CROSSTALK
Winter 2016

Recycled Water
Grey Water

As water conservation continues to be a topic of conversation; water suppliers, businesses and homeowners continue to look for ways to manage fresh water use. Today, recycled water systems have become a vital part of many water suppliers' programs. Plus, with more water agencies allowing the use of grey water systems; local businesses and homeowners have adopted grey water use, or grey water systems to conserve water. However, introducing these types of systems into a home or business may inadvertently create the possibility for cross-connections if proper protections are not taken.

The *Manual of Cross-Connection Control, Tenth Edition* defines Recycled Water, also known as Reclaimed or Reused Water, as:

> *Water which, as a result of treatment of wastewater, is suitable for a direct beneficial use or a controlled use that would not otherwise occur. Reclaimed water is not safe for human consumption.*

Recycled Water starts off as wastewater (sewage). The wastewater is transported to a sewage treatment plant where solids and impurities are removed and the result is water that may be used for commercial and industrial water needs but not for drinking.

When recycled water is distributed, it uses a completely separate distribution system from the potable

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Foundation for Cross-Connection Control and Hydraulic Research
a Division of the University of Southern California

USC

New Members

Below is a list of those who have become members of the USC Foundation since the last *Cross Talk*.

Avondale Irrigation District

Carrera

CrafTek Inc.

Cross Connection Control Management, Inc.

Forks, City of

Golden State Consultants

Griffin Plumbing, Inc.

Jacob Little

Long Beach, City of - DHHS, BEH

Luis Beltran

Manuel Bravo

Occidental College

Plumbing & Sewer Solutions, LLC.

MCA GCC-Public Works Division

T&P Mechanical, LLC.

Tony's Plumbing

Wendy Ramos

Yamashita Engineering

Contents

What's Included with a Foundation Membership

Membership Discounts

25% off Manual Orders

More than 25% off Training Courses

Seminars/Webinars/Training Tools are also discounted

Other Benefits

NEW FOR 2016 One or more complimentary webinar(s)

(Number of complimentary webinars dependant on the type of membership)

Free copy of the *Manual of Cross-Connection Control*, each time a new edition is published

2016 *USC List of Approved Backflow Prevention Assemblies* Book (At member's request. One per member)

E-mail notification every time the *USC List of Approved Backflow Prevention Assemblies* is updated

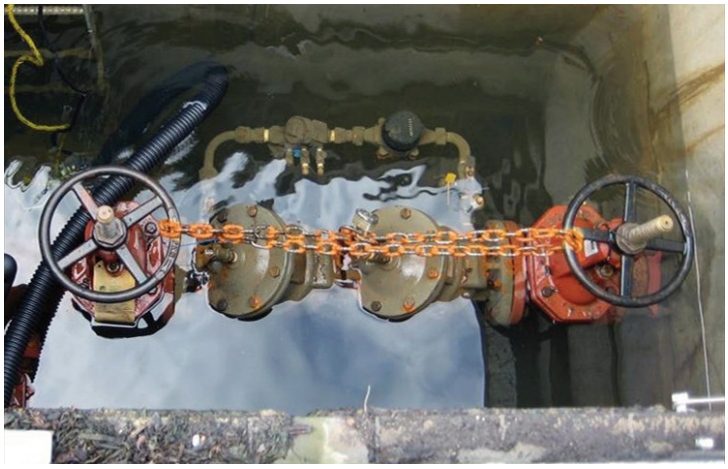
Special Notices mailed as needed and exclusive to members for one year

New *Cross Talk* mailed quarterly

Cross Talk is published by the
Foundation for Cross-Connection Control and Hydraulic Research,
a Division of the University of Southern California,
for Foundation Members.

VAULTS, PITS AND ASSEMBLIES

Generally, there are a few reasons why anyone might want to install a backflow prevention assembly in a pit or a vault. First, to protect the assembly from freezing conditions. Second, for aesthetic reasons. Lastly, one may want to protect the assembly from vandalism. However, the USC Foundation recommends that all assemblies be installed above grade.



Installing an assembly in a pit or vault may inadvertently create cross-connections. For example, if a reduced pressure principle assembly (RP) is installed in a pit and the relief valve happens to discharge; that water, possibly contaminated, would fill the pit and create a cross-connection at the relief valve opening.

In some cases, an RP is replaced with a double check valve assembly (DC) since the DC has "no openings," therefore reducing the risk of a cross-connection. Yet, the test cocks found on the DC could be the site of a cross-connection. If a test cock leaks or is broken off and becomes submerged backflow could occur through the test cock. So, instead of preventing backflow; a cross-connection has been created through the assembly. Remember the type of assembly installed must match the degree of hazard at the location.

Additionally, installing an assembly in a pit or vault may prevent a backflow prevention assembly tester from having access to the assembly for testing and repair purposes. All assemblies require an adequate amount of clearance in order to gain access to the internal components of the assembly.

The Foundation recommends assemblies be installed 12" to 36" above grade. If an assembly needs to be hidden from view for aesthetic reasons, consideration should be given to installing it behind a wall or landscaping. For freeze protection or the threat of vandalism think about installing an assembly in an enclosure instead of a pit or vault. ■

Memo available about modifications to any USC Approved Assemblies

The Foundation, on its website, has made available a document outlining its position on modifications to USC approved assemblies. The document highlights chapter 10.1.1.1.7 in the *Manual of Cross-Connection Control, Tenth Edition* that addresses modifications to USC approved assemblies.

The document may be found by visiting the Foundation's homepage (fccchr.usc.edu) and clicking on the 'Frequently Requested Documents' link listed in the Favorites column on the page.

It is important for the administrative authority and those in the field to understand the Foundation's position on modifications. For any additional questions regarding modifications in regards to USC Approval assemblies please contact the Foundation office. ■

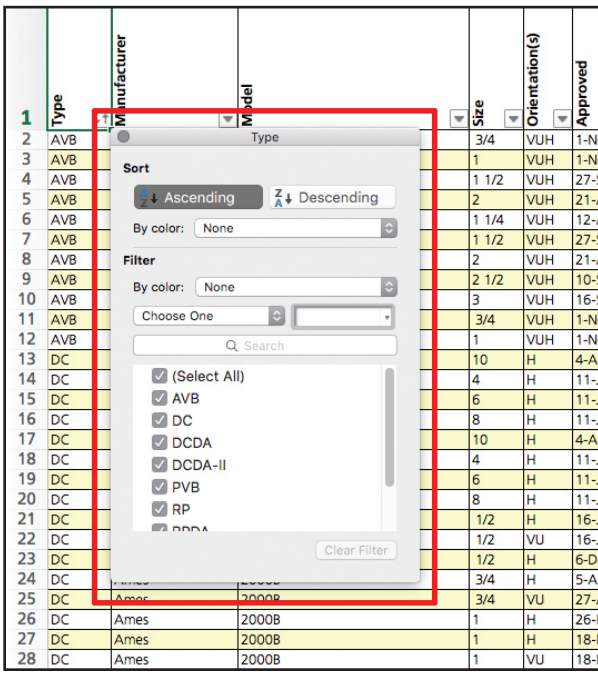
USING EXCEL AND THE USC LIST

The *USC List of Approved Backflow Prevention Assemblies* is made up of more than 3,500 listings which may seem a bit overwhelming. To help, the USC Foundation makes the USC List available in different formats. One of the available formats for the USC List is a Microsoft Excel workbook.

The Excel workbook of the USC List can be a very powerful tool for anyone involved in backflow prevention and cross-connection control. The USC List in Excel format provides a layout that may benefit anyone trying to gather as much information on as many assemblies as possible all at once.

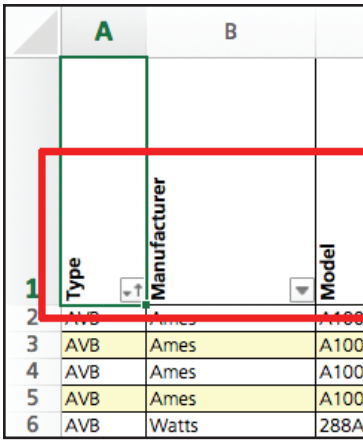
When opening the Excel workbook of the USC List, users are taken to the cover page of the list which includes the publishing date on the upper right hand corner. The cover page shows all changes to the list since the last printing of the complete list. The cover pages include the recent additions, deletions and modifications to any assembly on the USC List. At the bottom of the Excel sheet users will find seven sheet tabs labeled Recent Changes, List, Orientation Key, Shutoff Valves, Meters, Manufacturers and Special Notices.

Selecting any sheet tab will display the worksheet containing the information described. For example, selecting the Orientation Key sheet tab will display a key with diagrams explaining what the different abbreviations mean when referencing the orientation column of the USC List.



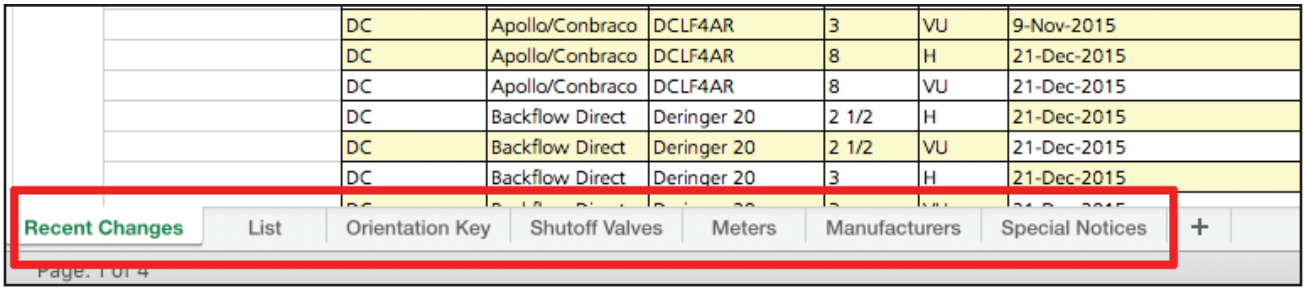
Filter option on the USC List (Excel)

The Orientation Key, Shutoff Valves and Meters sheet tabs all contain information and explanations that are referenced in the USC List. The Manufacturers sheet tab provides contact information for each of the assembly manufacturers. And, the Special Notices sheet tab lists all the notices the Foundation has published with a brief description.



Sorting available on the USC List (

Most importantly, the List sheet tab includes all the information associated with every approved assembly. The worksheet includes columns for type of assembly, manufacturer,



Tabs found at the bottom of the USC List (Excel)

	Renewed
ov-1991	1-Nov-2015
ov-1991	1-Nov-2015
Sep-1991	27-Sep-2015
Aug-1991	21-Aug-2015
Aug-1991	12-Aug-2015
Sep-1991	27-Sep-2015
Aug-1991	21-Aug-2015
Sep-1991	10-Sep-2015
Sep-1991	16-Sep-2015
ov-1991	1-Nov-2015
ov-1991	1-Nov-2015
ug-1987	2-Aug-2014
Jan-1988	11-Jan-2015
Jan-1988	11-Jan-2015
Jan-1988	11-Jan-2015
ug-1987	4-Aug-2014
Jan-1988	11-Jan-2015
Jan-1988	11-Jan-2015
Jan-1988	11-Jan-2015
Jun-1997	16-Jun-2015
Jun-1997	16-Jun-2015
ec-1983	6-Dec-2013
pr-1993	5-Apr-2014
Aug-1996	27-Aug-2014
Feb-1991	26-Feb-2015
May-1998	18-May-2013
May-1998	18-May-2013

model, size and much more. The USC List includes a column for 'lead free,' (≤0.25% Pb) assemblies to help in identifying which assemblies meet the requirements found across the country regarding lead content.

The worksheet can be sorted by any number of the columns available. For example, the USC List can be sorted to show only double check valve backflow prevention assemblies (DC) that are 2-inch in size and are lead free. Another example may include sorting the USC List for any assemblies that are lead free and 4-inch in size. Or, anyone can sort the USC List to only display assemblies that were approved using the Ninth Edition of the Manual of Cross-Connection Control.

On some computer displays the USC List Excel workbook may not display in its entirety. Please scroll to the right to display the information that may not be visible when opening the file. One common column that is overlooked is Notes, which includes information like spool and manifold dimensions, serial numbers of assemblies specifically approved and information about replacement parts or markings on the assemblies.

C	D	E	F	G	H	I
	Size	Orientation(s)	Approved	Renewed	≤0.25% Pb	Manual
	3/4	VUH	1-Nov-1991	1-Nov-2015	N	8
	1	VUH	1-Nov-1991	1-Nov-2015	N	8
	1 1/2	VUH	27-Sep-1991	27-Sep-2015	N	8
	2	VUH	21-Aug-1991	21-Aug-2015	N	8
M3	1 1/4	VUH	12-Aug-1991	12-Aug-2015	N	8

(Excel)

Anyone can visit the Foundation's website and download a copy of the USC List in Excel format. The USC List is also made available in Adobe PDF format. For users on-the-go a USC List mobile app is available at usclist.com. For those who prefer a printed copy of the USC List, the Foundation makes available a complete copy at the beginning of every year. For any questions about using the USC List in any format please contact the Foundation office. ■

Changes to USC List Book for Members

With the success of the *USC List of Approved Backflow Prevention Assemblies* mobile app (usclist.com) and in an effort to be a more sustainable organization, the USC Foundation has decided to discontinue the mass printing of the USC List.

The printed version of the USC List is now over 600 pages and is larger than the *Manual of Cross-Connection Control, Tenth Edition*. With the availability of the USC List mobile app along with the other available digital formats of the USC List on the Foundation's website, the need for a print version of the USC List has declined.

We will continue to make a printed version of the USC List available to members annually free-of-charge but it will only be done at the member's request. This direction will allow us to reduce our carbon footprint and at the same time help focus more attention on delivering the USC List digitally.

If you have any questions or would like to request a copy of the 2016 USC List book, please contact the Foundation via phone or email. ■

ONLINE STORE ACCOUNT

It has been six months since the USC Foundation's Online store has been open and it continues to be the best way for members to shop for training courses, seminars and training tools like the *Manual of Cross-Connection Control, Tenth Edition*.

All Foundation members are encouraged to visit the store and sign up for an account. Once the account has been created, please email the Foundation Office at fccchr@usc.edu to let us know. We will then change the account to a Member account. Having a Member account will allow members to receive discounted pricing immediately and keep a history of all past orders and make placing an order simpler by managing address information so members do not have to re-enter billing or shipping information every time.

Additionally, all members are welcome to pay for their membership renewals using the online store.

All current members need to do is choose the 'Membership' category and select which type of membership is being renewed. Once the order is complete, please type the renewal invoice number in the 'order notes' section and submit the note

Please contact the Foundation office for questions regarding the online store or converting an existing account to membership pricing. ■

NO USC SEAL OF APPROVAL

The *USC List of Approved Backflow Prevention Assemblies* is a valuable source of information for many involved in backflow prevention and cross-connection control. The USC List consists of assemblies which have successfully completed the Foundation's approval program. And, the Foundation uses the USC List to communicate to the public which assemblies are USC Approved. However, it has come to the Foundation's attention that some assemblies' marketing material/specification sheets may carry USC Foundation Approval signage.

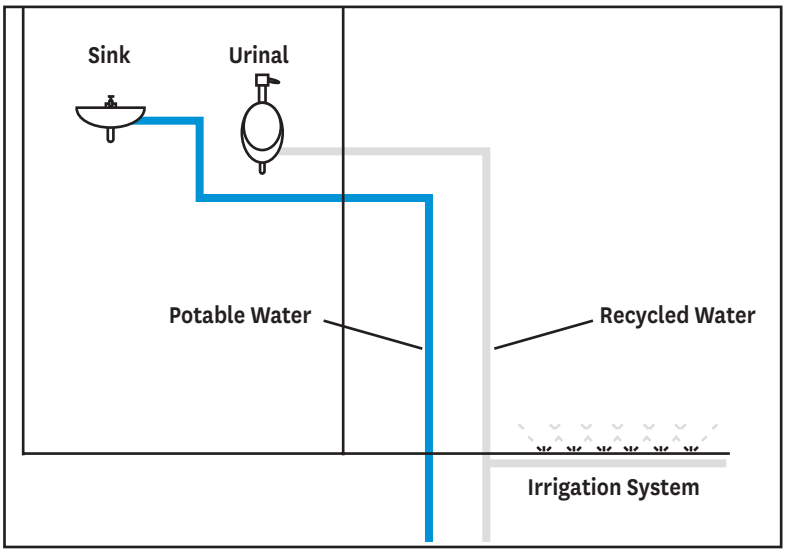
The Foundation does not allow the use of any kind of seal or mark for use as marketing material for any USC approved assemblies. Unlike other listing organizations that issue a seal of approval, the Foundation uses the USC List exclusively to communicate which assemblies are approved. This path allows the Foundation to have more control over what carries USC Approval and allows the Foundation to update any assembly's approval status immediately.

The Foundation encourages everyone to verify an assembly's approval status using the USC List (usclist.com). The USC List is updated regularly for assembly additions and deletions and it is the best way the USC Foundation communicates to the public the status of an assembly's approval.

Anyone with any questions regarding an assembly's approval may contact the Foundation office for more information. ■

water distribution system. In fact, there are a number of regulations designed to keep the systems well apart from one another.

Though recycled water is mostly used for irrigation purposes, there are buildings that are dual plumbed with both recycled water and potable water. In these cases, the recycled water may be used for flushing urinals or other non-potable purposes, but not for drinking.



NEVER Interconnect a potable water supply with a recycled water system

Grey water, on the other hand, may not be as heavily regulated as recycled water.

Grey water is defined in the *Manual of Cross-Connection Control, Tenth Edition* as:

> *Wastewater other than toilet contaminated waste. Wastewater generated by kitchen sinks and dishwashers are not considered grey water.*

Grey water is used at the site where it is created, normally, without any treatment. The most common use of grey water in a residence would be the use of washing machine discharge for the irrigation of plants.

For example, when water discharges from a washing machine, it is pumped from the machine into the sewer line by the washing machine's pump. However, this water can be redirected to an irrigation tank, where it can be used to irrigate trees and plants. Another method is to have the water redirected directly to the plants and trees, so that, when the washing machine discharges, the plants and trees are irrigated.

As the public looks to recycled and grey water systems as a way to conserve fresh water use, the possibility of cross-connections between those systems and the potable water distribution system increases.

To prevent any cross-connections, recycled water systems are completely separated from potable water distribution systems and tests are performed regularly to make sure these systems stay separate. There is an array of regulations in place to protect potable water distribution systems from coming into contact with recycled water systems.

Grey water systems may be more difficult to regulate, since more and more grey water systems are being installed at residences. As with any system handling polluted or contaminated water, it is important to keep the grey water system separate from the potable water system. There should be no unprotected cross-connections between the systems.

Washing machines normally have the potable water protected from the water being used by filling the machine through an air gap. This is built into the washing machine so the dirty water is not siphoned up into the potable water piping.

In April, the USC Foundation will be hosting a *One Day Seminar/Webinar* addressing recycled and grey water. The seminar/webinar will discuss the methods used to test dual plumbed systems for cross-connections and identify other cross-connection issues associated with recycled and grey water systems. ■

Upcoming **Training** Courses

all courses in Los Angeles, CA

Tester

9-13 May
11-15 July
3-7 October

Specialist

25-29 July

Seminars/Webinars

21 April
Grey Water Systems & Recycled Water Shutdown Test

7 June
Different Facilities; Different Cross-Connections

9 June
How the Use of Equipment Results in Cross-Connections

11 August
Cross-Connection Control Surveys

15 November
Assembly Repair and Lead Free Issues

Foundation for Cross-Connection Control and Hydraulic Research

University of Southern California
Research Annex 219
3716 South Hope Street
Los Angeles, CA 90089-7700

Contact Us

Phone | **866.545.6340**
E-mail | **fccchr@usc.edu**
Fax | **213.740.8399**
Website | **fccchr.usc.edu**

Upcoming **Events**

ABPA Silver State Chapter Seminar
Las Vegas, NV
14 April 2016

PHCC-Greater Los Angeles Area Flow Expo 2016
Long Beach, CA
23 April 2016

ABPA Western Region Backflow Conference
Las Vegas, NV
26-27 September 2016

CA/NV Section AWWA Annual Fall Conference
San Diego, CA
24-27 October 2016

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