at a height greater than 5 feet unless there is a permanently installed platform meeting **Occupational Safety and Health (OSHA)** standards to facilitate servicing the assembly;

(e) May be installed with reduced clearances if they are 2 inches or smaller, provided that they are accessible for testing and repairing and approved by the water purveyor;

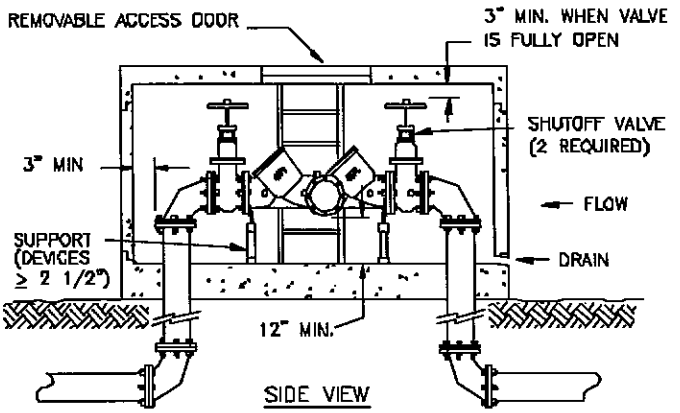
(f) Shall have adequate drainage provided except that the drain shall not be connected to a sanitary or storm water drain. Installers shall check with local utilities for additional requirements; and

(g) Shall be protected from freezing when necessary.

(4) A Reduced Pressure Principle Backflow Assembly (RPBA) or Reduced Pressure Principle Detector Assembly (RPDA):




TOP VIEW




SIDE VIEW

(a) Shall conform to bottom and side clearances when the assembly is installed inside of a building. Access doors may be provided on the side of an above-ground vault;
(b) Shall always be installed horizontally, never vertically unless they are specifically approved for vertical installation;
(c) Shall always be installed above the 100 year (1%) flood level unless approved by the local authority;
(d) Shall never have extended or plugged relief valves ;
(e) Shall be protected from freezing when necessary;
(f) Shall be provided with an air gapped drain;
(g) Shall not be installed in an enclosed vault or box unless a bore-sighted drain to daylight is provided;
(h) May be installed with reduced clearances if they are 2 inches or smaller and are accessible for testing and repairing and approved by the water purveyor; and
(i) Shall not be installed at a height greater than 5 feet unless there is a permanently installed platform meeting Occupational Safety and Health (OSHA) standards to facilitate servicing the assembly.

## 333-061-0072 BACKFLOW ASSEMBLY TESTER CERTIFICATION

(1) Certification. A person shall not perform tests on backflow prevention assemblies unless they are certified as a backflow assembly tester by the Oregon Health Division.

(2) General requirements for initial certification.

(a) Applicants for backflow assembly tester certificates shall:

(A) Attend and successfully complete a Division-approved Backflow assembly tester training course within 12 months prior to the Division's receipt of the applicant's completed application:

(i) A minimum score of 75% is required to pass the Division-approved backflow assembly tester written examination;

(ii) A minimum score of 90% is required to pass the Division-approved backflow assembly tester hands-on proficiency examination;

(B) Be registered with the Construction Contractor's Board or licensed by the Landscape Contractor's Board as required by ORS 448.279(2);

(C) Have a high school diploma or equivalent;

(D) Submit a completed application form to the Division The application is not complete until all of the required application information is submitted to the Division; and

(E) Submit the appropriate application fee, as set forth in OAR 333-061-0072(5), to the Division with the completed application form.

(3) General requirements for certification renewal.

(a) All backflow assembly tester certificates will expire on June 30 every two years beginning June 30, 1995.

(b) A tester must renew their backflow assembly tester certificate within 12 months of the expiration date on the certificate. An applicant/tester who fails to renew within the above 12 month period, must meet the requirements of a new applicant as set forth in section (2) of this rule.

(c) Applicants for renewal of a Backflow assembly tester certificate shall:

(A) Attend and successfully complete a Division-approved tester training course or Division-approved tester recertification course within the previous two years, unless the applicant is a Division-approved backflow assembly tester instructor. Division-approved backflow assembly tester instructors shall attend and successfully complete a Division-approved tester recertification course provided by a training facility other than their own, or obtain 0.5 CEUs pertaining to cross connection control within the previous two years. A renewal applicant shall not use a tester recertification course to renew a certificate if the recertification course was used to obtain a previous certificate, unless the tester recertification course was used to obtain reciprocity within 12 months of the Division's receipt of the renewal application:

(i) To successfully complete a backflow assembly tester course, the backflow assembly tester shall:

(I) Achieve a minimum score of 75% on the Division-approved backflow assembly tester written examination, and;

(II) Achieve a minimum score of 90% on the Division-approved backflow assembly tester hands-on proficiency examination.

(ii) To successfully complete a backflow assembly tester recertification class, the backflow assembly tester shall:
(I) Achieve a minimum score of 75% on the Division-approved backflow assembly tester written quiz, and;
(II) Achieve a minimum score of 90% on the Division-approved backflow assembly tester hands-on proficiency examination.

(B) Have test gauges, used by the tester for backflow assembly testing, tested for accuracy verification within 12 months prior to the Division's receipt of the renewal form, unless the applicant is a Division-approved backflow assembly tester instructor. Division-approved backflow assembly tester instructors shall have test gauges used in their training courses tested for accuracy verification within 12 months prior to the Division's receipt of the renewal form;

(C) Be registered with the Construction Contractor's Board or licensed by the Landscape Contractor's Board as required by ORS 448.279(2);

(D) Submit a completed renewal form to the Division. The application is not complete until all of the required application information is submitted to the Division; and

(E) Submit the appropriate application fee, as set forth in OAR 333-061-0072(5), to the Division with the completed application form;

(4) Reciprocity. The Division may grant a backflow assembly tester certificate based on reciprocity if the Division determines that the issuing State or entity has standards and qualifications pertaining to backflow assembly testers that are equivalent to the Division's standards and qualifications, and the applicant/tester meets the requirements set forth in this section.

(a) A person seeking certification based on reciprocity shall:

(A) Have a current backflow assembly tester certificate or equivalent from another State or other entity;

(B) Attend and successfully complete a Division-approved tester recertification course within the 12 months prior to the Division's receipt of the applicant's/tester's completed application:

(i) A minimum score of 75% is required to pass the Division-approved backflow assembly tester written quiz;

(ii) A minimum score of 90% is required to pass the Division-approved backflow assembly tester hands-on proficiency examination.

(C) Have test gauges, used by the tester for backflow assembly testing, tested for accuracy verification within 12 months prior to the date of the Division's receipt of the reciprocity form;

(D) Be registered with the Construction Contractor's Board or licensed by the Landscape Contractor's Board as required by ORS 448.279(2);

(E) Have a high school diploma or equivalent;

(F) Submit a completed reciprocity form. The reciprocity form is not complete until all of the required information is submitted to the Division; and

(G) Submit the appropriate application fee, as set forth in OAR 333-061-0072(5), to the Division with the completed application form.

(5) Fees.

(a) Applicants must pay all fees by check or money order made payable to the Oregon Health Division.

(b) The Division will not refund any fees once it has begun processing the application.

(c) The fees are:

| | | |
|---|---|---|
| (A) | Initial Certification (two years) | $70 |
| (B) | Certificate Renewal (two years) | $70 |
| (C) | Reciprocity Review | $35 + Initial Certification fee |
| (D) | Reinstatement | $50 + Certificate Renewal fee |
| (E) | Combination Certificate Renewal | $110 |

(d) Initial certification fees shall be prorated to the nearest year for the remainder of the two year certification period.

(e) The Division shall apply the Combination Certificate Renewal Fee when an applicant simultaneously applies for renewal of their backflow assembly tester and cross connection inspector certifications.

(6) Enforcement.

(a) The Division may deny an initial application for certification, application for renewal of certification, application for certification based on reciprocity or revoke a certification if:

(A) The applicant/tester has provided false information to the Division;

(B) The applicant's/tester's certification that was issued by another jurisdiction or entity was revoked within the prior twelve months;

(C) The applicant/tester has permitted another person to use the applicant's/tester's certificate number;

(D) The applicant/tester has failed to properly perform backflow assembly testing;

(E) The applicant/tester has falsified a test report;

(F) The applicant/tester has failed to obtain and maintain a Construction Contractor's Board registration or Landscape Contractor's Board license as required by ORS 448.279(2); or

(G) The applicant/tester has failed to comply with these rules or other applicable Federal, state or local laws or regulations.

(b) A person whose initial or renewal application has been denied, whose application for reciprocity has been denied or whose certification has been revoked has the right to appeal under the provisions of Chapter 183, Oregon Revised Statutes

(c) Applicants/testers who have been denied initial, renewal or reciprocity certification may not reapply for certification for one year after the date of denial of certification.

**333-061-0073 CROSS CONNECTION INSPECTOR CERTIFICATION**

(1) Certification. A person shall not administer a cross connection control program for a Community Water System that serves 300 or more service connections unless they are certified as a cross connection inspector by the Oregon Health Division.

(2) General requirements for initial certification.

(a) Applicants for cross connection inspector certificates shall:

(A) Attend and successfully complete a Division-approved cross connection inspector training course within 12 months prior to the Division's receipt of the applicant's completed application. A minimum score of 85% is required to pass the Division-approved cross connection inspector written examination;

(B) Be registered with the Construction Contractor's Board or licensed by the Landscape Contractor's Board as required by ORS 448.279(2);

(C) Have a high school diploma or equivalent;

(D) Submit a completed application form to the Division The application is not complete until all of the required application information is submitted to the Division; and

(E) Submit the appropriate application fee, as set forth in OAR 333-061-0073(5), to the Division with the completed application form.

(3) General requirements for certification renewal.

(a) All cross connection inspector certificates will expire on June 30 every two years beginning June 30, 1995.

(b) An inspector must renew their cross connection inspector certificate within 12 months of the expiration date on the certificate. An applicant/inspector who fails to renew within the above 12 month period, must meet the requirements of a new applicant as set forth in section (2) of this rule.

(c) Applicants for renewal of a cross connection inspector certificate shall:

(A) Attend a Division-approved inspector training course or Division-approved inspector update or obtained 0.5 CEUs pertaining to cross connection control within the previous two years, unless the applicant is a Division-approved cross connection inspector instructor. Division-approved cross connection inspector instructors shall attend and successfully complete a Division-approved inspector update provided by a training facility other than their own, or obtain 0.5 CEUs pertaining to cross connection control within the previous two years. A renewal applicant shall not use an inspector update or CEUs to renew a certificate if the inspector update or CEUs were used to obtain a previous certificate, unless the inspector update was used to obtain reciprocity within 12 months of the Division's receipt of the renewal application. To successfully complete a cross connection inspector course a minimum score of 85% is required to pass the Division-approved cross connection inspector written examination.

(B) Be registered with the Construction Contractor's Board or licensed by the Landscape Contractor's Board as required by ORS 448.279(2);

(C) Submit a completed renewal form to the Division. The application is not complete until all of the required application information is submitted to the Division; and

(D) Submit the appropriate application fee, as set forth in OAR 333-061-0073(5), to the Division with the completed application form;

(4) Reciprocity. The Division may grant a cross connection inspector certificate based on reciprocity if the Division determines that the issuing State or entity has standards and qualifications pertaining to cross connection inspectors that are equivalent to the Division's standards and qualifications, and the applicant/inspector meets the requirements set forth in this section.

(a) A person seeking certification based on reciprocity shall:

(A) Have a current cross connection inspector certificate or equivalent from another State or other entity.

(B) Attend and successfully complete a Division-approved inspector update within the 12 months prior to the Division's receipt of the applicant's/inspector's completed application;

(C) Be registered with the Construction Contractor's Board or licensed by the Landscape Contractor's Board as required by ORS 448.279(2);

(D) Have a high school diploma or equivalent;

(E) Submit a completed reciprocity form. The reciprocity form is not complete until all of the required information is submitted to the Division; and

(F) Submit the appropriate application fee, as set forth in OAR 333-061-0073(5), to the Division with the completed application form.

(5) Fees.

(a) Applicants must pay all fees by check or money order made payable to the Oregon Health Division.

(b) The Division will not refund any fees once it has begun processing the application.

(c) The fees are:

| | | |
|---|---|---|
| (A) | Initial Certification (two years) | $70 |
| (B) | Certificate Renewal (two years) | $70 |
| (C) | Reciprocity Review | $35 + Initial Certification fee |
| (D) | Reinstatement | $50 + Certificate Renewal fee |
| (E) | Combination Certificate Renewal | $110 |

(d) Initial certification fees shall be prorated to the nearest year for the remainder of the two year certification period.

(e) The Division shall apply the Combination Certification Renewal Fee when an applicant simultaneously applies for renewal of their backflow assembly tester and cross connection inspector certifications.

(6) Enforcement.

(a) The Division may deny an initial application for certification, application for renewal of certification, application for certification based on reciprocity or revoke a certification if:

(A) The applicant/inspector has provided false information to the Division;

(B) The applicant/inspector has had their certification that was issued by another jurisdiction or entity revoked within the prior twelve months;

(C) The applicant/inspector has permitted another person to use the applicant's/inspector's certificate number;

(D) The applicant/inspector has failed to obtain and maintain a Construction Contractor's Board registration or Landscape Contractor's Board license as required by ORS 448.279(2); or

(E) The applicant/inspector has failed to comply with these rules or other applicable Federal, state or local laws or regulations.

(b) A person whose initial or renewal application has been denied, whose application for reciprocity has been denied or whose certification has been revoked has the right to appeal under the provisions of Chapter 183, Oregon Revised Statutes.

(c) Applicants/inspectors who have been denied initial, renewal or reciprocity certification may not reapply for certification for one year after the date of denial of certification.

**333-061-0074 CROSS CONNECTION INSTRUCTOR AND TRAINING REQUIREMENTS**

(1) Cross Connection Training Program, Course, and Instructor Criteria

(a) In order to qualify as a Division-approved cross connection training program, the following requirements must be met:

(A) The training program must keep permanent records on attendance and performance of each student that enrolls in a course.

(B) The training program must maintain a proper ratio of student/training equipment. A maximum ratio of 3 students for each backflow assembly test station is allowed for the tester training course.

(C) The training program must provide uniform training at all course locations. The training schedule must be set in advance and the schedule must be submitted to the Division quarterly for review and publication.

(D) The training program shall provide the training materials necessary to complete the course. The training materials must be updated annually and submitted to the Division for approval.

(E) The training program must have the following minimum training equipment available for each course:

(i) Each test station for tester training courses and recertification courses shall include an operating pressure vacuum breaker, double check valve assembly, and a reduced pressure backflow assembly with appropriate test gauges for each assembly. An assembly failure simulator that is capable of simulating leaking check valves, shut off valves, and relief valve failures shall also be provided.

(ii) The training aids for the tester and inspector training courses shall include the pressure vacuum breaker, atmospheric vacuum breaker, double check valve assembly, the reduced pressure backflow assembly, and a variety of test gauges.

(F) The training program must maintain a uniform course curriculum according to subsection (b) of this section, and maintain a uniform instructor criteria according to subsection (c) of this section, subject to approval by the Division.

(b) In order to qualify as a cross connection inspector training course or update, or backflow assembly tester training course or recertification, the following requirements must be met:

(A) Requirements for the cross connection inspector training course:

(i) The course duration must be a minimum of 30 hours of training.

(ii) The course content shall contain but is not limited to the following topics:

(I) Definitions, identification of cross connection hazards, and hydraulics of backflow;

(II) Approved cross connection control methods, backflow assembly specifications, and testing methods used for approved backflow assemblies;

(III) Cross connection control requirements for public water systems, implementation of a cross connection control program, and writing a local cross connection control ordinance;

(IV) Public relations and record keeping requirements for an effective cross connection control program;

(V) Facility water use inspection techniques and hands-on inspection of local facilities to identify actual or potential cross connections;

(VI) Cross connection control program enforcement and managing a backflow assembly tester program;

(VII) Review and discussion of inspector safety issues.

(iii) A minimum score of 85% is required to pass the Division-approved cross connection inspector written examination.

(B) Requirements for the backflow assembly tester training course:

(i) The course duration must be a minimum of 40 hours of training;

(ii) The course content shall contain but is not limited to the following topics:

(I) Definitions, identification of cross connections, and hydraulics of backflow;

(II) Hazards associated with backflow contamination of potable water, approved cross connection control methods, and cross connection control program requirements for public water systems;

(III) Backflow assembly approval requirements, specifications and installation criteria for approved backflow assemblies, and backflow assembly repair techniques;

(IV) Complete disassembly and reassembly of each type of backflow prevention assembly;

(V) Hands-on demonstration of the correct test procedure and troubleshooting for each type of backflow prevention assembly, and diagnosis of two failure and/or abnormal conditions during the hands-on backflow assembly test of each type of backflow prevention assembly;

(VI) Test gauge calibration methods;

(VII) Discussion of tester safety issues.

(iii) A minimum score of 75% is required to pass the Division-approved backflow assembly tester written examination.

(iv) A minimum score of 90% is required to pass the Division-approved backflow assembly tester hands-on proficiency examination.

(C) Requirements for the cross connection inspector update:

(i) The course duration must be a minimum of 5 hours of training.

(ii) The course content shall contain but is not limited to the following topics:

(I) Review of cross connection regulations.

(II) Review and discussion of recent backflow incidents and identification of cross connections.

(III) Review and discussion of inspector safety issues.

(D) Requirements for backflow assembly tester recertification:

(i) The course duration must be a minimum of 3 hours of training excluding examination time;

(ii) The course content shall contain, but is not limited to, the following topics:

(I) Review of cross connection regulations;

(II) Review of approved test procedures for backflow assemblies;

(III) Hands-on demonstration of the correct test procedures for each type of backflow prevention assembly;

(IV) The correct student diagnosis and explanation of two failure and/or abnormal conditions during the hands-on backflow assembly test of each type of backflow prevention assembly;

(V) Review and discussion of tester safety issues;

(VI) Written quiz covering Oregon cross connection regulations.

(iii) A minimum score of 75% is required to pass the Division-approved backflow assembly tester written quiz;

(iv) A minimum score of 90% is required to pass the Division-approved backflow assembly tester hands-on proficiency examination.

(c) Cross connection training instructor qualifications criteria:

(A) To be eligible as an instructor for the cross connection inspector training course or inspector update, the following experience in the backflow field is required:

(i) Must be currently certified as a cross connection inspector in Oregon.

(ii) Must have two years experience in enforcement of cross connection control requirements, or as a certified inspector, or in a related field or related experience subject to approval by the Division.

(iii) Must participate in two complete cross connection inspector training courses as a student instructor assigned to teach a portion of the curriculum. A student instructor training program schedule must be submitted to the Health Division for approval before training begins.

(iv) Must receive a recommendation from the instructor of record for approval as an instructor. An unfavorable recommendation must be documented by supporting information and may be challenged by the trainee or by the Division.

(v) Must attend at least one instructor update meeting provided by the Division each year.

(B) To be eligible as an instructor for the backflow assembly tester training course or tester recertification, the following experience in the backflow field is required:

(i) Must be currently certified as a backflow assembly tester in Oregon.

(ii) Must have two years experience as a certified tester and experience installing, testing assemblies, or as a vocational instructor, or related field or experience subject to approval by the Division.

(iii) Must participate in two complete backflow assembly tester training courses as a student instructor assigned to teach a portion of the text curriculum and the hands-on proficiency portion of the curriculum. A student instructor training program schedule must be submitted to the Health Division for approval before training begins.

(iv) Must receive a recommendation from the instructor of record for approval as an instructor. An unfavorable recommendation must be documented by supporting information and may be challenged by the trainee or by the Division.

(v) Must attend at least one instructor update meeting provided by the Division each year.

(C) The Division shall maintain a list of qualified instructors.

## 166-200-0110 PUBLIC WORKS-OPERATIONS AND MAINTENANCE RECORDS

(1) Backflow Prevention Device Test Records: Records documenting test results on backflow prevention devices designed to protect the city water system from pollution related to substances backing into water lines. Information usually includes date, type and size of device, serial number, location, test records, line pressure, name of tester, name and address of device owner, and related data. (Minimum retention: 10 years).

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(4) Cross Connection Control Survey Records: Records documenting the monitoring of potential or actual water system health hazards from pollution entering water pipes from other pipes. Records may include reports, surveys, checklists, and related documents. Information often includes address, contact person, business name, date, inspector, type of facility, description of protection, comments, corrections made, and other data. (Minimum retention: 1 year after disconnection or 10 years, whichever is longer).

**1997 Oregon Revised Statutes**
**Chapter 448**
**1997 EDITION**

## WATER SYSTEMS

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(Certification of Inspectors and Testers)

448.279 Certification of inspectors of cross connections and testers of backflow prevention device assemblies; fees; payment of costs. (1) The Health Division by rule shall establish a certification program for persons who inspect cross connections or test backflow prevention device assemblies. The program shall include minimum qualifications necessary for a person to be certified to:

(a) Conduct a cross connection inspection; and

(b) Test a backflow prevention device assembly.

(2) Except for an employee of a water supplier as defined in ORS 448.115, a person certified under this section shall:

(a) Register as a construction contractor with the Construction Contractors Board as provided under ORS chapter 701; or

(b) Become licensed as a landscape contractor as provided under ORS 671.510 to 671.710.

(3) In conjunction with the certification program established under subsection (1) of this section, the Health Division may establish and collect a fee from an individual requesting certification under the program. A fee imposed under this subsection shall:

(a) Not be refundable; and

(b) Not exceed the cost of administering the certification program of the division for which purpose the fee is established, as authorized by the Legislative Assembly within the budget of the division and as the budget may be modified by the Emergency Board.

(4) All moneys collected by the Health Division under this section shall be deposited in the General Fund to the credit of an account of the Health Division. Such moneys are continuously appropriated to the division to pay the cost of administering the certification program established pursuant to subsections (1) and (3) of this section. [1993 c.565 ss.2,3; 1997 c.398 s.1] (Civil Penalties)