

WaterSense is Common Sense

WaterSense is the EPA's way to conserve water and energy and IAPMO is a keystone of the effort

By Matt Chapuran

A Government Accounting Office report recently issued to Congress forecasts that 36 states will have water deficits in 2013. Frequent drought-like conditions have meant that in some communities, water rationing is in effect as often as three times a week. In response, the Environmental Protection Agency (EPA) has launched WaterSense, a voluntary partnership of manufacturers and distributors. WaterSense labels certified plumbing products that meet consistent national standards for energy efficiency and high performance. "Water efficiency is not a regional issue," says Ben Grumbles, assistant administrator of the EPA's Office of Water, "but a national opportunity to 'connect the drops' and provide water efficiency and energy savings." As one of five certification bodies, IAPMO Research and Testing (R&T) has been a leader in bringing this innovative program to fruition.

What is WaterSense?

WaterSense is in part inspired by Energy Star, a collaboration between the EPA and the Department of Energy.

Launched in 1990, Energy Star was a voluntary program created in response to the Montreal Protocol's recommendations to preserve the ozone layer. "Voluntary approaches were highly suspect by environmentalists," says Jerry Lawson, national manager of the Energy Star Small Business and Congregations Network.



Unlike the Energy Star program, where manufacturers self-certify, the WaterSense program requires manufacturers to earn the WaterSense label by being certified by third-party organizations such as IAPMO R&T. Stephanie Tanner, environmental engineer for the EPA's Office of Water,

says that the hardest challenge was "understanding existing international requirements and trying to align those with how organizations were already running." Certification bodies like the American National Standards Institute (ANSI) provided critical assistance.

Phase One: High Efficiency Toilets (HET)

WaterSense standards require that a product uses less energy and, at the same time, performs better. The first products certified by the WaterSense label were high-efficiency toilets (HET). Grumbles reports that eight different manufacturers are providing the marketplace with 60 different types of toilets. "There are tremendous savings in water efficiency," Grumbles says, predicting that the HET program will save 89 billion gallons each year. "The products speak for themselves," he notes.

The standard has been reduced from 1.6 gallons per flush for single-flush toilets to 1.28 gallons or, in the case of dual action toilets, an average of 1.28 gallons per flush. The calculation for dual action toilets assumes that one out of every three flushes will be a full flush measuring 1.6 gallons, with two single flushes each measuring 1.1 gallons for an average of 1.28 gallons per flush.

WaterSense and IAPMO mirror ANSI standards for the dimensions of material to be used in testing. According to Ken Wijaya, senior laboratory director of IAPMO R&T Lab, "Normal human consumption produces waste between 200 and 250 grams." To guarantee that WaterSense HETs achieve a higher standard of performance, the new requirement is for removal of solid waste of not less than 350 grams.

IAPMO R&T: Serving its Customers Faster Than Ever

Grumbles says, "Water efficiency is the wave of the future and manufacturers are stepping up to the plate. More than 400 retailers, manufacturers, and distributors are now taking part in the WaterSense program." However, the voluntary nature of the program and the reliance on third-party testing means that WaterSense would fail if the certification groups weren't agile and efficient in their testing.

Shahin Moinian, P.E., senior director of IAPMO R&T, points proudly to the certification speed with which IAPMO R&T services its client manufacturers. Three years ago, IAPMO R&T's goal for turnaround time was two months. Today, from application submission to approval, the agency strives for a turnaround time of five calendar days. To maintain this aggressive schedule, IAPMO R&T has added more engineers to its ranks and streamlined the process so that fewer products need to go through an extensive committee review. Internal metrics for every staff member include 95% accuracy during testing. With an industry standard that could be as long as six months, Moinian is confident that IAPMO R&T boasts a competitive edge.

To initiate the certification process for a HET, a manufacturer delivers an application and two representative product samples. The WaterSense standards allow manufacturers to use their own testing facilities rather than wait for a commercial laboratory. IAPMO R&T regularly audits these on-site facilities and the manufacturer's written quality standards. Manufacturers must demonstrate consistent in-plant testing of products and that materials and components received from other vendors are diligently inspected. Auditors review the organizational chart, resumes of senior staff, and job descriptions to evaluate the manufacturer's ability to enforce standards. "We want to be sure that there is a person in charge of quality systems," Moinian says. "Sometimes a manufacturer may have a system on paper, but the system is not implemented or is not mature enough. Sometimes there simply isn't in-plant testing of the products."

IAPMO R&T also provides the EPA with capacity for on-going compliance. Random samples are tested from the marketplace. If a manufacturer falls outside of WaterSense standards, IAPMO R&T can recommend to the EPA to de-list the product or suspend the use of the WaterSense label. The cure period allows the manufacturer 30 days to correct the problem. After that cure period expires, the EPA can impose a 12-month probation on non-compliant manufacturers.

Future WaterSense Phases

Following the implementation of HET standards, the EPA intends to roll out new WaterSense standards for household bathroom faucets and affiliated fixtures as well as irrigation systems.

The same principals of improved efficiency and lowered energy apply to faucets. The previous standards were for a maximum of 2.2 gallons per minute (gpm) at 60 pounds per square inch (psi). The new EPA standards require a delivery of 1.5 gpm at 60 psi, however, there is a minimum performance of .8 gpm at 20 psi. "The minimum performance standards reassure customers that WaterSense fixtures deliver a baseline expectation of performance," Wijaya says.


In August 2007, the EPA issued a Notice of Intent to develop a specification for showerheads. Although the potential for savings is enormous — showerheads account for 17 percent of indoor residential use — the challenges are equally large. "This will be the most difficult specification for the EPA to complete," says Dave Viola, director of IAPMO Special Services. "Showerheads are a product that is so personal and performance is so subjective." The EPA is currently soliciting input from manufacturers and distributors to arrive at the most effective and consumer-friendly specification.

WaterSense irrigation standards will encompass water sensors and soil-moisture sensors. "Thirty percent of water is consumed outdoors," says Grumbles. "Of that, 7 billion gallons are used for irrigation and possibly more than half

could be wasted by running irrigation systems at the wrong time of day, through misapplying irrigation, over-applications, or evaporation."

Following that, the WaterSense program will look to find "a holistic way to label water efficient homes," Tanner says.

"When you reduce water consumption, you reduce energy consumption," says Grumbles. "Running a faucet for five minutes is equivalent to keeping a 16-watt light bulb lit for 14 hours. It takes a lot of energy to heat, pump, and treat water. Households will ultimately save money on their bills by using less energy."

Moinian concludes, "Although it's a voluntary program, with this current climate that is increasingly interested in global warming, it can become a potential for manufacturers to get considerable attention in the marketplace and to show that they act responsibly and comply with federal standards." 



Waterworld

*“Water, water, everywhere,
nor any drop to drink.”
– Coleridge*

By Doug Fredericksen



Seventy percent of our planet's surface is covered by water. Of that, less than one percent is fit to drink. While pale blue cliffs of coastal glaciers calve into the sea, the delicate balance of life on our world is changing faster than we ever imagined.

Eight of the hottest years in recorded history have occurred in the last ten years. Since the turn of the century the average global temperature has risen by 1.3 degrees Fahrenheit. It may not sound like much, but it has been enough to spur the likes of Hurricanes Andrew and Katrina, inundate most of Europe in a flood of near Biblical proportions, and create a drought across Africa that has spurred the first genocidal conflict of the new millennium in Darfur.

Water is the key to life. We can go without food for weeks, but for less than three days without water. Our bodies are composed of 65 percent water. Yet throughout the world, we seem to take it for granted and refuse to conserve this precious resource.

Most of the people in Africa and Asia live on about two and a half gallons of water a day. Here in America, we each use on an average, more than 200 gallons of water a day. More than 50 percent of all the water we use is for irrigation and landscaping.

Along with the huge amount of water we waste with over-irrigation, municipalities seem to “lose” an immense amount of fresh water. New York City's oldest operating water main, the Croton system, was built in 1893, partially out of wood. The three major water mains that feed the city of New York bring billions of gallons of potable water a day to a thirsty city. Of that, there are estimates that as much as 30 percent of the water in some mains is lost through leakage. One small section of the New York system, the Rondout-West Basin alone leaks up to 35 million gallons of fresh water a day according to the New York State Comptroller's office.

The California Aqueduct has been called a wonder of the modern world. It snakes across the state for more than 444 miles, moving water at a gradual pace through carefully engineered canals. At strategic points, such as the Edmonston Pumping Plant near Los Angeles, some of the largest pumps on the planet pump billions of gallons of water up more than 2,000 feet to the crest of mountains and hills that block the waterway's path. Yet most of the aqueduct flows through the desert. The concrete canal is open to the sky and loses massive amounts of the water that flows through it due to evaporation.

While our engineers and water suppliers work long and hard to provide a seemingly unending quantity of water to thirsty American cities that are growing dramatically in dry areas like Las Vegas and Phoenix, many people in the world are forced to walk miles to obtain the most minimal and possibly contaminated supplies of water to sustain life.

There have been simple and effective solutions applied to the problems of providing water in third world situations. One such solution is the foot powered pumps provid-

ed in southern Africa by Pump Aid. The pumps are simple, cheap, and are based on a two-thousand-year-old Chinese design. Another simple innovation is the use of rolling water barrels designed to carry up to twenty times what one person could normally carry from a water source. The barrels have a handle and are designed to roll over rough-type terrain and can be reused for years. In Peru farmers have worked with local anthropologists to revitalize a thousand-year-old irrigation network that would alleviate drought problems and enable the local populace to farm in dry seasons.

While simple designs and procedures have worked wonders to save lives around the globe, it is amazing that we haven't turned our own technological prowess upon the problems of waste and overuse. The technology exists to preserve and protect the resources we have, and it is our duty as plumbers and mechanical contractors to push the envelope with implementation of this technology.

Many jurisdictions in the western half of the nation have adopted municipal codes that require small, solar-powered rain gauges on residences that measure rainfall and shut down the irrigation system during rainy times. Nothing is more infuriating than seeing a sprinkler system operating at full bore during a rainstorm. Dual flush toilets are now on the market and could save huge quantities of water.


Many cities have their own desalter facilities which can supply clean (but non-potable) water to major industrial users such as golf courses, parks, and stadiums. There is no reason why we couldn't extend this use of non-potable water to flush toilets and urinals as well.

Private gray water systems have been addressed in Chapter 16 of the 2006 *Uniform Plumbing Code*. Innovative use of these systems could save and reuse large amounts of water. Flow-restricting aerators on faucets and showers could also help in conservation. There are so many things we could, and should, do to play our part in this stressed environment.

After all, the answers aren't that difficult. Common sense dictates that we should be at least as efficient as people were two thousand years ago. Before the time of Christ, Greek and Roman architects designed their aqueducts so that 95 percent of the system was covered or underground. Some of the Greek aqueducts are as much as 65 feet beneath the ground. From all existing records, their leakage rates for municipal water mains were less than those of municipal systems today, with much of that being water “stolen” by illegal taps into the ancient water mains.

There is no reason we can't provide better services than engineers two thousand years ago. Huge losses in our municipal water systems through evaporation or leakage are both unreasonable and unforgivable. It's time our elected officials got involved in the plumb-

ing industry and made our water supplies a priority.

As plumbers, we've always fought against leaking pipes and wasted resources. It's time the common sense of the working man be put to the forefront of this battle. Our experts need to step up to the plate, modify our codes, stop the foolish waste of resources, and save the world through better plumbing practices. We have the technology, the skills, and the manpower. Let's get on with it. 



Ten Questions to Test Your Green I.Q.

Courtesy of Nehlsen Communications

How much do you know about green building? Take the following quiz and find out. The answers to this quiz came from the Mechanical Contractors Association of Chicago's green building Webinar, "LEED® and Sustainable Design."

- 1** Lighting consumes a negligible amount of energy in most buildings.
True or false?
- 2** Unchecked consumption of the finite _____ reserve drives more exploration and extraction at a higher economic cost, and displaces more natural resources at a higher environmental cost.
a. solar energy
b. fossil fuel
c. nuclear power
d. grain ethanol
- 3** Energy-recovery ventilators can recover _____ percent of the energy that would be lost in conditioning air.
a. 40
b. 60
c. 80
d. 100
- 4** Green roofs reduce run-off and the need for greater sewage capacity.
True or false?
- 5** What does USGBC stand for?
a. United States Green Beautification Committee
b. Uniform Standards for Green Buildings and Commissioning
c. United States Green Building Council
d. United Society of Green Builders and Craftspeople
- 6** Underfloor ventilation can have advantages over overhead air-flow systems because warm air rises.
True or false?
- 7** The four certification levels in Leadership in Energy and Environmental Design (LEED®) are:
a. Certified, Yellow, Blue, Green
b. Silver, Gold, Platinum, Green
c. Approved, Enhanced, Upgraded, Certified
d. Certified, Silver, Gold, Platinum

- 8** When it comes to LEED® credentials, buildings and projects are certified and people are _____.
a. graduated
b. honored
c. accredited
d. approved
- 9** Equipment in a green building cannot use CFC-based _____.
a. refrigerants
b. lubricants
c. fuels
d. illumination
- 10** Rainwater can be harvested and used for which of the following purposes?
a. Watering lawns
b. Eye-wash stations
c. Flushing toilets
d. A and C
e. All of the above

If you scored seven or more correct answers, consider yourself green-friendly. 🌱

To find out more about MCA Chicago, visit www.mca.org.



Answers: (1) False (2) b. fossil fuel (3) c. 80 (4) True (5) c. United States Green Building Council (6) True (7) d. Certified, Silver, Gold, Platinum (8) c. accredited (9) a. refrigerants (10) d. A and C



Today's homeowners are increasingly demanding the comfort, efficiency, and added value of Hydronic Heating (baseboard, radiator, radiant heating with hot water, and indirect water heating). Plumbers, HVAC professionals, builders, and architects are also joining consumers in the drive towards specifying Hydronic Heating.

Members of IAPMO need to stay current



on hydronic heating technology and www.myhomeheating.org is the place to go! Have questions? All you need to do is ask and your question will be answered by one of the members of the Hydronics Industry Alliance.

The Hydronics Industry Alliance is spearheading this new vitality with its new Web site: myhomeheating.org. The Alliance is 29 member companies strong—and growing.



A Powerful New Force in the Hydronic Heating Movement!

myhomeheating.org



Visit myhomeheating.org today and see why THIS IS JUST THE BEGINNING!



LAS VEGAS

CONFERENCE 2007

In the tradition of the 77 conferences that have come before it, this year's Annual Education and Business Conference proved to be a week to remember. Held at the historic Flamingo Hotel and Casino in Las Vegas, Nevada, the conference was filled with thought-provoking discussions, informational education sessions and, of course, good times for all who attended. We kicked off the week with an unforgettable keynote address from actor, comedian, and motivational speaker Alan Thicke, whom many will remember from his days as popular sitcom dad Jason Seaver from the hit ABC show, "Growing Pains." Thicke did not disappoint with his humorous musings on life and tips for success, including Rule #3: "Open a joint bank account with someone who has money."

All joking aside, the 78th Annual Education and Business Conference was a fantastic week for the best and the brightest in the plumbing and mechanical industries. The City of Neon Lights was a gracious host, with plenty of sights to see and things to do at the end of each conference day.

As usual, the IAPMO staff worked hard to pull off another exceptional conference. Each year it seems as though things couldn't get any better, and yet, each year they do. The following pages are filled with photos highlighting the events of the week, from fun things like the parties and golf outing to more serious business, like the educational seminars and the code development Assembly Consideration Session. All in all, this year's conference was a rousing success. I encourage you to turn the page and read more about it!

Like many of you, I look forward to IAPMO's annual conference year after year. What other time is there for so many leaders in the plumbing and mechanical industries to gather in one place? I love watching the free flow of information and debate, knowing that out of these conversations, members are taking home lessons and ideas that will help strengthen our commitment to safety and potentially contribute to innovations in the industry. All of us are in this to help protect the public's health and safety, and participating in the Education and Business Conference is a great place to start.

Plans are already in motion for next year's conference in Atlanta, Georgia. It will be running concurrently with the ISH North America trade show, the largest of its kind for our industry, with manufacturers from the kitchen and bath, plumbing, and HVAC sectors represented. Though it's hard to imagine a conference that could possibly be bigger and better than the one we just had in Las Vegas, I know our hardworking IAPMO staff can pull it off — they do every year. If you've never been to an IAPMO conference before, we'd love to see you next year. I guarantee that it will be an experience you won't regret. See you in Atlanta!

Russ Chaney

- IAPMO Executive Director GP Russ Chaney

Meet Your Board of Directors



(Front row seated left to right) Dan Daniels, Immediate Past President Christopher Salazar, Vice President Bob Siemsen, President Ron Rice, Secretary/Treasurer Ken Carlson, John Roth, and Jed Scheuermann. (Back row standing left to right) Tom Gugino, Gary Hamilton, Daniel Nunez, Fred Volkers, Robert "Bud" Riestenberg, Doug Fredericksen, Bill Ericksen, Bruce Pfeiffer, and Gary Hile.



Industry Person of the Year

Kurt Steenhoek



Kurt Steenhoek, the 2007 Industry Person of the Year, has worked tirelessly for better codes to protect public health and safety. He has been instrumental in the ongoing code battles in his state, where he serves as business manager of his local.

With his extensive background and experience as a journeyman plumber, Steenhoek's involvement in the industry runs deep. He has been rooted with his local, No. 3, since his apprenticeship more than 20 years ago. He worked with the tools until 1995, when he became an organizer for his local. He went on to serve as financial secretary/treasurer of Local 3 for six years, until he was elected business manager in 2002.

Since then, Steenhoek has been a vital part of the industry, fighting for safer codes. He is a very valuable friend to the industry and to IAPMO. 🛠️

Award Recipients

Government Person of the Year

Jordan Krahenbuhl



The honor of Government Person of the Year was awarded this year to Jordan Krahenbuhl, a second-generation plumber who learned the trade under the watchful eye of his father and brothers. One can see by the way he conducts himself that Krahenbuhl has a tremendous work ethic, instilled in him through years of hard work.

Krahenbuhl has a genuine respect for the plumbing code that he so passionately defends. One never has to guess where he stands on an issue, as he always makes it crystal clear. He truly cares that a job will be installed in compliance with the code and will be a lasting monument to craftsmanship.

Krahenbuhl has been the chairman for the plumbing and mechanical code committees that provide interpretations and local amendments for building officials in Southern Nevada. He has always been a loyal supporter and leader for the Southern Nevada chapter, serving as chairman and vice chairman. He was also elected to two terms on IAPMO's board of directors, serving the central district. 🛠️

Award Recipients

American Flag Award

Richard Lisle



This year's American Flag Award was bestowed upon Richard Lisle of the Southern Nevada chapter. Lisle is a graduate of a five-year union apprenticeship program and became a licensed mechanical contractor before finding his true calling as the executive director of the Mechanical Contractors Association in New Mexico and in Las Vegas, where he has served for the last 24 years.

Lisle has been a loyal supporter of the *Uniform Plumbing Code* both on the local and national levels. He has attended IAPMO's last 10 conferences, where he has spoken out on issues to support IAPMO's position.

As an active member of the Southern Nevada chapter, Lisle has provided unwavering support of the *Uniform Codes*. Board member Tom Gugino noted, "It is most reassuring to be able to pick up the phone and know that, with one call, an entire support network will be ready, willing, and able to defend our codes."

Lisle fully understands the importance of his fiduciary responsibility as a labor management trustee to provide and protect the pension and health and welfare benefits for the members. His commitment to the industry makes him the deserving recipient of this year's American Flag Award. 🛠️

George Kauffman Lifetime Achievement Award

Gilbert Kissling



This year's George Kauffman Lifetime Achievement Award was given to Gilbert Kissling, past IAPMO president. He has been a member of IAPMO since 1987 and has been a vital part of the plumbing and mechanical community for more than 50 years.

This is not Kissling's first award; his commitment to the industry was also recognized in 1994, when he received IAPMO's Government Person of the Year award.

Kissling's résumé includes a long and distinguished list of positions he has held in the plumbing industry, including secretary/treasurer and business manager of his local; member of the UA National Code Committee; multiple board positions for cities in Texas as well as the state of Texas; and member of the IAPMO board of directors.

Demonstrating his devotion to the industry, Kissling's family takes the "brotherhood" of their local, No. 142, to a literal level; his father and brother were both members, as his is eldest son today. His family's long history with their local is a true testament to our award winner's dedication to this industry. 🛠️

Opening Session



President Ron Rice calls the opening session to order and greets the membership to the 78th Annual Education and Business Conference in Las Vegas.



Vice-President Bob Siemsen delivers the Bylaws Committee Report.



Conference chair Bill Laub Jr. introduces the Durango High School Air Force Junior ROTC color guard, which presented arms for the inaugural Pledge of Allegiance.



Members of the Durango High School Air Force Junior ROTC color guard remain at attention.



Opening Session



Mayor Oscar Goodman welcomes IAPMO to the city of Las Vegas before entertaining the assembly with humorous anecdotes.



Conference host Jordan Krahenbuhl dons his trademark shades as he welcomes conference attendees to his city.



Paul Wilkins, director of Building and Safety for the city of Las Vegas, takes the podium to speak a few words of welcome.



Board member Tom Gugino (right) presents Richard Lisle with this year's American Flag Award.

Opening Session



Kurt Steenhoek (left), recipient of the Industry Person of the Year award, is congratulated by President Ron Rice as board member Dan Daniels presents a plaque.



Past President Chris Salazar (left) and President Ron Rice present Jordan Krahenbuhl with the Government Person of the Year award.



Vice-President Bob Siemsen (right) congratulates Past President Gilbert Kissling (left) on receiving the George Kauffman Lifetime Achievement Award.



President Ron Rice (center) invites the crowd to stand in honoring Gilbert Kissling (left).



Opening Session



Award recipient Gilbert Kissling poses for a congratulatory photo with Roscoe King (center) and past Kauffman Award winner Ed Saltzberg.



President Ron Rice introduces keynote speaker Alan Thicke.



Thicke, a seasoned actor and comedian, entertained the crowd with a humorous and inspirational keynote address.



Opening Session



Companion Committee members sat front and center during the Opening Session, showing support for their spouses and partners. From left: Rita Nunez, Linda Hile, Robin Rice, Kim Pfeiffer, and Cathy Carlson.



With his signature wry humor and comedic timing, keynote speaker Alan Thicke kept the crowd laughing for nearly an hour as he shared many personal stories, from growing up in rural Canada to life in Hollywood.



Father of R&B music star Robin Thicke, Alan expressed how proud is to be able to take a back seat to his son's successful music career.



Following his keynote address, Thicke paused for a photo with board members Dan Daniels, Chris Salazar, Ron Rice, Bob Siensen, and Jed Scheuermann.



Luncheon for Honored Guests



Gary Hamilton, Gilbert Kissling, and Kevin Cotter smile for a photo before lunch.



Jordan Krahenbuhl, Paul Wilkins, Michael Giordano, Tom Gugino, Bill Laub, and Bud Riestenberg discuss the morning's events before lunch is served.



Seated from left: Richard Lisle, Jordan Krahenbuhl, and Paul Wilkins. Standing from left: Jimmy Mouton, Scott Easton, Bill Laub, Bud Riestenberg, Michael Giordano, and Tom Gugino.



Seated from left: Bob Siemsen, Ron Rice, Phil Campbell. Standing from left: David Montano, Dan Daniels, Rickey Fabra, Linden Raimer, Scott Hamilton, and Chris Salazar.



Seated from left: Kevin Cotter, Gilbert Kissling, and Gary Hile. Standing from left: Gary Hamilton, Ken Carlson, Bruce Pfeiffer, and John Roth.



Seated from left: Mike Massey, Ed Saltzberg, and Dick Wagner. Standing from left: Bill Erickson, Doug Fredericksen, Jack Fischer, and Allen Inlow.



Seated from left: Jed Scheuermann, Kurt Steenhoek, Danny Nunez, and Fred Volkers. Standing from left: Phil Ribbs, Courtney Arford, Denver Boney, Bob Courtnier, and Russ Chaney.



Board member Gary Hamilton shares some stories with Kevin Cotter and past president Gilbert Kissling.

WSPTC Cocktail Reception



Board members Ken Carlson, David Montano, and Gary Hile enjoy the evening.



Dwight Perkins, IAPMO regional manager, and Linden Raimer, senior director of Field Operations, get together for an evening of food and friends.



Longtime friends Phil Ribbs and Pennie Feehan share a laugh.



Dave Levanger, Leonard Ramociotti, and Terry Swisher enjoy each other's company over good food and drink.

