



ABPA News

An Association Member Benefit

4th Quarter 2023

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National Backflow Prevention Day - August 16 State-of-the-art research facility may help Relaunch ABPA Peach State Chapter

It's "feast or famine" for Region 3 (AL, FL, GA, MS, NC, SC, TN) Director Kathy Riley, when it comes to the current state of the four ABPA chapters she oversees. Her Carolinas and Tennessee Chapters are thriving – routinely earning Presidential Award for Chapter Excellence (PACE) honors. But the other two – Florida Suncoast and Peach State (GA) chapters – are currently "in limbo."



ABPA Region 3 Director Kathy Riley was one of the primary presenters during a large Backflow Prevention Day event outside Atlanta. She also had the opportunity to hand out about 70 Buster Backflow magazines – every last one she had with her.

So, for the third annual National Backflow Prevention Day (NBPD) on August 16, Kathy made her way down from Charlotte to Buford, Georgia (35 miles Northeast of Atlanta), to participate in a very large event – and to, hopefully, breathe some new life back into her Peach State Chapter.

"The pandemic really hit my Florida and Georgia chapters hard and they've still not bounced back," Riley explained. "When I was invited to speak, I thought it might be a great opportunity to try to revive the Peach State Chapter. I met several potential chapter members and followed up by emailing about a dozen people who gave me their business cards."

Kathy made the contacts at a quite unusual – possibly completely unique, as a matter of fact – facility called "The Water Tower." It was her first time to visit the 300-acre site. And she immediately saw the potential for the location to possibly one day host an ABPA International Conference (although certainly not next year because – after a couple of COVID-19 postponements – the 2024 event is bound for her home city, Charlotte, NC, next spring).

"The pandemic really hit the Florida and Georgia chapters hard and they've still not bounced back. When I was invited to speak, I thought it might be a great opportunity to try to revive the Peach State Chapter. I met several potential chapter members."
-Kathy Riley

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Useful ABPA Resources

ABPA Membership Brochure

Online Dues Renewal Instructions

Certification Program Resources

View the ABPA Community Calendar featuring upcoming Certification exam information and other local chapter events.

Contact Us

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<http://www.abpa.org>

"This was my first visit to The Water Tower and it was very impressive," Riley added. "It has lots of meeting and event space. There were a couple of hundred people at the Backflow Prevention Day event, which ran all day. At first, I thought I'd be speaking about five minutes; but they wanted a full 40-minute presentation. They fed us a nice barbeque lunch. We also played a backflow prevention trivia game."

According to their [website](#): "The Water Tower, officially launched in 2019, is actually two nonprofit organizations: The Water Tower at Gwinnett, a 501(c)4, which is responsible for the development and operations of the campus, and The Water Tower Institute, a 501(c)3, which is responsible for our solutions, instruction and engagement programming. Together, these entities are committed to *creating a thriving ecosystem of water innovation fueled by imagination, informed by research and powered by pioneers*. This



Launched in 2019, The Water Tower is operated by two nonprofit organizations.

is being accomplished by bringing together the public and private sectors of the water industry – side by side with academia and nonprofits – to tackle the industry's greatest challenges."

Another speaker at the NBPD celebration – and one of the event organizers, Skylar Lipson – is a product specialist and trainer for Harry Warren of Georgia, a manufacturers' representative that markets backflow prevention equipment to wholesalers.

"I love the idea of National Backflow Prevention Day because it puts this industry into the forefront," Lipson said. "This year's attendance was through the roof; in fact, it was a 2-day event. The first day was mostly for training, while the second day was educational. We were very excited Kathy was able to be one of our speakers. We want to work with her on the ABPA Peach State Chapter relaunch – to help get people excited about it. I know the chapter was hit very hard by the Silver Tsunami."

Lipson says his employer has a cooperative agreement with The Water Tower, but does not operate the site. He describes it as "a single place, featuring a lot of different research and development programs." He also added, he'll be in Charlotte next April.

"I will definitely be attending the next ABPA (international) conference," Lipton concluded. "The goals and values of The Water Tower are in full alignment with ABPA. For one thing, we both want to be sure there are plenty of qualified backflow testers."

Speaking of next year's ABPA 39th International Conference & Trade Show (April 22-24), Kathy says her team is continuing to work long hours, preparing.

"We'll be meeting with the Charlotte Visitors Bureau to get some more ideas for places our conference attendees can visit," Riley concluded. "We're

thinking about putting together a microbrewery tour. We're also trying to find more sponsors for some of our events, like the Sunday night welcome gathering. We'll soon be reaching out to various people to be speakers as well. I know it will be a successful event. I can't wait to have everyone come visit."



Kathy Riley (2nd from left) and her Charlotte staff took time to celebrate National Backflow Prevention Day – before returning to the task of planning next year's 39th annual American Backflow Prevention Association International Conference & Trade Show.

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A Message from ABPA President Blake Anderson

Five steps to creating cross-connection control & backflow prevention programs



ABPA President Blake Anderson

As I have had the opportunity to speak with many small drinking water system operators over the years, I've observed a strong consensus among them. There is clearly a great need for assistance in setting up and implementing cross-connection control and backflow prevention programs for these smaller water providers.

Along the way, I have also identified the five elements I believe are most critical to effectively establish a cross-connection program. You may think other variables are just as important – perhaps even more significant. But these are the five I emphasize when working with system operators:

1. Establish an ordinance or **authority statement** so a program can be effectively implemented.
2. Provide **public awareness & education** on how to protect drinking water to water consumers and the general public.
3. Ensure your **staff** is properly **trained and certified** to operate the program.
4. Keep and maintain **accurate records**, including: a list of all cross-connections, backflow incidents, high-hazard air gap inspections, hazard survey inspections, backflow inspections, assemblies test reports and assembly locations.
5. Ongoing **enforcement**, including hazard inspections, backflow assembly annual test reports, annual public awareness & educational outreach, and complete **documentation** of these activities.

ABPA is committed to protecting our drinking water, providing training, education, certified proctors and testers. Our association is now working on a "need to know" training manual, designed to help water systems set up cross-connection control and backflow prevention programs.

As you well know, we have very important work to do. Thanks for your commitment to keeping people safe, through the relentless protection of their drinking water.

Keep up the Good Work!

Blake Anderson
ABPA President 2022-24

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A Message from ABPA Vice President Troy Baird The SVB origin story - and why PVBs aren't going away

Hello everyone!

This quarter, I want to talk a little nuts-and-bolts for a change. Journey with me, if you will, into the world of the spill-resistant vacuum breaker (SVB).



ABPA Vice President Troy Baird

The SVB, a close cousin to the PVB, was invented largely due to legal situations in the 1980s involving PVBs discharging water indoors. It was an issue manufacturers finally addressed, after plumbing codes had alluded to the problem years earlier. Other ideas before the SVB didn't evolve, such as a drain pan under the PVB. So, in 1993 the spill-resistant pressure vacuum breaker made its debut.

A common question is: how are the SVB and PVB different? The *physical* difference is, the SVB only has one test cock versus two test cocks on the PVB. Additionally, the SVB has a vent valve, located in the same place as the #2 test cock on the PVB. Internally, the SVB added a diaphragm as part of the air inlet valve – and a stronger spring in its check valve – versus the air inlet valve. This internal design results in a mechanical operation designed to be spill-resistant.

In operation when an SVB is pressurized, water encounters the air inlet valve and the check valve simultaneously. The air inlet valve (with the lighter spring) is intended to close *before* the check valve opens. After the air inlet valve closes under pressure, the check valve opens, allowing water to flow through the assembly.

The job of the diaphragm is to contain any water from escaping during this pressurizing process.

Regarding the installation of both assemblies, the criteria for the SVB and PVB are the same. Each should be mounted at least 12 inches above the highest outlet or piping downstream. They both have a high-hazard recognition. And, neither is allowed to be installed under a backpressure condition at *any* time. The difference of course is, the SVB is designed for indoor installations.

When it comes to installing an SVB on an irrigation system, some jurisdictions have written out the allowance of an SVB with the thought that all irrigation assemblies are always installed outdoors. However, as we know, some irrigation assembly installations are indoors, such as in a garage or mechanical room. But there is nothing wrong with using an SVB on an irrigation system, whether indoors or out.

When it comes to testing the SVB versus the PVB, the order of testing the check valve and the air inlet valve reverses. When testing the SVB, the check valve is tested first, then the air inlet valve. With the PVB test procedure, the air inlet valve is tested first, followed by the check valve (FCCCHR 10th edition).





Something else backflow testers should be aware of when testing SVBs: field test results should indicate a check valve value *higher* than the air inlet valve value. When this is not the case, the assembly may not be acting as spill-resistant. In fact, many jurisdictions may reject a field test report if the check valve value is not higher.

One last thing about the SVB: it surely has its role to play in cross connection control; but most seem to agree, it won't replace its old cousin the PVB anytime soon. The PVB came out about 75 years ago, with its main purpose being for irrigation systems. It appears that status won't change moving forward.

Happy testing – as we look forward to the upcoming winter months!

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Headquarters Update

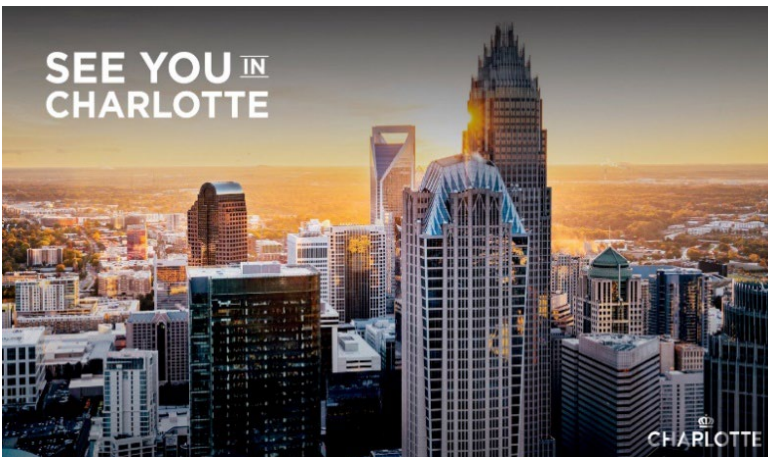
Hello autumn... and hopefully a big welcome to cooler temperatures

By Patti Fauver, Executive Director



As our seasons change, it's a good reminder to check your information in the ABPA database. Whether you are a member or carry an ABPA certification, our primary form of communication with you is by email. So – in order to receive the gentle reminders to renew either membership or certification – please keep your profile up-to-date.

2024 ABPA Annual International Conference



We are excited to FINALLY head east to Charlotte, NC for our 2024 conference!

Having been twice cancelled during the COVID years, we toyed with a theme of "Third time is the charm," but refrained. Your conference is scheduled for **April 22-24**. Our host hotel is the **Hilton-Charlotte Airport**.

Our Conference Committee is busy planning an exciting and informative agenda. The Carolinas Chapter is also organizing local activities to make the conference even better! Watch the website and your email. We will provide up-to-date information as soon as it is available.

Certifications

We are still collecting a lot of late fees from exam applicants. Please remember:

Tester exam registrations must be received by ABPA 14 days prior to the scheduled exam date. On a case-by-case basis, late exam registrations **may** be accepted after that deadline, if resources (e.g., proctor availability and exam materials) are available at the certification exam site. Late exam registrations are subject to a **\$100 late fee.**

Late Fees:



**We Have
The Answer**

ABPA will continue to hold tester and specialist exams wherever possible. We strongly encourage all individuals who need to recertify to sign up for these available, traditional recertification exams. As always, tester and specialist exams can be found at abpa.org/events/event_list.asp.

Membership:

Our Membership Committee continues to meet to discuss membership value and how to increase interest. Hopefully you have noticed, our new certification fees include a **member discount**. The committee is now looking at additional areas for possible member discounts. They are also looking at ways to make membership renewal easier. Stay tuned as they begin to roll out these ideas in the near future.

Website:

Updates to our admittedly antiquated ABPA website are now being evaluated. We are working hard to hopefully launch an updated version of our online presence in the next 6-9 months. If you have suggestions for changes that would make abpa.org more functional, please share them at info@abpa.org.

Public Awareness Information – don't forget:

It's that time of year again to winterize outside piping. That also makes this a good time to score positive PR points by reminding any municipalities or other organizations you work with, to address this seasonal need. This will send a subtle reminder, you are always looking out for their best interests.

Helpful Links – in case you missed them

International

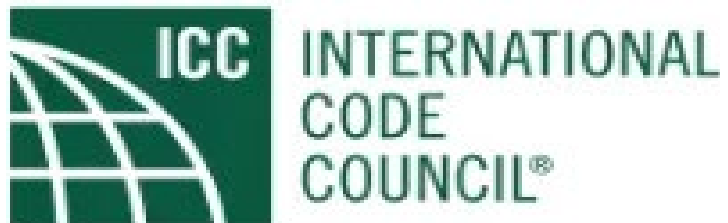


BPAA Convention just three weeks away

If you can afford the time and expense to journey "down under," it's still not too late to register for a conference coming later this month. The **Backflow Prevention Association of Australia** will present its 2023 NATIONAL BACKFLOW & LEGIONELLA CONVENTION - Water for Health and Environment, October 19-21. Click [here](#) for more details.

International Code Council Unveils 2024 International Plumbing Code & 2024 International Mechanical Code

*2024 editions of the International Plumbing Code®
& International Mechanical Code® will provide the
most substantial format changes in 25 years.*



Washington, D.C. – The International Code Council has announced the release of the 2024 International Plumbing Code (IPC) and the 2024 International Mechanical Code (IMC) from the forthcoming 2024 editions of the International Codes® (I-Codes). The 2024 IPC and IMC will be the first codes among the 2024 I-Codes to undergo substantial formatting changes to improve the user experience and better align print and PDF versions of the I-Codes with the Code Council's Digital Codes® content.

The 2024 IPC improves public health through enhanced waste management requirements and plumbing system resilience to natural hazards. It also advances community sustainability through new water

conservation measures, while assuring building accessibility through the integration of the updated ICC A117.1 Accessibility Standard, making the IPC the most comprehensive plumbing code available.

As part of the Code Council's digital transformation strategy, the 2024 IPC and IMC are the first I-Codes to include new and improved formatting to align with the Code Council's Digital Codes® content, which will be implemented within the 2024 I-Codes and all future I-Codes. These enhancements were developed and implemented based on feedback from print and digital I-Codes users and aim to improve user experience, with a modern look that improves readability.

For more details about these changes – and to purchase print or digital copies of the 2024 IPC and IMC – visit the [ICC website](#).

Drinking Water and Water Quality



EPA's 7th Drinking Water Infrastructure Needs Survey and Assessment

EPA's 7th Drinking Water Infrastructure Needs Survey and Assessment (DWINSA) assesses our nation's public water systems' infrastructure needs over the next 20 years. It is used to allocate Drinking Water State Revolving Fund (DWSRF) grants, including Bipartisan Infrastructure Law funding, to states. The survey determined that drinking water systems will need \$625 billion for pipe replacement, treatment plant upgrades, storage tanks and other key assets to ensure the public health, security and economic well-being of our cities, towns and communities.

This 7th DWINSA also estimates the needs of existing tribal drinking water infrastructure will exceed \$4 billion over the next 20 years. The survey results are used to allocate funds for tribes under the Drinking Water Infrastructure Grant Tribal Set-Aside (DWIG-TSA). The survey is comprised of infrastructure needs that are DWIG-TSA eligible, and include the installation of new drinking water infrastructure and the rehabilitation, expansion or replacement of existing infrastructure.

In accordance with Section 1452(h) of the Safe Drinking Water Act, for the first time, the DWINSA also includes a survey on lead service lines. Based on the data collected, EPA projects a national total of 9.2 million lead services lines across the country.

More details – including fact sheets and answers to frequently asked questions – are available [here](#).

Enjoy wonderful **Halloween**, **Thanksgiving** and **Christmas** seasons. And as always, please keep yourself and your loved ones safe – **air five!**



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Letter from the Editor

Bureaucratic headaches continue to challenge several of our ABPA chapters

By Carl Fauver, ABPA Communication Director

This is the first time I've thrown state government logos into my normal assortment. And since this quarter's *Chapters' Corner* article covers Michigan and one of our California chapters, you can safely assume that's the story where you'll learn how these departments are creating uncertainty for the backflow prevention industry in those states.

As for the other two logos, one's already been mentioned (if you've read through from the start, you know which one) while the other is buried fairly deep in an upcoming story.



Ahead in this autumn newsletter, you will also read about:

- Your new ABPA Treasurer, who's simply pulling on the latest in a series of hats he's worn over a couple of decades, on behalf of the association.
- All the history of ABPA's Backflow Prevention Assembly Certification Program, as it marks a milestone anniversary.
- Everything you need to know about effective backflow prevention assembly enclosures.
- The afore mentioned *Chapters' Corner*, detailing the challenges several of our chapters face – three, in the same state.

We appreciate the positive feedback we've received regarding your ABPA newsletters. We're also encouraged to hear, some of you are interested in contributing stories to this quarterly publication. We invite you to share ideas for future articles – or to offer any other comments – at info@abpa.org.

For story ideas, it would be helpful if you include contact information for one or two individuals who can contribute to an article or would be available for an interview.

As we close in on the end of 2023, I wish everyone the best for the holiday-filled season ahead. Just remember, it's tacky (so Patti tells me) to save your Halloween candy to give to Christmas guests. So, feel free to steal and gobble those hobgoblin goodies from your kids and grandkids early and often.

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ABPA 2012 Meritorious Service Award Winner Profile

The treasurer's hat is just the most recent headgear Bruce Rathburn has worn for ABPA over the past three decades-plus

When they set about creating the "Mount Rushmore of ABPA," there's little doubt Bruce Rathburn will be a strong contender for one of those granite faces. For more than 30 years, Rathburn has filled countless leadership roles for both his San Antonio ABPA chapter and the national organization.

"I've held various leadership roles for many years and have loved every minute of it," Bruce said. "I've always looked at everyone in ABPA as family."

Rathburn has proven to be such a 'go to guy' in the association, that even now – more than a decade after serving as ABPA president and earning the Meritorious Service Award – he's still accepting assignments as needs arise.

"After this year's national conference, the ABPA Executive Committee approached me about becoming treasurer," Bruce added. "I thought about it for a couple of days, and said 'yes.' I may not be the best



When Bruce isn't wearing one of his many ABPA hats, he sometimes changes into his fishing cap.

choice for the job – but I will embrace it wholeheartedly. They said they needed someone they can trust. I know I can give them that much.”

“I’ve held various leadership roles for many years and have loved every minute of it. I’ve always looked at everyone in ABPA as family.”

Bruce was unable to attend this year’s Las Vegas conference, due to a back injury that’s been plaguing him for more than a decade.

“Back in November 2011, I fell 16 feet while I was helping to put up a deer hunting stand at our family ranch,” Rathburn explained. “I was airlifted to a Corpus Christi hospital. It took 12 weeks of rehabilitation to progress from bed to chair to walker to cane. I was thrilled when I rang the hospital bell to let everyone know I was out of there. But last January, I had to undergo another round of reconstructive back surgery and was not allowed to fly (to this year’s ABPA conference).”

Bruce’s fall occurred just a few months after he left his post as ABPA international president – and just a few months before receiving the organization’s highest honor.

“When they gave me the 2012 Meritorious Service award, I was still too injured to travel,” Rathburn explained. “So, Fred Baird and his wife showed up at my house and connected me, by phone, to the national conference (in Reno, NV). I received the honor from the comfort of my own home.”

Just a couple of months into his new treasurer’s gig, Bruce says he’s still learning the ropes. And that’s something he’s been doing – adjusting to new situations – for nearly 60 years now. The first time came with a family move – from Missouri farm country to the bustling metropolis of San Antonio – at age 10.

“I was born in the rural community of Curryville, Missouri – in the northeast part of the state, not far from (celebrated American author Mark Twain’s hometown of) Hannibal,” he explained. “I was messed up in the move – the old country bumpkin was way out of his element. Then, ironically, I enrolled at Mark Twain Middle School in San Antonio.”

A few years – and a move to the suburbs – later, Rathburn graduated from Helotes High School in 1975. That gives him less than two years to “make something of himself,” before his 50th high school reunion.

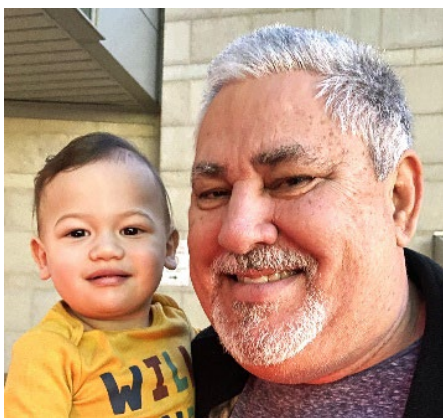
The youngest of four brothers, Bruce was the only one not drafted during the Vietnam War era. Two of his three siblings were deployed overseas – and all three are still alive today, to offer big brotherly advice.

Bruce was nearly 15 years out of high school before meeting his bride of now 33 years, Leila.



Leila & Bruce celebrated 33 years of wedded bliss, last week.

“A friend introduced us and once we met, I knew this was the person I had been looking for my whole life,” Rathburn said. “We married September 29, 1990, ten months after I met her. Leila is retiring in December, after working 35 years for the Department of Defense at Fort Sam (Houston, in San Antonio).”



Bruce and Odin enjoy a little Grampa & me time.

The two are parents to two sons and a daughter. The boys, Kolten and Trenten, remain bachelors, while daughter Ashlyn and her husband have given the Rathburns their only grandchild.

“My grandson Odin just had his second birthday,” Bruce adds. “He’s named after a Greek god.”

Not long after he married Leila, Bruce was introduced to the backflow world, while working for the San Antonio Water System (SAWS), under supervisor Fred Baird. He started in the industry in 1992 as a backflow prevention inspector, and later became SAWS’s Backflow Prevention Section supervisor.

"Fred introduced me to the San Antonio ABPA chapter in December 1992," Rathburn explained. "Once I got involved, I was in hook, line and sinker. It has been a passion in my life ever since. My wife gets tired of me pointing out backflow preventers as we drive down the road."

En route to his ABPA national presidency, Bruce served as the San Antonio Chapter president and remains on its board now. He was also Region 4 (AR, LA, OK, TX) Director from 2002-07. Nowadays, in addition to being treasurer, Rathburn is the ABPA National Codes & Standards Committee chair.

As described on the [ABPA website](#), "The ABPA National Codes and Standards Committee reviews the language and practices of all existing and proposed cross-connection control and backflow prevention sections of national and international codes and standards for correctness and continuity. The NC&S Committee submits any suggested changes or corrections through the proper channels of the individual code and standard bodies for their approval and the individual organization's usage and publication."

"(ABPA President) Blake (Anderson) asked me to chair the Codes Committee and I work on it with Jim Purzycki and Ken Kerr (1997 and 2013 Meritorious Service honorees, respectively)," Bruce added. "We reach out to various organizations like the International Code Council (ICC) to review their codes related to backflow. Then we lobby them to beef up their codes, where it's needed. I am a big advocate of memorandums of understanding (MOUs) with the industries backflow ties to. We have MOUs with fire prevention, plumbing and irrigation organizations, among others."



The Rathburns - well, OK, Ashlyn (L) is now a Letourneau.

When not busy with ABPA duties, Bruce and his family enjoy visiting the Gulf Coast and their state capital, Austin. They also have particularly fond memories of a family trek to Alaska, back in 2008, arranged through the Make-A-Wish Foundation of America.

Bruce's son Kolten was born with Marfan syndrome, a genetic disorder affecting the connective tissue that supports numerous body parts, including bones and cartilage. Experts say it impacts about one in 5000 people, worldwide. Others who have had the condition include President Abraham Lincoln and Olympic Swimmer Michael Phelps.

"One of Kolten's doctors nominated him for a Make-A-Wish trip to Alaska," Rathburn said. "He wanted to kayak with whales. He also told the organizers he was active in Boy Scouts. When we arrived in Juneau, our ship was greeted by Boy Scouts, the National Guard and members of the fire department. Kolten was presented with a key to the city. They also took us to a heliport so we could fly over Mendenhall Glacier. I get so emotional remembering it. The boys gave him several Scout patches. We had the most fantastic adventure. What a trip of a lifetime."

"My number one reason for remaining involved with ABPA is our commitment to protecting drinking water. It is our most precious resource. Plus, I think the world of everyone involved with ABPA."

Rathburn retired from SAWS on June 1, 2017, after more than 30 years with them. But in the half dozen years since, he's remained busy with ABPA – and appears to only be getting busier.

"My number one reason for remaining involved with ABPA is our commitment to protecting drinking water," Bruce concluded. "It is our most precious resource. Plus, I think the world of everyone involved with ABPA."

ABPA's Backflow Prevention Assembly Certification Program is turning 30 - Part 1

Excerpt from the ABPA Backflow Prevention Assembly Tester Certification Program Manual

Next January, our ABPA Backflow Prevention Assembly Tester Certification Program, as it is currently constituted, will mark 30 years in operation. To mark this milestone, your Certification Committee is providing a stroll down memory lane. Here you will learn about how and why the current program was created. Next quarter, the committee will offer program details, also from the Tester Certification Program Manual.

HISTORY

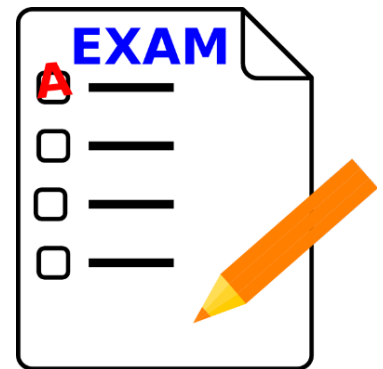
The Backflow Prevention Assembly Tester is needed by administrative authorities to assure installed backflow prevention assemblies continue to protect drinking water. The American Backflow Prevention Association (ABPA) Certification Committee (previously known as the Training Committee or the Training and Education Committee) completed the task of establishing criteria for what a Backflow Prevention Assembly Tester needs to know.

Once a person has been trained, an examination protocol had to be developed to verify the applicant's knowledge against this need-to-know criteria. The applicant must also be able to demonstrate their ability to field test and diagnose the operation of the different types of backflow prevention assemblies.

THE PAST

ABPA is dedicated to providing its members with the appropriate tools to implement and run an effective cross connection control program. One tool that was requested was a Backflow Prevention Assembly Tester (Tester) written examination. This would allow a local instructor to administer an examination to a student, in order to help evaluate their understanding of the basic principles testers need to know.

The written "practice" examination was developed and sold to instructors who needed a written exam for their classes. However, ABPA did not offer any type of certification. In 1990, questions began to arise about the many different tester course outlines instructors used and the ability of this single written examination to properly judge student comprehension of the subject matter. The written exam needed to be changed to meet this need.



Before the examination could be properly modified, there had to be consistency in training. The need to establish a course outline with a consistent core of information became necessary to assure different instructors were teaching the same subject matter.

The initial step performed by the Certification Committee was a backflow prevention assembly tester (Tester) job analysis. This job analysis was performed to determine the key tasks performed as a Tester, and what knowledge and skills were needed to perform these tasks. This would help the training providers so they could provide the required training to properly prepare their students.



In 1992, the ABPA Certification Committee completed the task of developing the Backflow Prevention Assembly Tester Course Outline. With the completed course outline, a balanced written examination commensurate with the course outline was developed to assure testers demonstrate subject matter comprehension.

The Committee further saw the need to assure the written examination was secure and not passed around in an unauthorized fashion. The Committee developed a bank of written examination questions to draw from, so different written exams could be developed to assure confidentiality. All these steps were done to reflect standard industry practices for written examinations.

Instructors used the ABPA Tester Course Outline and also purchased the original ABPA written examination, which was administered to their students. However, this process was not intended to certify the individual as a backflow prevention assembly tester.

Many administrative authorities expressed the need for a certification program they could rely on to document the Tester's understanding of the need-to-know requirements contained in the Tester Course Outline, and their ability to perform field test procedures. ABPA was asked to develop and administer such a certification program.

In 1992, the ABPA Certification Committee was given the task to develop this program which incorporates a performance or hands-on demonstration of the tester's ability to properly conduct a field test on various backflow prevention assemblies. The Committee saw the need to develop the written and performance examination guidelines so exams are complete in content and administered fairly.

With the Tester Course Outline, the written examination bank of questions and the written and performance examination guidelines developed, the Committee was asked in 1993 to tie the whole package together to establish a National Voluntary Certification Program for the backflow prevention assembly tester.



The Committee developed the set of rules for the administration of the process to acquire an ABPA backflow prevention assembly tester certification and presented the Certification Program to the ABPA Board of Directors on January 23, 1994. It was unanimously approved and implementation began immediately.

Again, watch for Backflow Prevention Assembly Tester Certification Program details in your next ABPA newsletter, coming in January.

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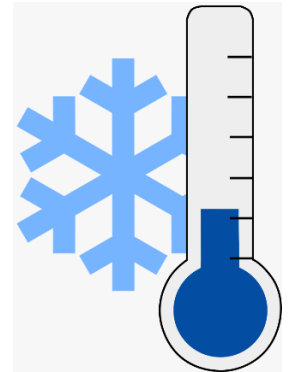
Variables to consider when installing a backflow prevention assembly enclosure

ABPA News reprint – November 2012

The definition of *enclose* is to **“protect or maintain, and isolate from the environment.”** This is what backflow prevention assembly enclosures are designed to do: isolate water inside the piping from a low temperature which could freeze it.

How is water affected by freezing?

Water is basically an incompressible fluid. In other words, squeezing does not make it smaller. Instead, water volume expands through heating or freezing. Water can only be frozen in a static or non-flowing condition. When it does freeze, water expands approximately 8% in volume.



Problems arise when this expansion occurs in a fixed vessel, like a piping system. This increase in volume translates into an increase in pressure that can deform or rupture the piping system at its weakest point.

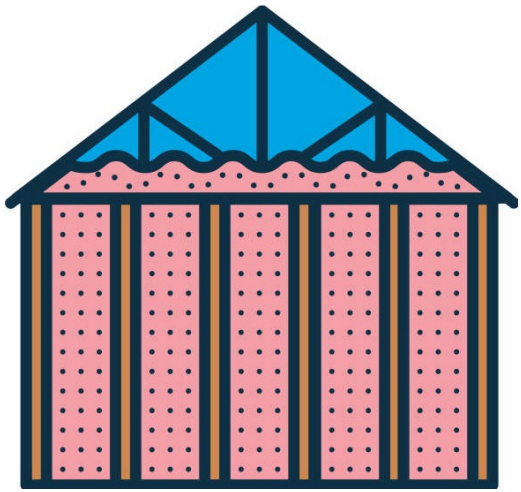
People, like backflow preventers, need to be protected from adverse weather. People use houses that maintain an adequate environment, protecting us from cold outside temperatures. When we must go outside, we wear coats. These houses and coats insulate us from adverse weather. Backflow preventer enclosures provide the same type of protection.

Insulation minimizes heat loss

Insulation is designed to minimize heat loss. It is made up of many layers of material that create small air pockets within these layers. The layers minimize warm air escape. Insulation effectiveness is measured by its **R factor**. The higher the R factor, the more heat is retained, because there are more of these air pockets trapping warmer air.

Types of insulation

Insulation can be either compressible or rigid in construction. Compressible insulation is like the fiberglass material found in the walls of houses which must maintain its thickness to retain its R factor. If the insulation is squeezed or compressed, there is less room to keep those pockets of air, therefore less heat retention. Rigid insulation is different because, as the name implies, it does not easily compress. Rigid insulation is available in either sheet form or in a spray-on type of material.



Besides compressible or rigid, insulation can be made of either closed or open cell construction. Closed cell insulation does not absorb moisture, while the open cell design can absorb moisture in those air pockets, decreasing its ability to retain heat.

Another important element when evaluating insulation is the placement of a vapor barrier. When using insulation, you will have an area of higher and lower temperatures. When these areas contact each other, vapor can form. The purpose of the vapor barrier is to keep the formation of the vapor on the barrier, not on the insulation which could reduce its ability to prevent heat loss.

How much insulation is enough?

A coat will keep us warm on a cold winter's day because the amount of heat loss through our coat can be made up by the warmth of our body. If our body cannot make up the heat as fast as it is lost, we must get a bigger coat or go inside the house to warm back up. In other words, the amount or thickness of the insulation needed is dependent on two factors: **the intensity and duration of the low temperature.**

For example, when it is 30° for one hour, the amount of insulation needed would be different than if it was 30° for 24 hours. Also, the amount of insulation would be different for 30° versus -30°.

Air voids

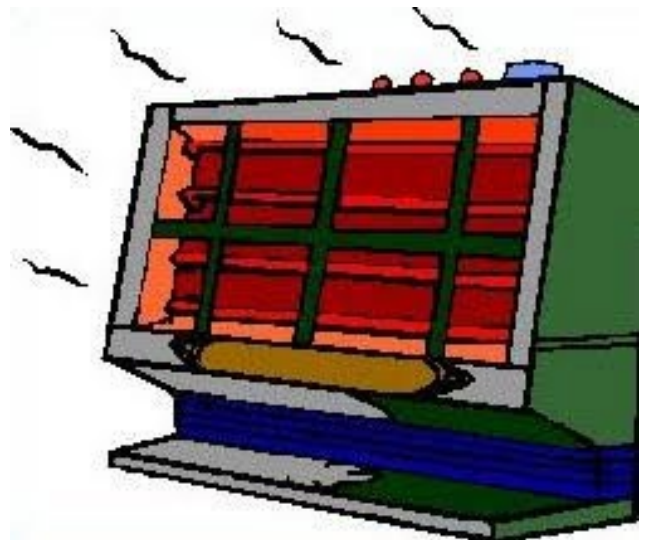
When we go outside on a winter's day, we button up our coats to keep the warm air inside. If our insulation was applied where there are openings or voids between the pieces of insulation, then like our unbuttoned coats, hot air could escape. Insulation thickness is important as we mentioned; but also important is ensuring no openings or voids exist between our insulation pieces.

Other factors of heat loss

Heat loss can also occur from contact with cold items such as the floor, or any exposed piping outside the enclosure. If an RP or PVB assembly is installed, the enclosure must have adequate space for discharge from the relief or air inlet valve. The size of the discharge must be large enough to ensure water does not collect in the enclosure.

Heat sources

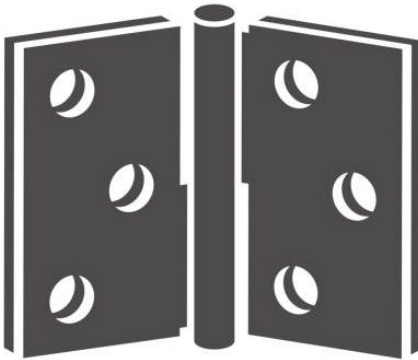
For all the reasons mentioned above, a heat source will usually be needed if the temperature is excessively low or long in duration, to replace heat lost through the insulation. There are two basic heat sources used in backflow preventer enclosures: One type is an area heater, which heats the space within an insulated enclosure. The second type is a radiant heater, which heats an object like the piping or an installation pad under the enclosure. Be sure you allow for the installation of electricity at the enclosure to handle the needs of the heater.



Enclosure walls

The next enclosure item to evaluate is wall construction. By being outdoors, the interior and exterior of the enclosure must be able to handle moisture, wind, ultraviolet deterioration and other problems at the installation site.

Enclosures on the market today are made of aluminum, steel, stainless steel or fiberglass, available in many colors and textures. The main purpose of the walls is to provide strength. Strength is also needed to hold insulation in place, and the inside heat source. Strength must also withstand outside elements such as wind or the weight of accumulated snow or debris.



The skin of the walls may not be strong enough and support braces may need to be positioned inside the enclosure, especially on larger enclosures. These braces should be analyzed in your choices, because they can be made of wood or metal and attached by screws, nails or rivets. Enclosures must have a large enough access in the walls for annual testing or maintenance of the backflow preventer contained inside.

Access doors must not compromise wall strength. The door closing mechanism must also have strong rust resistant hinges to hold the weight of the doors without them falling on the technician working on the assembly. The hinges should be able to hold the weight of the door without stressing the wall material.

Installation pads

The next element that should be evaluated is the installation pad on which the enclosure will be mounted. Most enclosure manufacturers recommend a permanent and rigid pad such as concrete. The stability of the pad ensures the enclosure walls and fasteners do not become stressed. A good installation pad also helps with security.

Appearance

Enclosures come mostly in a box shape, placed over the assembly and its piping. They are firmly attached to the installation pad. An architect may create a beautiful landscape, only to have this box in an area that detracts from it. To help with this issue, aesthetic enclosures are available, designed to be less obtrusive. They usually look like a rock; but there are other custom designs to complement specific architectural features.

Other ways to prevent freezing

Two other methods utilized to prevent freezing, other than enclosures, are insulated bags or thermostatic relief valves. Insulated bags are a plastic or canvas-type material, filled with compressible insulation and wrapped around the assembly. The thermostatic relief valves are connected to the assembly to monitor water temperature in the pipe.



When the temperature falls to a preset point, like 35°, the thermostatic relief valve will open. This allows a stream of colder water to flow from the relief valve and be replaced by warmer water, coming from the piping system in the ground which was not exposed to the adverse weather conditions. Once the warmer water travels through the relief valve, the valve will sense the higher temperature and close.

Other types of enclosures



Another type of enclosure is used for security only and does not protect against freezing. These may be desirable in areas where the assembly is either winterized or freezing is not a concern, but vandalism is.

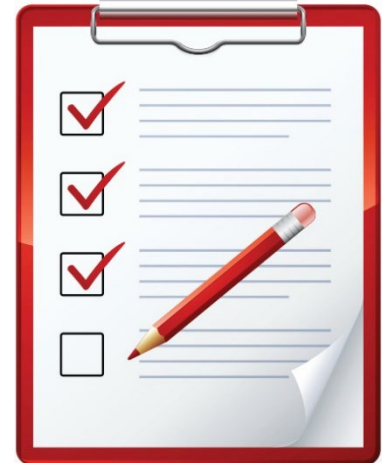
These enclosures are commonly called **cages** and do not have to have solid walls as enclosures do. Many cages are made of honeycomb steel called **expanded metal**. The metal can be either steel or stainless steel. The steel cages are coated with paint or other type of rust resistant coating. They are usually attached to a permanent installation pad and locked to the pad to keep unwanted hands off the assembly.

There are brands of expanded metal cages that wrap the metal cage around the assembly and do not mount to an installation pad. The expanded metal cages, because of their honeycomb construction, allow a visual inspection of the assembly without opening a door mechanism. Some manufacturers also produce solid-walled cages for vandal protection.

Checklist

Be sure your enclosure protects the assembly from the hazard the installation site presents. Here are some ways to accomplish this task:

- When evaluating an enclosure for a backflow prevention assembly, first look to the installation site to see if there are any unusual challenges such as temperature, wind or durability.
- Be sure the enclosure is sized to fit all necessary parts.
- Properly evaluate insulation and heat requirements.
- Be sure the wall materials will have the desired strength.
- Always give yourself a good installation pad to assure the enclosure will stay strong and stand up to regular use and maintenance.



Choosing a backflow prevention enclosure is similar to buying insurance. When you buy insurance, you never know how much to buy. You hope to never have a claim; but if you do, you hope you bought the right type of coverage. The same variables are present when choosing an enclosure: it is needed to protect against unusual or adverse conditions – and you hope you have the right type.

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Chapters' Corner

Central Valley CA & Michigan ABPA Chapters each awaiting “Big moves” from their respective state governments

A pair of our ABPA chapters are struggling to get back on their feet, post-pandemic. And, at the same time they each face attrition challenges from within their groups, Central Valley and Michigan ABPA chapters are also facing uncertainty, thanks to their respective state governments.

Central Valley (CA) ABPA Chapter

Out in the part of California that's home to more almonds, grapes and tomatoes than movie stars, palm trees and Botox, Mike McKeever remains president of the Central Valley ABPA Chapter.



Central Valley California ABPA Chapter President Mike McKeever, Treasurer Drek Beardsley and VP Steve Reyes (L-R) have each held their posts for several years.

“I’ve been chapter president since way before COVID, starting in January 2018,” McKeever said. “I’m also 71 years old. We are always looking for new people. But we’ve only been able to have a couple of chapter meetings since the pandemic. We’re still waiting for our state backflow regulation changes to become official. When that happens, it will have a big impact on our entire industry, here in California.”

As we’ve reported in several previous newsletters, California’s long-awaited new cross connection policy handbook is due out “anytime.” McKeever reports, the number of backflow tester classes in his state is growing rapidly, in anticipation of the new regulations.

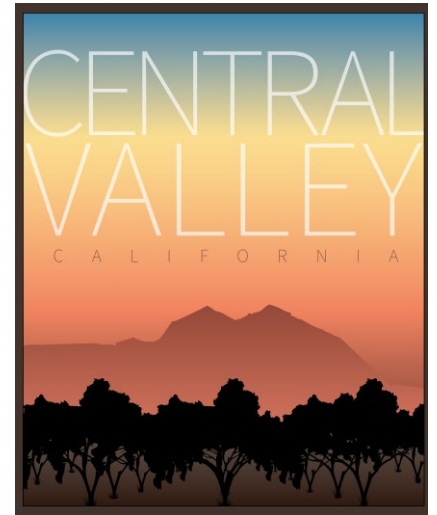
“The revised rules will change everything; all of our municipalities will have to come up with new courses of action,” he added. “Backflow testers will be required to complete more education hours. This will be a big benefit to ABPA. The state has said the rules could officially take effect before the end of the year.”

At the moment, McKeever says many more California plumbing companies are starting to get their employees trained in backflow testing.

Central Valley ABPA Chapter Vice President Steve Reyes agrees, his state's regulation changes will transform the California backflow prevention and testing landscape.

"When the new handbook comes out, the state will have a lot more power to follow up with water system operators," Reyes explained. "State officials will begin to coordinate many more water system inspections. More importantly, they will have more power to follow up on problems. They'll have more 'teeth.' Until now, little or no attention has been given to follow-up. This will be a big change."

The transformation in California backflow rules has both McKeever and Reyes optimistic about their ABPA chapter's future. Septuagenarian McKeever is confident, younger people will join his group.



"ABPA chapters across the country are important to the backflow industry. I plan to remain active, at least until some of those new people show up."
-Mike McKeever

"Honestly, I'm probably the one keeping our ABPA chapter together at the moment," McKeever concluded. "I will run for president again and keep it going as long as I can, because our ABPA chapters across the country are important to the backflow industry. I plan to remain active, at least until some of those new people show up."

Michigan ABPA Chapter

Meantime, three time zones east of California, the Michigan ABPA Chapter is also dealing with a slow bounce back from COVID, along with massive changes in that state's backflow regulations.

ABPA Region 11 Director Jeff Vlisides has been wearing two leadership hats ever since being elected to his national position. He's also been the Michigan ABPA chapter president since 2011.

"All of our chapter leadership has been in place for many years," Vlisides said. "We offer elections every year, but people don't step up to run. I also offered up the presidential position when I became a national director. Filling both positions is more time consuming – along with changes in our company. We've had some attrition. I'm back out in the field, while trying to run the company. It's a challenge."



The state agency referred to as "eagle" is only compounding that problem. The Michigan Department of Environment, Great Lakes and Energy (EGLE) "reinterpreted" a state regulation earlier this year, which Vlisides reports, is turning his backflow tester training business – and the entire industry in his state, for that matter – upside down.

"The state determined, only licensed plumbers can do backflow testing. People we have trained can no longer test. It's unbelievable the chaotic part the state has played in this. We don't know how to advise people on what to do next."
- Jeff Vlisides

"The state was asked what our plumbing code actually requires, regarding testing," he explained. "They determined, only licensed plumbers can do backflow testing. People we have trained can no longer test. It's unbelievable the chaotic part the state has played in this. The rule should not have changed. This started in June and we still don't know how to advise people on what to do next."

Vlisides believes the determination from EGLE will lead to lawsuits. So, it could be quite some time before there is a final,

official resolution to the conflict. In the meantime, his tester training courses remain in high demand – but from different people.

“My school received a letter ordering us to no longer accept non-licensed plumbers as students,” he added. “Our classes are still full, because now licensed plumbers are signing up. But the non-licensed plumbers we’ve been teaching for years are out of luck – at least for now.”

In the midst of this upheaval, Michigan ABPA Chapter Treasurer Matt Capcia says his group was also working to resurrect its annual conference this fall.

“Our annual conference used to always be in the spring; but our last one was pre-COVID, in May 2019,” Capcia said. “We’ve had people tell us they’d prefer the conference in the fall. I’ve been chapter treasurer about 20 years, and the conference was always a big hit.”

Unfortunately, just days ago the Michigan ABPA Chapter conference appeared to be in jeopardy, due to fewer registrations than expected. You can check the latest word on the conference – or possibly an update on the state’s testing rule changes – at michiganbackflowpreventionassociation.com.



Michigan ABPA Chapter members have not been able to gather in person much recently. This 2021 meeting included board members (L-R): Ken Johnston, Kevin Roby, President Jeff Vilisides, Mike Lueck, Gary Bendez and Secretary Larry D'ascenzo.

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