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UNIVERSITY
OF SOUTHERN
CALIFORNIA

Foundation for
Cross-Connection
Control and
Hydraulic Research

CROSS TALK

Winter 2003

Approved Assemblies

The Foundation Office receives calls regularly regarding the approval status of a backflow preventer under certain circumstances. Most commonly a caller will seek to determine if an assembly is approved if installed in the vertical orientation.

The Foundation's position on the approval status of assemblies is that the assembly must be installed in the orientation under which the assembly was submitted, tested and approved. Therefore, only those assemblies submitted, tested and approved in the vertical orientation may be installed in the vertical orientation. *The List of Approved Backflow Prevention Assemblies* details the orientation under which each assembly is approved. One will notice on the List some assemblies are listed as "vertical-up inlet vertical-up outlet," or the assembly may include a note, "horizontal and vertical up." Those assemblies, which do not have such a notation, are approved in the horizontal orientation only. The Foundation will only evaluate assemblies in the orientation(s) requested by the manufacturer.

Another question that frequently arises is the installation of an assembly rotated on its axis. Unless a specific notation indicating that this is a permissible installation accompanies the assembly's listing on the List, the assemblies may not be rotated on its axis without invalidating the Foundation's approval.

continued on page three

Hosting a Course

Hosting a Foundation Tester or Specialist course is surprisingly easy and can be advantageous for any Foundation



Member. Hosting a course gives any Member the opportunity to have employees involved with cross-connection control and backflow prevention informed about the latest developments in the field. There is no cost for the hosting agency to host a Foundation Training Course. The hosting organization will also receive complimentary registration for two.

The Tester Course

The Foundation's *Course for the Training of Backflow Prevention Assembly Testers* is designed to train the attendees in the intricacies of field-testing the double check valve assembly, the reduced pressure principle backflow prevention assembly, the pressure vacuum breaker assembly and the spill-resistant vacuum breaker assembly. Some basic hydraulics and concepts of backflow are

continued on page three

I n s i d e C r o s s T a l k

Household Cross-Connections • New Members
Approved Assemblies • Hosting a Course

Foundation Membership

The Foundation's Membership Program provides many benefits to the Members of the Foundation. These include: twenty percent discounts on Foundation Training courses for any employee of the Member company/organization, the *List of Approved Backflow Prevention Assemblies*, printed quarterly, and access to the up-to-the-minute version of the List for those Members with Internet access.

Members are encouraged to call the Foundation with technical questions. The Foundation's Engineering Staff is available to assist Members with the various aspects of field testing backflow preventers, installing backflow preventers, administering their cross-connection control program.

Albuquerque, City of
Alhambra, City of
California. Dept. of Forestry
Diamond Head Plumbing
Fire Pump Testing Company, The
Flow-Rite Plumbing
George Plumbing Co, Inc.
Global Span Products
Grapevine, City of
Port St. Lucie Utility, City of
Jim & Mario's Certification Classes
Kansas City Backflow
R4 Enterprises, Inc.
Silver City, Town of
South Dakota Rural Water Assoc.
Steve's Plumbing, Inc.
Test Gauge Ind. Inc.
Verde Valley Medical Center
Water Resource Protection Service
Wolverine Fire Protection Co.
Woodland, City of

Contacting the Foundation

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213 740 8399

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www.usc.edu/fccchr

The Foundation accepts Purchase Orders via mail or fax and credit card orders (Visa, MasterCard, Discover) via telephone and the Web.

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Approved Assemblies Hosting a Course

continued from page one

Again, this is due to the fact that the assembly has not been evaluated while rotated on its axis.

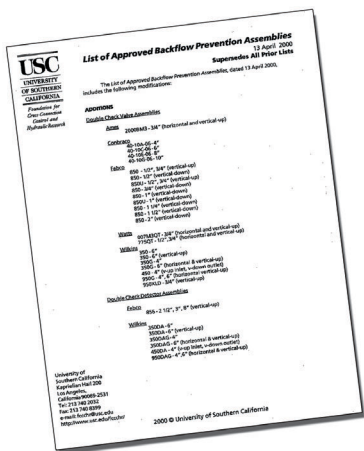
Another question is, “can the shutoff valve be rotated from the body of the assembly?” This question usually arises when a shutoff valve needs to be rotated in order to get the assembly to fit into a specific installation location.

This is primarily for the 2-1/2” and larger assemblies.

The Foundation has determined that rotating the shutoff valve no more than one

bolt hole will not affect the operation of the assembly and will, therefore, maintain the Foundation’s approval. Rotating the shutoff valve more than one bolt hole may effect the operation of the shutoff valve. As an example, if the shutoff valve were to be rotated such that it pointed downward, debris may settle in the bonnet of the shutoff valve such that the shutoff valve may not open fully.

It should be noted that assemblies under certain conditions may have the Foundation’s approval invalidated, yet the alteration may not affect the ability of the assembly to prevent backflow. One of these conditions may be the relocation of



continued on page five

Hosting a Course

continued from page one

discussed, but the main focus of this course is on testing and troubleshooting the backflow prevention assemblies. Following are the main items to consider in the decision to host a Foundation Tester Course:

Meeting Place:

The morning meeting area should be in a room large enough to accommodate at least twenty-six (26) attendees of the five-day course. The room should have a blackboard with chalk or a greaseboard with pens for the lectures. The room should also be suitable for multimedia presentations. The afternoon sessions should be held in a suitable place where the course attendees can test and troubleshoot backflow prevention assemblies. An adequate water supply with several connections will be necessary for the testing of the backflow prevention assemblies.

Registration:

Registration will be handled directly by the Foundation office. Prior to the announcement of the course, the hosting agency may be asked to recommend local accommodations for those not in the immediate area. Course attendees must submit a registration application along with a purchase order or check; the Foundation will mail a confirmation letter to all course participants.

Course Materials:

The Foundation will provide, for each student, a binder containing a syllabus, a time schedule for the week and several

continued on page six



The hosting organization will also receive complimentary registration for two.



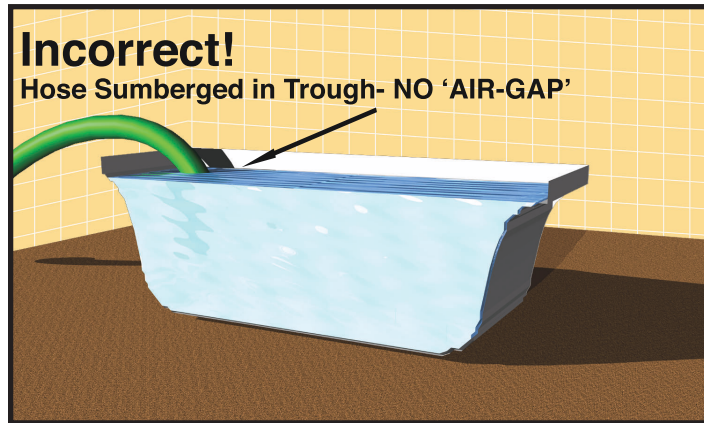
Cross-Connections in Household Plumbing

O ur Homes...

Have you ever considered all of the places that you use water in your home? You may be surprised how many different ways that water can be used, and possibly misused.

Sinks, Tubs, Tanks

The faucets in your bathroom or kitchen must be located so that the end of the faucet is above the overflow level of the sink or tub. Fill lines to water troughs or tanks must also be physically separated or “air-gapped.” If there is no air-gap, then the contents of the sink, tub, or tank may be sucked or “back-



Irrigation

Irrigation systems make watering of your lawn or garden much easier,

but if not properly constructed, contaminants may backflow into your drinking water. Backflow protection may be provided with vacuum breakers (atmospheric {AVB} or pressure {PVB or SVB}) or reduced pressure principle assemblies (RP).

Water pooling around sprinkler heads may be contaminated by chemicals, fertilizers, or animal waste.

Hose bibbs

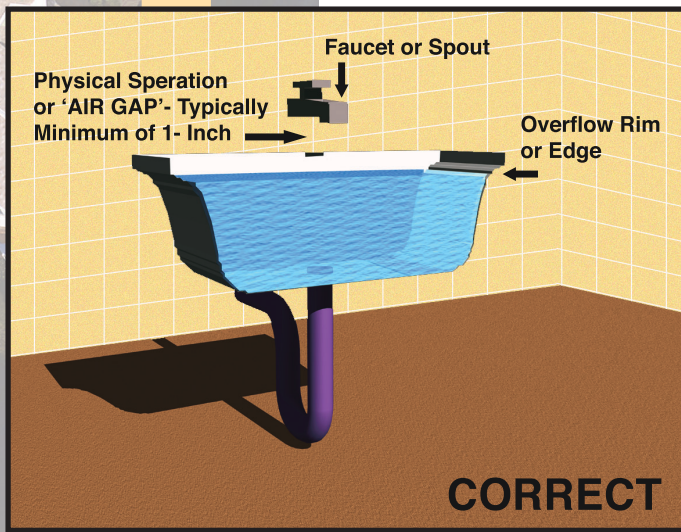
Hose bibbs are part of our everyday life. They allow us to hook up a garden hose to water the plants, wash the car, clean out the gutters, fill the swimming pool, etc. However, every time you connect a garden hose to a hose bibb, you are extending the end of the water line. To make sure that no harmful

siphoned” in to the water line during a loss of water pressure.

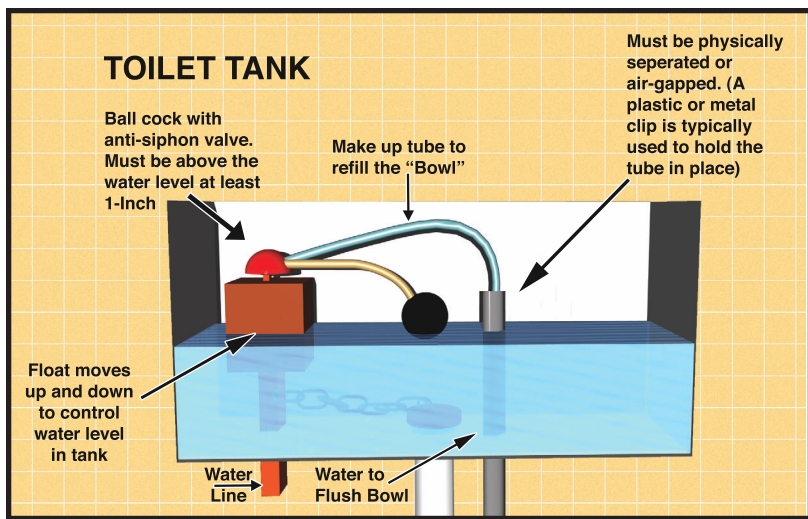
Toilets

Toilets need water to flush the waste material in to the sewer

system. The water that flushes the toilet enters into the toilet tank from the small hose or pipe connected to the bottom of the toilet



You may be surprised how many different ways that water can be used, and possible misused.



continued from page four

materials are drawn back into the garden hose, a vacuum breaker should be installed on each hose bibb. When the hose bibb is exposed to freezing conditions, make sure to use a self-draining, frost-proof vacuum breaker.

These are some of the most common cross-connections found in residences. Should you have any questions regarding the plumbing requirements, or specific connections in your home, contact your local water department, or plumbing authority •

Approved Assemblies

continued from page three

the shutoff valves so that an ell is placed between the body of the assembly and the shutoff valve. Although the Foundation's approval would be invalidated, the alteration would not affect the assembly's ability to prevent backflow, since the backflow preventing components (e.g., check valves) have not been altered. However, in this example with the ell attached directly to the body of the assembly, the relief valve of some RP's may discharge

during flowing conditions due to the turbulence leading into the body of the assembly.

In these situations, the local administrative authority may grant a variance and allow the assembly to be installed, even though the

Foundation's approval may be invalidated. The ultimate acceptance of the assembly rests in the determination of the local administrative authority. Some administrative authorities may allow certain variances, while others may not. If there is a question regarding any installation variance, the Members are encouraged to contact the Foundation Office for clarification on the affect of the installation variance.

Another possible variance may be the replacement of shutoff valves. *The List of Approved Backflow Prevention Assemblies* lists, with each approved assembly, which shutoff valves are acceptable as replacement valves for the assembly. In many cases there are several shutoff valves, which are acceptable with the backflow preventer. Along the same lines is the use of water meters in the bypass arrangement of the detector assemblies. The List shows each meter, which is acceptable with the detector assembly without affecting the assembly's approval status. It is important to use only those meters listed on the approved list, as other meters may render the detector

continued on page seven



Hosting a Course

continued from page three

reference materials. Also provided, for each student, will be the current edition of the *Manual of Cross-Connection Control*.

Backflow prevention assemblies of various manufacturers will be shipped to the location of the course by the Foundation. The assemblies will be set up with garden hose connections; therefore, an adequate source of water will be necessary. In addition, tools and gages will be provided by the Foundation.

The Foundation will provide a “certificate of completion” for each member of the class who successfully completes the written and performance portions of the final examination.

The Specialist Course

The Foundation’s *Course for the Training of Cross-Connection Control Program Specialists* is designed to train the attendees in the various aspects involved in administering a cross-connection control program. Main topics discussed are: Rules & Regulations, Policies & Procedures, Record Keeping, Plan Checks, Public Relations and Site Surveys. Much of the course is dedicated to the site survey to help the attendee assess the degree of hazard at any water using facility. The course includes a short survey of a facility as part of the examination.

Following are the main items to consider in the decision to host Foundation Specialist Course:

Meeting Place:

The meeting place should be a room large enough to accommodate approximately thirty (30) course participants. The room should have a blackboard with chalk or a grease-board with pens, along with being suitable for multimedia presentations.

Registration:

Registration will be handled directly by the Foundation office. Prior to the announcement of the course, the hosting agency may be asked to recommend local accommodations for those not in the immediate area. Upon receipt of the course application, along with a purchase order or check by the individual attendees, the Foundation will mail confirmation letters to all course participants.

Course Materials:

The Foundation will provide, for each student, a binder containing a syllabus, a time schedule for the week and several reference materials. Also provided, for each student, will be the current copy of the *Manual of Cross-Connection Control*. In addition, the contact for the hosting agency should provide the Foundation office with local and state regulations so that the instructors can adjust the course to the legal requirements of the region.

The Foundation will provide a “certificate of completion” for each member of the class who

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Control*.**

continued from page six

successfully completes the written and performance portions of the final examination.

Field Survey:

The hosting organization needs to locate a facility, which will be suitable for a field inspection on Thursday morning of the class. The facility should be located nearby the classroom and should have several water uses. There



should be at least three separate, diverse, water usages located at the facility. Before the site is finalized and the proper permission is sought for the inspection, the hosting organization contact should call the Foundation office and discuss the facility with a member of the Foundation's Engineering Staff. After all the preparations are finalized, the students will then be required to inspect the locations to determine the uses of water, whether there are any actual or potential cross-connections and ultimately determine the degree of hazard. A separate location is necessary for a pre-survey, which takes place earlier in the week

The Foundation office is currently in the process of scheduling courses for 2004. If any Member is interested in hosting one of the Foundation training courses, please contact the Foundation office or

visit our website to obtain a detailed hosting outline or discuss the possibility with one of the Foundation's Engineering staff.

Locations will be selected based on the amount of interest in the training courses in those areas under consideration •

Approved Assemblies

continued from page five

capabilities of the assembly use-less.

The Manual of Cross-Connection Control states that assemblies should be shipped from the manufacturers in the fully assembled configuration. This includes bypass arrangements and shutoff valves. Assemblies received for installation not completely assembled are not approved by the Foundation. Field conversions of assemblies to a detector assembly or from a double check valve assembly to a reduced pressure principle assembly are not permitted. Such field conversions will render the assembly's approval invalid.

It is the Foundation's desire to help the Members in determining which configurations are acceptable for an approved assembly. Should the information provided above not answer any specific question the Member has; the Member is encouraged to contact the Foundation Office •

**Join us at the
ABPA International
Conference in
Detroit, Michigan on May
5-7th.**

**Field conversions
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Training Courses

Tester Course

Iowa City, IA
7- 11 April 2003

Los Angeles, CA
12-16 May 2003

Los Angeles, CA
14-18 July 2003

Specialist Course

Kauai, HI
3-7 March 2003

Los Angeles, CA
July 28- Aug. 1 2003

Upcoming Events

ABPA- National Conference

•Detroit, MI
5-7 May 2003

AWWA- Annual Conference

•Anaheim, CA
15-19 June 2003

*ABPA- Western Region
Backflow Conference*

•Las Vegas, NV
29 Sept.- 1 Oct. 2003

*AWWA- Distribution & Plant
Operation Conference*

•Portland, OR
28 Sept.- 1 Oct. 2003



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