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The Plumbing Industry Prepares for Low Lead in 2014

The State of Lead Free

How the plumbing industry has responded to lead free and the enforcement uncertainty that remains.

P 20

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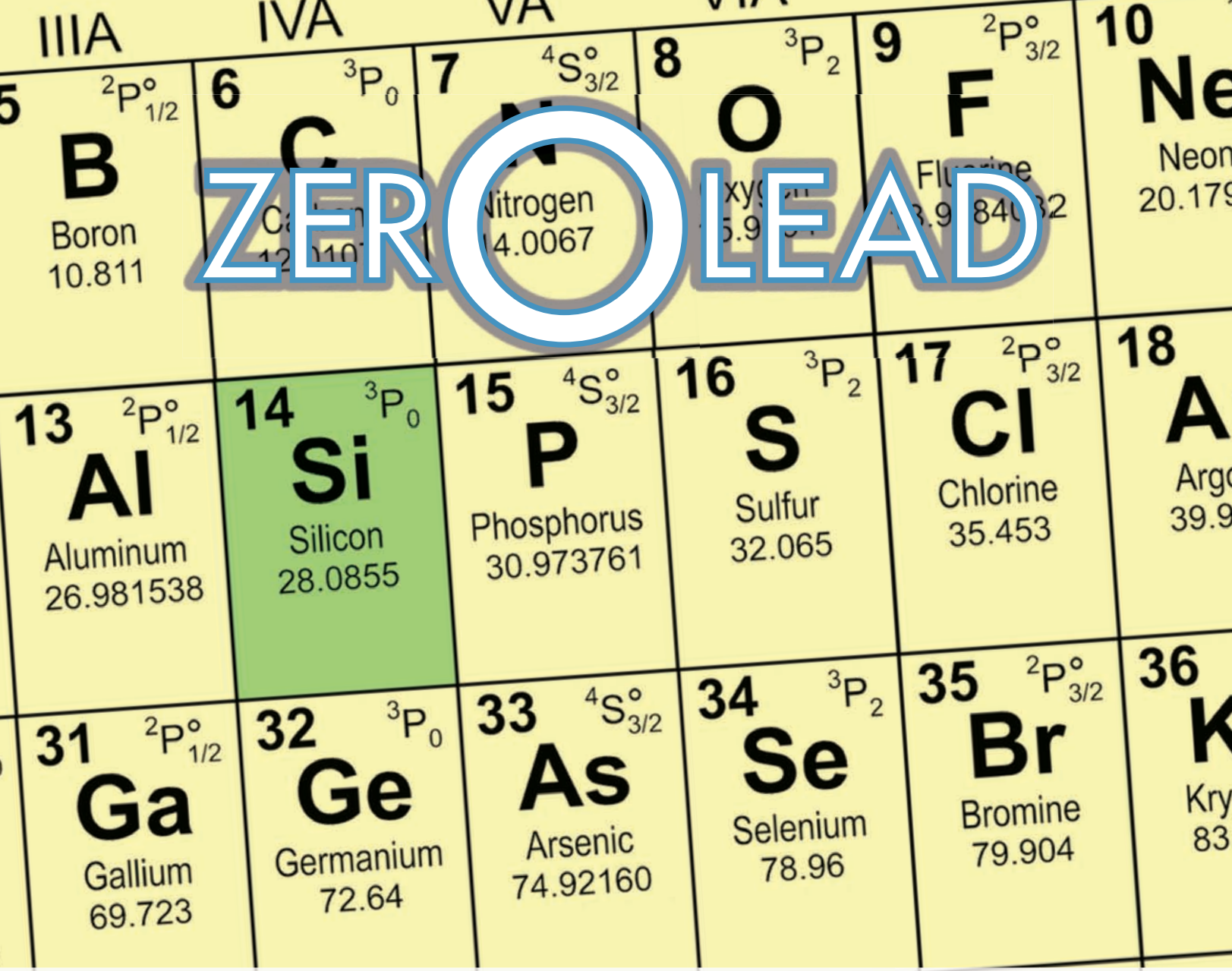

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FROM THE EDITOR

Regular unleaded

By Jim Schneider, LEED AP
Editorial director

When we began discussions about a possible supplement to *Plumbing Engineer*, *The Wholesaler* and *Phc News* to discuss the lead free issue, we wondered whether there was enough left to talk about. After all, the Federal Reduction of Lead in Drinking Water Act was passed more than two years ago, and only six months remain before it goes into full effect on January 4, 2014. Articles have been written, the industry has implemented new products and procedures, and everyone should be ready by now. Right?

The deeper we dug into this, the more realized there is a lot to talk about. As a student of history, I think it's important to understand how things came to be in order to best understand how things are. And there is quite a history of how we came to the passage of this federal law. Many might assume this regulation was forced on the industry, but the story is much more complex. In fact, the plumbing industry was active in bringing the law to life.

As you'll see in "Lead Free: A History" on page 8, the development of the federal lead law is a case study for how industry and government can work together to accomplish something positive for the public good. By taking ownership of the issue, the industry was able to offer input as a partner to the process and craft something workable, rather than just wait for unreasonable rules to be handed down from on high.

Today, the plumbing industry continues to refine its processes and prepare for the law to go into practice at the start of 2014. This has involved a big investment on the part of manufacturers to bring their product lines and manufacturing facilities in line with the requirements of the new law. It's also meant a great deal of planning on the part of wholesalers to ensure their stock is fully ready and compliant by January 2014. For engineers and contractors, it's a process of learning how to know which products are compliant and to be prepared for any adjustments they may have to make in their design, acquisition and installation routines.

Past and present already give us a lot to discuss, but perhaps most intriguing is the future. With so much work being done to prepare for this law, one might think the future is pretty well laid out for compliance to the lead law. But, nothing could be farther from the truth. Just six months away from the effective date of the law, there remains a myriad of questions about its implementation and enforcement. As we go to press with this supplement, we are still waiting on any clarification from the U.S. Environmental Protection Agency (EPA) on the enforcement parameters of the Federal Reduction of Lead in Drinking Water Act.

As discussed in "The State of Lead Free" on page 20, a blueprint for enforcement already exists in California, where much of the low lead initiative began. There is an established framework of third-party product certification from ANSI-accredited providers. This makes it very easy to know which products meet the requirement. The enforcement of the federal law is in the realm of the EPA and, while many expect it will follow the same path as the states, there is no guarantee of that.

EPA was expected to release guidelines to clarify the issue, but at press time, it was just announced that no guidelines will be released prior to the enactment of the law in 2014. Instead, a set of frequently asked questions will be posted to hopefully shed light on what the enforcement methodology will be. The industry continues to fight for clarity, both for itself and the end user, but for the moment uncertainty continues to reign.

We will continue to revisit this issue as we draw closer to 2014. Look to our websites, www.plumbingengineer.com, www.thewholesaler.com and www.phcnews.com for analysis of the FAQs when they are released. We will also follow the continuing development of this issue online and in print. Stay tuned, because there is still a lot to talk about. ●

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LEAD FREE: A HISTORY

The lead reduction initiative has grown over decades and came of age at the state level.

The federal Reduction of Lead in Drinking Water Act, set to take effect January 4, 2014, has been nearly 40 years in the making. The original federal Safe Drinking Water Act (SDWA) passed in 1974 and mandated that the U.S. Environmental Protection Agency (EPA) set standards for drinking water quality, including the regulation of lead content in drinking water.

THESE STANDARDS EVOLVED OVER THE DECADES, with additional provisions and controls being added at both federal and state levels. In 1986, an update to SDWA included a lead ban for pipe, solder and flux in any public, residential or non-residential facility providing water for human consumption. Before this ban went into effect, most solders used to join water pipes had a lead content of nearly 50 percent. After the ban, solder lead content went down to 0.2 percent.

More updates came in 1988 with the Lead Contamination Control Act (LCCA), which sought to reduce lead levels in drinking water at schools and child care centers. And in 1991, the Lead and Copper Rule (LCR) required public water suppliers to monitor lead levels in drinking water and treat it if lead or copper were found at unacceptable levels.

California dreaming

In 2006, California upped the ante with the introduction of AB1953, a bill that proposed to update the California Health and Safety Code to phase out lead content from pipe, pipe fittings and any fixtures conveying potable water or water intended for human consumption. In the beginning, the plumbing industry was wary about the proposed legislation. The industry had been voluntarily reducing lead for many years and already lived by the performance-based standards of NSF/ANSI 61, "Drinking Water System Components – Health Effects, which tests the end use water quality after it goes through the product, rather than the physical product itself.

"NSF 61 is the method for evaluating the toxicity of plumbing products," explained Dr. Norman Hester, Technical Director at the ANSI-accredited, third-party testing and certification firm Truesdail Laboratories in Tustin, Calif. "It involves an extraction test with a synthetic drinking water and you look for toxic metals or toxic organics in the leachate to certify a product as being free of public health risks."

Accustomed to focusing on the end use, performance-based approach of NSF 61, the plumbing industry was at first skeptical of regulations that would zero in on the material content of the products themselves.

"It's kind of a belt and suspenders approach," said Barbara Higgens, Executive Director of Plumbing Manufacturers International (PMI). PMI took an active role in working with legislators, both on the state and federal level, to help craft a law that serves public safety and works for the plumbing industry, as well. "We had a performance standard [in NSF 61] and now we also have a prescriptive standard that looks at the content of the faucet and its components."

During the early stages of the development of AB1953, representatives from PMI and the plumbing industry actually showed an exploded view of a deconstructed faucet to provide legislators with a picture of just how complex an apparatus it is. While just one example, it did help offer perspective to lawmakers with little or no understanding of what goes into these types of products or how they're made.

Higgens recalled, "[Legislators] would point to more simply constructed products like a water meter, which is essentially a box, and say if that can be lead-free, why can't other components? As a result of showing that exploded drawing of a faucet, we were able to arrive at the formula of 0.25 percent lead by weight on wetted surfaces."

Altered states

This 0.25 percent lead by weight on wetted surfaces definition of lead-free would prove to be important because it

(Continued on page 10)

Lead-free history

Continued from page 8

would later become the standard definition used for the federal Reduction of Lead in Drinking Water Act. Before making it to the federal level, the movement toward lead free took hold in a number of other states, and California in many ways served as a blueprint. Vermont introduced Vermont Senate Bill S.0152 in 2007 to address lead levels. First passes at the law were enacted in 2006 for California and in 2008 for Vermont. Maryland followed suit with House Bill 372 in 2010, the same year that saw the effective date of the California law.

"California was first, but they were followed by New Hampshire, Vermont, Louisiana and others who passed the exact same wording as California did," Hester said.

According to Higgens, it was the industry's efforts that created consistency among the early state adopters. "PMI intervened and convinced [the states] to harmonize on the same California value," she said. "The other states were each picking different levels."

This would help smooth the path to the federal lead law later. By taking a proactive approach and working in concert with legislators, the plumbing industry was able to arrive at a formula that would both serve the public good and be acceptable by manufacturers and installers.

"Early on, we didn't necessarily agree with the method that was being used for some of the calculations," recalled Joel Smith, Director of New Product Engineering for Kohler Faucets North America. "We did help spur some of the changes to make it more straightforward for the manufacturers. Once it was clear the legislation was moving forward, we did our best to ensure it was something that was going to work for us, our partners in the distribution channel and for consumers."

Enforcement

With the laws enacted and standards set, how would these new lead levels be confirmed and enforced? In California, third party certification would set the tone. "California passed a bill in 2008 [following the enactment of AB1953 and sponsored by PMI] that mandated third-party certification and specified how the testing was to be done and the agencies that could do the testing," Hester said. "They specified that an ANSI accredited certification body had to do the testing and certification."

The analytical test itself is based on the EPA's method for testing solid waste. "We used a protocol that was developed by the consumer products safety division for testing lead in jewelry, which is very similar," Hester explained. "The net effect is that you take some representative samples of the material, digest them in strong, hot nitric acid, and then analyze it with an inductively coupled plasma spectrometer."

"California's legislation requires there be third party certification, so each manufacturer has to go to one of the third party certifiers, get that certification and then have our product package marked with that certifier's mark," Smith said. "It's also listed on the certifier's website. In addition to that, California does its own independent testing, so the Department of Toxic Substance Control in California picks a random set of samples from the marketplace they audit and post the results on its website."

The verification requirements go beyond just testing the product. "We don't certify just on the basis of the test," Hester explained. "Accreditation involves inspection of facilities and the manufacturing process. It's an ongoing program of visiting, testing and auditing purchasing records to make sure they're buying brass from the same source we tested."

Many believe that the federal version of the lead law will follow a similar path, but until the EPA establishes official guidance (see "The State of Lead Free" on page 20), it is unclear what enforcement will look like on the federal level.

"We're hoping the federal government will follow the lead of California," Higgens said. "The more time that goes on, the more we hope that because with an effective law date of January, it doesn't provide a lot of time for manufacturers to change what they're doing."

As the federal law ramps up and the industry prepares to make the change, it is important to note what happened at the state level. It serves not only as a possible blueprint for how things will work nationally, but also demonstrates how a unified industry can create a positive collaboration with lawmakers and regulators and take ownership of an issue that can provide benefits for everyone. ●

Why lead?

In the midst of all the legislative and technical effort going into reducing lead content in plumbing products, many may ask a very simple question, "What is lead doing in plumbing products in the first place?" There are several reasons for its presence in the metallic alloys that make up our pipes, valves and fixtures. The first is historical. Lead has long been used to move water around. In fact, the word "plumbing" itself derives from the Latin word for lead, "plumbus."

The reason lead has been used so commonly is because of its high malleability and relatively low melting point. These qualities, along with the metal's high resistance to corrosion have made it popular for use in plumbing. Also, when added to other metals, lead permits the alloys to retain many of their original properties. This eases the machining of plumbing components.

"Lead serves two main purposes," said Joel Smith of Kohler Faucets North America. "One, it is a lubricant. So as you're machining brass it lubricates the tool as it goes through so you get a lot less wear on the tools. And two, lead helps fill in porosities in the metal so when you are casting brass components, lead will help fill in a lot of the holes and give you a more leak tight casting."

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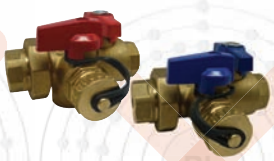

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MAKING CHANGE MAKES DOLLAR$ AND $ENSE

BY CLIFF D'ANGELO
CONTRIBUTING WRITER

You may well have been living under a rock if you haven't yet heard about the new "low lead" legislation and the impact it will have on our industry. Monthly, for nearly the past two years, articles have appeared in various industry publications, touting the good and the challenges of this new low lead legislation Articles have advised us of the anticipated product changes and the impending industry impact. So, when I was approached, once again, to pen another article about this legislation, I feared I might simply be out of ideas. How could I differently, yet effectively add anything new to the plethora of information? But, while perusing the multitude of articles written by assorted industry experts regarding the low lead legislation and its impact, I realized that perhaps we just haven't yet done a sufficient job of convincing the industry of the importance of why we would benefit from this change.

Change for the good

Selling the idea of positive change has been the focus of practically my entire career. In fact, most of my adult life has involved accepting change and getting other people to accept change. Great sales people make selling look easy as they assist their customers in accepting the changes they'll need to make in order to buy their products. While I'm quite comfortable selling change, I'm also not unlike most people in that I am quite uncomfortable accepting that change.

The plumbing industry is also uncomfortable accepting change. By nature of our products, and their essential functions within our lives, homes and buildings, we often deem that we cannot afford to experiment or adapt to new products or technologies because of the possible risks or negative impact. We are keenly aware that our name and brand reputation are two of the most powerful assets we've earned, and any change that doesn't work could have serious impacts on our future business opportunities.

So how can we be successful in selling change within the plumbing industry, and how can we turn that change into making dollars and sense? We first need to establish trust by developing personal relationships. While this isn't possible with this written article, it is possible to convey to you the importance of having a greater sense of comfort and confidence regarding the creation of this legislation and why it's imperative that you make the successful transition.

Why the low lead legislation? Simply stated, lead is poison to the human body. Children under the age of six and pregnant women are extremely vulnerable to the effects of higher levels of lead in their systems. Elevated lead levels affect the nervous system, resulting in unhealthy conditions from upset stomachs to brain damage. Lead used in the manufacturing of plumbing products can leach into the potable water system, contaminating the water supply and subsequently our drinking water. The amount of lead contained in a water system is dependent upon several variables, such as the corrosive effect of the water and the time period the water has been exposed to the lead-containing surface. The EPA continually evaluates sources of exposure to environmental lead, and continues to decrease that exposure by reducing the lead content in various materials

(Continued on page 14)

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Sioux Chief

D'Angelo

Continued from page 12

The foundation of the plumbing industry is rooted in protecting the health of society. So, the protection of women, children and our environment should fall within those core beliefs. It is paramount that we embrace this new legislation as an enhancement of our fundamental values. We must use the public exposure of the lead issue to highlight our long-standing principles as an industry in protecting the health of society. By doing this, we do the right thing and we make sense.

> Low lead legislation aids the plumbing industry by heralding the progress of innovation.

Spurring innovation

Low lead legislation aids the plumbing industry by heralding the progress of innovation. Manufacturers are forced to look at new materials and technologies, develop more efficient machinery and evaluate outsourced component vendors. Smart companies have put together sustainability plans with a roadmap of the opportunities that this legislation will provide. They know they can reduce competition, take advantage of green marketing opportunities, and readjust inventory levels to position themselves as industry leaders. Innovations in the industry already include new pipe joining technologies and non-metal piping systems that are pre-insulated to increase energy efficiency. This forced innovation is the catalyst that moves the industry forward while preparing us for future legislation and increased global competition.

Forcing cooperation

Manufacturers, wholesalers, retailers and contractors are forced to communicate the changes in product and inventory to one another. This cooperation is vital to the success of any legislative change. Increased communication reinforces relationships that are key to successful business transactions.

As a whole, the plumbing industry is working to further understand the various implications of the legislation and how best to identify, package and promote the necessary product changes. Input will be provided to the legislative body as to how this and future legislation can be implemented and enforced with the least amount of impact on profitability and the smoothest transition to the end consumer. Dialogue with contractors regarding material and installation changes provides an opportunity to educate and

demonstrate the expertise of your company and field representation.

Increasing profitability

The low lead legislation has caused manufacturers to change products and, at the very least, retain dual inventory for a period of time. Most manufacturers will incur additional costs in manufacturing machinery, raw materials and research and development. This increased cost flows to the market via price increases from wholesalers and contractors who, in turn, inflate prices for building owners.

Increased pricing should add to the profit wholesalers and contractors will make on the low lead materials provided for jobs. This product change will force increased profitability through the sales channel and, in some cases, new material with lower raw material costs, some of which can be processed for fewer dollars than the original leaded material. These costs are seldom passed on as a price reduction and will boost additional profit dollars for the manufacturer.

Changing colors

Our industry is ever-so-slowly turning green. Spurred on by new legislation, such as the requirement for low-flow fixtures and reduced lead content in drinking water has forced us to look at sustainability issues. Throughout the past few years, I've been working with companies within our industry to help them better understand and navigate the impact of sustainability, while watching them embrace the change to become greener. Some have welcomed and adopted this change and have begun to reap the benefits of lower energy usage while adding profitable selling opportunities. But, there are others who have held on to the belief that this is yet another passing fad and that business will return to the way things have always been done.

Change is on its way. The low lead legislation takes effect in January of 2014 and can provide positive, profitable change that makes good dollars and sense for your company. Protecting the health of society is the plumbing industry's core value. Protecting the health of our world is the core value of sustainability. Things haven't changed as much as we think. ●

Cliff D'Angelo *is a LEED AP and a veteran of the plumbing products manufacturing and wholesale industries in sales and sales management, with both the Kohler Companies and Ferguson Enterprises. He is principal owner of GREENCLIFF, LLC, providing LEED and sales consulting services. D'Angelo can be contacted by email at greencliff@netbusiness.com.*

Survey Shows Need to educate plumbing industry

By Mike Flenniken

Get the Lead Out Plumbing Consortium

The federal Reduction of Lead in Drinking Water Act may be less than a year away from taking effect, but a significant portion of the plumbing industry remains unaware of the new law, according to survey results. The Get the Lead Out Plumbing Consortium, a cross-section of the plumbing industry comprised of leading trade associations and manufacturers, released results of an online survey sent to 55,000 plumbers to measure awareness of the new law. The law will make it illegal to sell or install pipes, fittings or fixtures in applications that convey water for human consumption that have a weighted average lead content exceeding 0.25 percent in the components that contact water.

In addition to learning that 26 percent of those surveyed had no knowledge of the upcoming change, the poll found that:

- 11 percent plan to actively promote the changes taking place within the plumbing industry
- 65 percent will work through the inventory in 2013.
- 24 percent will either continue to use the product in 2014 or expect the distributor to take back the inventory

"We have more work to do in educating everyone in the industry about the implications of this new law"

"The survey, undertaken just after the consortium began its training and awareness efforts, certainly reflects the challenges our industry faces with the no lead conversion in 2014," said Cindy Sheridan, chief operating officer for the Plumbing Heating Cooling Contractors Association (PHCC) Educational Foundation. "We have more work to do in educating everyone in the industry about the implications of this new law, but the consortium is making great strides in providing information and training so that plumbing industry officials will be properly prepared by the first of the year."

Sheridan said the consortium began meeting in August 2012 to raise awareness of the law. The consortium aimed to educate four target markets: building officials, plumbing contractors, plumbing engineers and wholesalers/distributors. Members of the consortium include the American Society of Plumbing Engineers (ASPE), the American Supply Association (ASA), the International Association of Plumbing and Mechanical Officials (IAPMO), the International Code Council (ICC), Legend Valve, Milwaukee Valve, NIBCO Inc., PHCC, the PHCC Educational Foundation, Plumbing Manufacturers International (PMI), Reliance Worldwide, Viega and Watts Water Technologies.

More than 300 professionals participated in a webinar the consortium held in January that covered the law and its background, interpretation issues relevant to the law, manufacturing issues surrounding the development of new lead-free products, installation considerations and preparing for implementation of the law.

"It was gratifying to see such a large cross-section of the plumbing industry join us for the webinar," Sheridan said. "Education and understanding critical to help ensure a

(Continued on page 18)

Consortium

Continued from page 16

The consortium now meets monthly, via conference call, to keep members updated on changes and address concerns and issues that are anticipated ahead of the law taking effect. One of these concerns, Sheridan said, was that some inspectors wanted to know how to identify lead free materials in the field since there is no standard industry lead free mark, and manufacturer markings can differ depending on the size of the fitting and space available on it for marking.

smooth transition to the use of lead free products by January 4, 2014."

The consortium now meets monthly, via conference call, to keep members updated on changes and address concerns and issues that are anticipated ahead of the law taking effect. One of these concerns, Sheridan said, was that some inspectors wanted to know how to identify lead free materials in the field since there is no standard industry lead free mark, and manufacturer markings can differ depending on the size of the fitting and space available on it for marking. The consortium's training material includes slides that offer examples of such markings.

"That will be a challenge moving forward," Sheridan said, "Building officials need to become familiar with lead-free product identification markings used by the various manufacturers."

Sheridan explained that concerns about lead free product markings, as well as which products are required to be lead-free, underscore the need for industry-wide training to understand the law.

Sherard Jones, director of Education and Training Services for IAPMO, represents IAPMO on the consortium. He said IAPMO, for its part, has circulated the presentation from the webinar to its field staff members and encouraged them to make it part of their presentations.

"Our field staff has been asked, as they go out and provide educational opportunities, and they go to chapter meetings or other events where they've been asked to teach or present, to use this presentation so that we're actually directly on the ground trying to effect the change, trying to make sure that the information is getting out," Jones said.

Sheridan said PHCC has been offering in-person training at PHCC and ASPE chapter meetings and has done sessions

at some wholesaler buying group meetings, as well as developed collateral that could be put on counters at wholesale houses. She added that the results of the survey were about what they expected, and is hopeful that at the end of the year they will be able to survey people again so that awareness can become considerably higher. Sheridan noted that the law is "a real game-changer" for contractors.

If contractors do not prepare and work with distributors and manufacturers, they will be faced with non-compliant (non-saleable) inventory in 2014.

"Installers must use proper installation and soldering techniques on the new lead free products, and they should work with suppliers to obtain installation material recommendations and training to ensure the best possible joints with the new lead free materials," Sheridan said.

Recognition of the need to educate the entire industry is essentially how the consortium came about.

"We were talking about training our members and then thought, 'Well, this is really an industry issue,' and everybody came together," Sheridan commented.

A recording of the January webinar and a copy of the presentation are available on the consortium's website (www.gettheleadoutplumbing.com) along with a list of upcoming training sessions. Each session will be conducted by consortium members at industry events throughout 2013. ●

Mike Flenniken is a Staff Writer in Marketing and Communications for IAPMO.

STATE OF LEAD FREE

BY JIM SCHNEIDER

The plumbing industry prepares for a low lead future under a cloud of enforcement uncertainty.

There is a common narrative that paints industry and government as mortal enemies, locked in legislative combat. The story depicts industry as an irresponsible actor trying to shed itself of any rules, and likewise shows government as working to stifle innovation with regulations. But what happens when that narrative is tossed out? Could there possibly be an instance where an industry long dedicated to public health and safety actually works with government to enact a higher product standard? Crazier still, what if that industry actually called for more clearly defined rules from a government that is slow to clarify them?

No, this scenario isn't imaginary. It is happening right now with our industry. By now, most are aware that the federal Reduction of Lead in Drinking Water Act passed in 2011. Perhaps a smaller number realize that this law will go into full effect on January 4, 2014. (See "Survey Shows Need to Educate Plumbing Industry" on page 16.) An even smaller number may know that the plumbing industry was actually a primary proponent of getting this law passed. Even less well-known is the fact that six months out from the enforcement deadline, there are still many questions left unanswered. To understand where things are today, it's important to look at how we got here.

Going national

After some initial resistance, which stemmed from the assertion that the performance-based NSF 61 standard was more effective at monitoring lead levels, the plumbing industry came on board with shaping the prescriptive 0.25 percent lead content requirement. With state lead laws being passed in California and other states, the plumbing industry recognized the need to be proactive in setting a federal standard. This was necessary for several reasons. First, there was a concern about "product dumping." If California had a particular lead requirement, neighboring states didn't want product that could no longer be sold in that state dumped in their jurisdiction.

Perhaps more importantly, with lead laws percolating in several states, manufacturers represented by Plumbing Manufacturers International (PMI) wanted one good standard instead of 50 different and varied protocols.

"People often think this bill was foisted upon us, but we were instrumental in crafting the bill to create a level playing field," said Barbara C. Higgens, Executive Director of PMI. "Our members are reputable manufacturers and good stewards of regulation. We wanted to make sure there was a clear enforcement mechanism available so other companies would have to comply, too."

"The industry was opposed to this initially. There was a lot of work to support that this should be performance-based, rather than prescriptive," said Lee Mercer, Director of Product Compliance at Moen and an active participant in PMI's efforts dealing with the lead legislation. "But once this was adopted in California, we wanted standardization across the U.S. We couldn't have every state and jurisdiction mandating something different. The California legislation was critical to modeling what we did for the national requirement."

"We helped spur some of the changes to make it more straightforward for manufacturers. We did our best to make sure it was something that was going to work for us, work for our partners in the distribution channel and work for consumers, as well," explained Joel Smith, Director of New Product Engineering at Kohler Faucets North America and another longtime player in the lead legislation arena. "We

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Continued from page 20

Lead [mostly] free

While the term "lead-free" is used frequently when referring to the Reduction of Lead in Drinking Water Act, the law does not completely ban lead from plumbing products. It does, however, require no more than a weighted average of 0.25 percent of lead on the wetted surfaces of the component. So basically, when you average together every component of a faucet that touches water (and there are quite a few), the total lead content averaged between them cannot exceed 0.25 percent.

This calculation was arrived upon through collaboration between industry and government during the passage of the California lead reduction law. It represents a level that industry can work with and also ensures acceptable water quality and public safety for the end user.

wanted to make it easy for them to find a compliant product so they wouldn't have to wade through a lot of jargon to figure out what is compliant and what isn't."

The plumbing industry found an unlikely ally in the Federal Lead Act's sponsor, Senator Barbara Boxer (D-CA). The two parties approached each other with some skepticism at the start. The industry still believed in the safety of products under the existing NSF 61 performance standard, and Boxer's office was unsure of the industry's intentions. In the end, both found common ground on the concepts of public health and standardization, and wound up being great partners.

"We approached Sen. Boxer's office to be proactive and harmonize things," Higgens said. "It was really great to be for something instead of fighting against something. This was a positive message that really brought people together. It's about harmonizing the requirement for ease of manufacturing, for inventory efficiency and the peace of mind of the consumer."

Furthermore, PMI worked in a bipartisan fashion to secure support and passage of the legislation with a broad coalition of industry and water organizations, as well as coordinating closely with the offices of Senators Boxer and James Inhofe (R-OK) in the Senate and with staff of Representatives Tom Petri (R-WI), Henry Waxman (D-CA) and Anna Eschoo (D-CA) in the House.

The Reduction of Lead in Drinking Water Act passed the Senate by unanimous consent on December 16, 2010, during a lame duck session. The House of Representatives then passed the bill without amendment by a vote of 226 to 109 on December 17, 2010, and President Obama signed the bill into law on January 4, 2011. With the bill set to go into effect three years from that date on January 4, 2014, the race was on to prepare for compliance.

Getting ready

To prepare for 2014, plumbing manufacturers and the industry needed to accomplish two enormous tasks: develop low lead products to meet the new requirement and get the word out to wholesalers, engineers and contractors who will be impacted by the new law.

On the product side, a great deal of work was already being done to comply with the California law, since that state represents such a large market on its own.

"If you're selling in the U.S., you're likely selling in California," Mercer said. "It was a huge undertaking for the industry. There was a lot of development of new alloys, new products and new tooling."

"It was a big job," Smith recalled. "For us, the main part came first because of the wetted surface area calculation. We had to go through and calculate the surface area of every wetted component in every one of our faucets. It's a tremendous undertaking to do all the calculations, catalog every product that touches drinking water and figure out what needs to change. Then we had to find materials that would be compliant with the law and at the same time would hold up in the field."

Silicon and bismuth are two common substitutes, but the switch is not without challenges and considerations.

(Continued on page 24)

Standard procedure

A number of performance standards from NSF International relate to the level of lead in plumbing products and in drinking water. Following are a few to note in the ramp-up to 2014:

NSF 61, Drinking Water System Components - Health Effects: This is the standard that establishes minimum health effects requirements for materials, components, products or systems that contact drinking water, drinking water treatment chemicals or both. It covers many items, including pipes, fittings and related products. NSF 61 is a performance-based standard, meaning the test examines the actual end product (drinking water) that comes out after going through the product in question, rather than the product itself.

NSF/ANSI 61, Annex G: Added to NSF 61 in 2008, Annex G establishes an evaluation procedure for use when a 0.25 percent lead content requirement needs to be met in addition to current chemical extraction requirements of the standard. With the passage of the AB1953 in California, manufacturers needed to have their product certified to Annex G, as well as to NSF 61, in order to prove their compliance to the new 0.25 percent lead content rule.

NSF 372, Drinking Water System Components - Lead Content: This standard contains the lead content evaluation procedures housed in NSF/ANSI Standard 61, Annex G, less its requirement that products must first comply with the full requirements of NSF/ANSI 61.

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Lead free

Continued from page 22

"You can't mix your scrap streams if you're machining lead free brass and regular, leaded brass," Smith explained. "You have to set up separate machining and casting centers to keep those materials separate. If you send back chips that are mixed with both alternate materials and lead, the value of it decreases dramatically. So, from a standpoint of financial viability, it is often necessary to invest in separate lines for different materials."

With the manufacturers working diligently to rework their product lines, the rest of the industry stepped up its efforts to educate and inform those who will be on the front lines when the law goes into effect.

"We had been discussing trends, education and training needs at board meetings and the lead-free issue came up in spring of 2012," recalled Cindy Sheridan, COO of the Plumbing-Heating-Cooling Contractors (PHCC) Educational Foundation. "Manufacturers were ready for the legislation, but not the rest of the industry. We saw an opportunity for the foundation to take a leadership role in doing some industry-wide lead free training."

This conversation paved the way to an unprecedented collaboration of industry groups, including American Society of Plumbing Engineers (ASPE), PMI, the International Association of Plumbing and Mechanical Officials (IAPMO), the International Code Council (ICC), the American Supply Association (ASA) and many others to form the Get the Lead Out Consortium. This group dedicated itself to getting the word out about the Reduction of Lead law and making sure everyone was on board and prepared.

"The Consortium focuses strictly on communication outreach, education and training," Sheridan said. "Information and understanding are critical to compliance."

"Based on core of the ASPE mission, which is dedicated to creating a positive impact on global health and safety of plumbing systems, it was automatic for us to join the Consortium's efforts and get engaged right away," said Jim Kendzel, Executive Director of ASPE. "We have engaged our chapters and members on the local level to bring in approved trainers to give the Consortium's Get the Lead Out presentation. We are reaching our members at the grassroots level so they are fully aware of the legislation, its potential impact and what it means to them."

"Our mission is to educate the installers, contractors, suppliers and people who are going to have to deal with this to the best of our ability," Higgens said. "PMI members are prepared and ready to hit the ground in 2014, but I think broadly the bill has been somewhat hidden. The Consortium's presentation contains everything we know and we encourage people to sign up for one of the Get the Lead Out seminars."

(Continued on page 26)

Q&A with EPA

We reached out to the U.S. Environmental Protection Agency about the Reduction of Lead in Drinking Water Act and the agency provided some thoughts on where things are going.

As the EPA sees it, what are some of the dangers of exposure to lead?

Lead is a toxic metal that was used for many years in products found in and around homes. Even at low levels, lead may cause a range of health effects including behavioral problems and learning disabilities. Children six years old and under are most at risk because this is when the brain is developing. Infants and children exposed to lead could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults exposed to lead over many years could develop kidney problems or high blood pressure. This health effects language is not intended to catalog all possible health effects for lead. Rather, it is intended to inform consumers of the most significant and probable health effects associated with lead.

The Act redefines lead free regarding pipes, pipe fittings, plumbing fittings and fixtures to mean 1.) not containing more than 0.2 percent lead in solder and flux; 2.) not more than a weighted average of 0.25 percent lead in wetted surfaces of pipes, pipe and plumbing fittings and fixtures. Will this be the set standard for lead-free going forward?

In accordance with the Safe Drinking Water Act, EPA set a maximum contaminant level goal of zero for lead in drinking water. EPA set this non-enforceable level based on the best available science that shows there is no safe level of exposure to lead. We have observed significant advancement in the availability of lead-free alloys for plumbing materials driven in part by state and federal legislation.

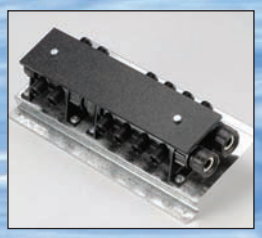
The Act impacts any new product sold after the start date of January 4, 2014. Are you aware of any exceptions for projects that are underway at the time of the changeover? Will projects already underway be grandfathered in at the old standard?

EPA cannot make exceptions or change the effective date for the changes to the lead-free statute in the Safe Drinking Water Act. The Reduction of Lead in Drinking Water Act was enacted on January 4, 2011, but it included a provision that the changes would apply beginning on the day that is 36 months after the date of the enactment of this act (January 4, 2014).

Will retrofit/remodel/replace projects be impacted by the Act? At what point do components need to be upgraded to be in line with the new law?

The purpose of this portion of the Safe Drinking Water Act is to eliminate the future use of lead in water supply distribution systems. There is no indication in the legislative history that Congress intended for the revised definition of lead-free to be retroactive and require extensive replacement of existing infrastructure.





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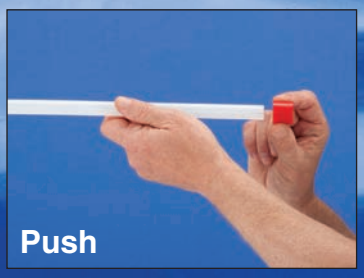
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Lead free

Continued from page 24

The Consortium, as well as various participants in industry as a whole have done an incredible job of getting the word out to the parties affected by this law. Along with the work by industry groups, individual manufacturers have taken hold of the issue with an aggressive campaign of education and awareness. Many have their own seminars and even websites devoted to compliance to the new lead law (see Lead Free Resources sidebar).

Interpreting the law

So, with manufacturers on board and an education program in progress, everything is crystal clear, right? Well, perhaps not just yet. The devil is in the details. While the federal Reduction of Lead in Drinking Water Act itself in many ways mirrors the California bill that started it all, it differs in one important respect; it does not spell out a clear enforcement and compliance framework.

It is up to the U.S. Environmental Protection Agency (EPA) to determine the particulars of how the federal law will be put into practice. Will products require third party verification? If so, from whom? Will California be used as a blueprint for the rest of the nation, or will EPA put a different enforcement methodology in place? With only a few months to go, at press time, these questions remain unanswered.

"The biggest frustration we face is our inability to answer a lot of these questions," Kendzel said. "We are waiting to get guidance from the EPA in interpreting the rule, so there is a lot of gray area."

When the law was passed in 2011, the expectation was that the EPA, who would oversee its enforcement, would soon define its parameters and interpretation. That definition could simply follow California's example by requiring third-party certification of products from an ANSI-accredited body, or take a whole new approach. The general understanding had been that this would all be spelled out by late 2012 or early 2013, but this hasn't proven to be the case. In August 2012, the EPA stated that it wanted to make enforcement of the new lead law part of its larger Lead and Copper rule, but the formal rulemaking process for that would take several years and would not be ready in time for the 2014 enforcement date.

To bridge the gap, the EPA was expected to develop an interim guideline to spell out the details. Many believed that would be released in early 2012 to give the industry sufficient time to prepare.

"Back in January, EPA told us they were continuing to work on interim guidance, which they hoped issue by the summer of 2013," recalled Stephanie Salmon, Vice President of Artemis Strategies, a government affairs and strategic communications firm that has aided PMI's efforts on Capitol Hill. "In March, EPA officials publically reported that the interim guidance wouldn't be issued until the end of 2013. We obviously had serious concerns about the agency waiting just weeks before the effective date before providing any type of guidance to the regulated community."

As we go to press, we have just learned that the EPA will announce that no interim guidance will be released after all. In its place, EPA will release a series of frequently asked questions (FAQs) intended to clarify the particulars of the lead law's rollout. While this may help shed some light on what the eventual enforcement framework will be, as ASPE's Jim Kendzel put it, "Frequently asked questions don't necessarily equate to frequently answered questions."

"One of the unfortunate things about the law is that we tried to get more detailed information in it. The law is extremely vague," Mercer said. "It was done intentionally because lawmakers don't want to get into the micro details of things, but it can have the effect of creating a burden in the marketplace."

We reached out to the EPA and they informed us that the FAQs are slated to be released in late May. It will be interesting to see what EPA publishes since there are indeed many questions the industry is asking. For example, to what extent will this rule apply to replacement parts? How will engineers, contractors and consumers know a product is compliant? Will there be a mark or certification? We spoke to EPA and received feedback on some of these questions (see EPA Q&A sidebar), but there is still a lot of room for interpretation.

One pending question is about the scope of the law. The assumption is that, like the state laws, it will cover only fixtures designed to deliver drinking water and will exclude fixtures such as sensor-operated faucets found in commercial restrooms. While this is the case with the federal law, also, it is possible the EPA will include such products in the enforcement range.

Perhaps the biggest question, however, is about how to show compliance. In California, after the original law was

Lead free resources

For more information on the Reduction of Lead in Drinking Water Act and how the plumbing industry is preparing, visit these online resources:

- **Get the Lead Out Consortium**
www.gettheleadoutplumbing.com
- **SafePlumbing (PMI)**
www.safeplumbing.org
- **We Are Lead Free (Watts)**
www.weareleadfree.net
- **EPA's Lead in Drinking Water**
water.epa.gov/drink/info/lead/index.cfm
- **IAPMO**
www.iapmo.org
- **ICC**
www.iccsafe.org
- **NSF International**
www.nsf.org

passed, additional legislation called for third party certification.

"The industry and PMI advocated for the development of legislation to require third-party certifications," Mercer said. "We wanted a level playing field. We had experienced trouble with the original Safe Water Drinking Act with products coming in from foreign manufacturers that were not compliant."

In California, ANSI-accredited 3rd party certifiers confirm that all products meet the lead requirements. This makes it easy for professionals and consumers alike to know which product meets the standard.

"I think we're all hopeful that the federal regulations will mirror California because I think the state did a good job in making it an understandable, common sense approach," Smith said.

"What industry is most concerned with is that EPA is going to come up with some new kind of marking program or additional regulatory framework above what we're already doing," Mercer said. "EPA has talked about wanting to do that and we've asked them why they would want to. It would put a huge burden on the industry and wouldn't make a bit of difference unless EPA puts millions of dollars into educating the end user and consumer. We would argue that there already are a lot of third party certification marks out there that represent compliance and we've been using them since 2009 or 2010. They already have systems in place to do certification programs for 0.25 percent lead."

Even in the midst of uncertainty, the industry is going full steam ahead in its preparations. Most hope and work under the assumption that California is the blueprint. For those who haven't yet made plans for the change, now is the time to jump in.

"For people hearing about this for the first time, do something as soon as possible," Smith asserted. "Inaction is the worst choice at this point. For people who have questions or are hearing about this for the first time, call your manufacturer and ask questions. The majority of them have been through all of this because of California and have plenty of information to help you understand what it's all about."

"I don't know what else we could be doing as a community to prepare ourselves for this," Kendzel said. "That's a good thing. I can't think of one stakeholder community that isn't involved in this and isn't working to get ready. It's a great story for the plumbing community and industry." ●

GETTING THE LEAD OUT

By Donna Estrada

Easier said than done

In September 2006, California passed lead free plumbing legislation, AB1953, which was later incorporated into the California State Health and Safety Code under section 116875. California's Health and Safety Code stipulated that as of January 1, 2010, "any pipe or plumbing fitting, or fixture intended to convey or dispense water for human consumption" introduced into commerce within California would be limited to a "weighted average lead content of the wetted surface … of not more than 0.25 percent. Solder or flux was limited to 0.2 percent.

California added legislation in 2008, directing the Department of Toxic Substances Control (DTSC) to enforce the law and requiring manufacturers to have their products certified by an independent ANSI-accredited third party. Other states such as Vermont, Maryland and Louisiana soon followed with similar laws. Lead in plumbing products was becoming a national issue.

The federal government took notice, and a bill was introduced into the U.S. House of Representatives and Senate about reducing the amount of lead in plumbing products, solder and flux. The bill soon passed and was signed into law. Beginning January 4, 2014, federal Public Law 111-380, the Reduction of Lead in Drinking Water Act, amends the Safe Drinking Water Act to include a formula for measuring the weighted average lead content of a pipe, pipe fitting, plumbing fitting or fixture. In addition to the 0.25 percent lead limit on wetted surface areas of fixtures, the law sets the benchmark for solder and flux at 0.2 percent.

The EPA has indicated that it will enforce the new requirements, and is preparing guidelines for testing, certification and enforcement. The federal law contains no guidelines or methods for testing and certification. Many manufacturers have already started using lead free alloys in their products to meet the deadline.

Uncertainty in certification

"There have been a lot [of] questions over the past few years about Public Law 111-380," said Jin Luo, senior director of IAPMO R&T. "The EPA, working in conjunction with manufacturers, certification bodies and other interested parties, is trying to develop a set of guidelines and procedures to make sure that consumers are protected and manufacturers are clear on their duties and obligations in meeting the law. Public Law 111-380 is very specific on the calculation to determine compliance. The information goes into a table, is summed, and produces a number that's the weighted average of lead in the components of a product. The test method has not been finalized for the federal lead law. California had a similar issue when AB 1953 was enacted, and consequently developed a testing protocol several months after the law went into effect."

The EPA is investigating the use of NSF 372 as a testing protocol, but has not yet finalized its decision. In response to a question about whether certifying products to NSF 372, and not Public Law 111-380, could create problems for manufacturers, Luo pointed out, "NSF 372 has not been formally adopted by the EPA."

Manufacturers also referred to the California DTSC testing protocol and to NSF 372 in response to the question of whether products that were coated or acid washed to remove lead could qualify for certification. According to Jeremy Brown, codes and regulatory manager at NSF International, "Essentially, a coating doesn't count because

(Continued on page 30)

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Continued from page 28

you can't rely on its longevity. As far as de-leading technologies or washes, the actual analysis should be performed on the product prior to the use of those removing technologies. Both the DTSC testing protocol and NSF 372 require the coating be removed and the base alloy tested."

Ultimately, the EPA has the power to interpret these laws and should be consulted for guidelines as to whether or not a product falls within the scope of the law. As for the argument that "human consumption" had to be a product's primary function, the law doesn't address what primary is, and in the absence of that, "human consumption" is going to be defined very broadly.

Regardless, cautious manufacturers needed to ask themselves, "How do I minimize my exposure to lawsuits?" And with no best practices yet on how to do that, in many instances, the answer to that question was they would need to consult an attorney.

Time is the bottom line

Ratcheting up the pressure on manufacturers and distributors eager to get products to market, many customers – especially municipalities – were requesting lead free products, and had been for some time.

Michael Tharpe, chief inspector of the Los Angeles Plumbing, Mechanical and Fire Sprinkler Division, said the federal Reduction of Lead in Drinking Water Act is similar to California AB1953 by "placing the burden on the manufacturers for verification of compliance with the new law." One way of achieving this is through third-party certification by an ANSI-accredited certification body.

Jurisdictions are going to be looking at third-party certification, as they don't want to be responsible for verification. When the certification body completes its review of the testing and evaluation, the body lists a certificate on its website showing compliance to the federal lead law, and the manufacturer receives the acknowledgement that the product is certified. This is what many jurisdictions will require to show compliance to the federal statute.

As to the amount of time required for certification, certification bodies depend on a number of factors in the speed to market. "If the product being tested is a faucet that has absolutely no certification, it may take longer to test than, say, a simple product like a flexible connector," Luo said. "A fitting made of homogenous material can be done in a matter of a few weeks. It all depends on the product and the difficulty of obtaining formulation information."

Despite the things learned when California, Vermont, Maryland and Louisiana enacted similar legislation, there will be questions and further clarification after the 2014 federal deadline. Historically, there have been "transitional periods," during which legislation or other means would be required for clarification. Until then, strict compliance with the law is advised for all manufacturers. ●

Donna Estrada is the Director of Client Services and Administration for the IAPMO R&T Laboratory.

How will the low lead law impact plumbing fixtures inventory?

Hardware stores, big-box retailers and plumbing supply companies all over the U.S. will soon be affected by how people take a drink of water. Over the past few years, certain states have been requiring retailers to switch inventory to no lead products. But, on January 4, 2014, there will be a need for a drastic change in the inventory carried by distributors in all states with the Reduction of Lead in Drinking Water Act (also known as Public Law 111-380 or Senate Bill 3874).

Distributorships within California, or other early lead-free adopting states, planned early and still felt the pinch of unmovable inventory when the local jurisdictions made the transition to lead free product requirements. Many manufacturers took higher lead product back and replaced it with the new lead-free line of products, knowing that they could safely sell them in states that did not have the lead free requirements.

When the federal law takes effect, there will be no neighboring states where old inventory may be shipped and sold. The U.S. Environmental Protection Agency has indicated that it will rigorously enforce this new law to prevent product dumping to unsuspecting consumers.

"We have seen it all over the news and web, the past several years, that more and more areas of the country were adopting lead free legislation before the federal legislation of January 2011," said Jin Luo of IAPMO R&T. "The new federal law closely mirrors the requirements of California and other lead free states so existing inventory of leaded products will need to be depleted prior to the January 4, 2014, deadline."

Although the EPA has not yet finalized its guidelines for testing and enforcing the new "lead free" law, manufacturers are seeking certification with IAPMO R&T Inc. in order to provide documentation to customers that their products meet the requirements of this new law. IAPMO R&T has been involved in providing low lead product certifications since the beginning of the California Health & Safety Code 116875. IAPMO R&T was one of the first certification bodies to list low lead products for the individual states. All of these firsts demonstrate IAPMO R&T's commitment to the program and to the manufacturers developing products that meet these new requirements. ●

Lead Free
from a Manufacturer's Perspective

Questions still abound surrounding the particulars of the Reduction of Lead in Drinking Water Act. Engineers wonder how it will affect the products they specify, wholesalers wonder how it will impact their stock, and contractors wonder how it will change the way they select and install product. But manufacturers face perhaps the toughest question: how will they make these new low lead products?

To address some of these questions, we spoke to Dr. Greg Morwood, a professional engineer with a doctorate in materials science and manufacturing technology. Morwood has been involved in the transition to lead free materials through his involvement in the plumbing fittings industry. He has 18 years of experience in the manufacturing industry and has been involved in the water industry for nine of those years. The challenge of developing production processes for lead free materials opened his eyes to the never-ending technological work required for something as seemingly mundane as a plumbing fitting.

Why has lead been used in plumbing products in the first place?

GM: The primary materials used in the plumbing industry are copper-based alloys, polymers and stainless steel. They all have pros and cons, but brass and bronze copper-based alloys offer exceptional properties for products in contact with water. These properties specifically include long life, good strength and easy manufacture.

They are also largely nontoxic, with the exception of the small amounts of lead, which is used primarily to enable the manufacture of components. The main advantage to lead bearing alloys is the ease of machining. Whether turning or milling, the lead particulates in the metal structure would create a natural weakness for the spiral of metal that comes off during machining. Without the lead, that spiral just gets bigger and bigger, jamming up the machine and causing frequent stops for cleaning.

The lead also acts as a lubricant during the machining process. When you take it out, the tip of the tool suddenly gets very hot, which dramatically reduces the life of the tool or decreases the quality of the finish you can get on the product.

Is removing lead the right thing to do?

GM: Yes and no. Around the world there has been a steady move away from the use of lead in any product – paint, automotive components and plumbing – and there is no acceptable safe level of lead in humans (see www.who.int/ipcs/assessment/public_health/lead/en). So, the removal of exposure is necessary. However, countries around the world are taking different approaches to controlling the issue. Most are putting tighter and tighter limits on the amount of lead that comes out of the product during its life, i.e. reducing the amount of lead that gets into the water you might drink. This is done by testing the product out of the factory for lead leaching in an accelerated test. In those cases, there are still questions about the test itself. It may pass the test, but what happens after five years in your home? There are also questions about the process. Perhaps these samples pass the test, but what about the actual product?

However, under the current U.S. law, it is still possible to have lead in plumbing products and tests have shown that those products leach lead at a rate that is unacceptable under the tests used in other countries. Ultimately, there is a need to strive for the complete removal of lead, but this needs to include both limits on the use of lead and tests for the leaching of lead.

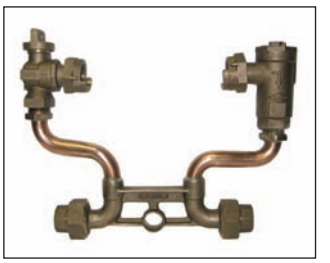
From the manufacturing point of view, while removing the lead makes everyone safer because no one has to handle the lead in the first place, it does make the process much harder. Machines have to run harder, using more energy to make the same product. It is also possible that

(Continued on page 32)

Press fittings

Viega is ready for lead-free legislation and we have science on our side. We are the only manufacturer to develop our own registered lead-free silicon-bronze alloy specifically for press fittings. Providing a more reliable press connection than many lead-free brass alloys, Viega Zero Lead bronze is a superior choice for lead-free press connections. **Viega.**

www.viega.com



Meter setters

A.Y. McDonald offers a wide array of copper meter setter and meter resetter configurations that meet nearly any application. To order meter setters with No-Lead brass, refer to the copper meter section of the website or catalog. Once you have selected a model to meets your needs, simply place a "7" in front of that model number. This "7" will indicate that the meter setter will require No-Lead brass components. **A.Y. McDonald**.

www.aymcdonald.com

Manufacturers

Continued from page 31

the imposition now in place on brass and bronze will drive the use of less acceptable materials, or materials with consequences that are also negative.

How will product be changed for compliance?

GM: This is where the law, inevitably, gets complex. As I mentioned, you can still have lead in plumbing products, just less of it – 0.25 percent to be precise, except in the cases where you are allowed to have more. Two examples I can think of are products that are not considered part of the drinking water system (such as your hot water system or products exclusively for hot water) and products that use a combination of materials. This is too complex to explain without pictures, but the law is written to allow manufacturers to replace copper-lead alloys in some components with other non-leaded materials, such as plastic, and hence use a higher lead content in the remaining components.

In many products, the alloy is being changed or was changed when the law came into California. This came with a cost implication, since the best solution on the market at that time was a higher copper content alloy. And if you watch the commodity markets, you know the price of copper.

As you can imagine, no one wants prices to rise, so this left manufacturers in a difficult position, and you will yourself have seen the effects of this. In order to recoup some of the margin that manufacturers lost in those early days, there is renewed rush of scientific work going on around the world to develop alloys, which meet the requirements but have cost more like the old materials. This is an interesting challenge for manufacturers who have significant volume of product made for an international market, hence need to run production in two materials, further reducing their production efficiency. So some of this research is to find a "global material" that will suit the lead free requirements, but also meet the lead-leaching requirements of other countries and have an acceptable cost structure.

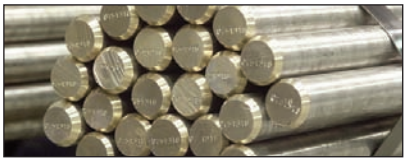
Other products will change in other ways – either moving to polymers or stainless steel components in order to increase the allowable lead content in the copper-based components. Another, possibly cynical, approach is to combine products, such as connectors to do the same thing. This doesn't reduce the end users exposure to lead, but it is a legitimate option under the wording of the law.

How do we know the product we are getting is lead free?

GM: The short answer is that we don't. There was nothing put into the legislation that required any form of product identification for the end user. So unless you know on what date the product was purchased, you can't be sure your products are lead free. In practice, though, most manufacturers needed to identify the different stock as it moved through the factory, from foundry to bar, machine shop to assembly, packaging to warehouse to store shelf. Identification is also required by wholesalers, whose warehouses may have supplied states with and without the new legislation.

Typical identification would be through parts numbers, through packaging materials and through text or logos on the product itself. As there was no standardized requirement, the contractor may be left to his or her devices to determine whether the product the have in the back of the truck is or isn't lead free. If you know the brand, the local representative or website will most likely assist.

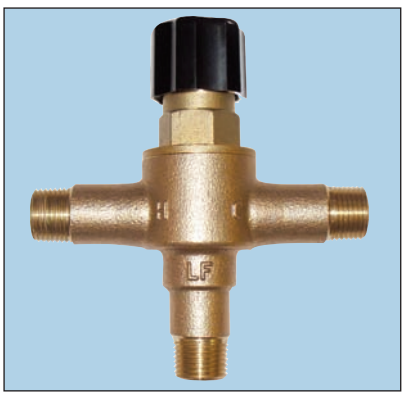
The good news is that any product purchased after January 1, 2014 will be lead free, and if you want to get ahead of the game, talk to your supplier and see if they can start supplying you with lead free product now. It will help them with the changeover, and you might find it costs you no more as they are already stocking it. ●



Alloys and materials

GreenAlloys™ is the next generation of environmentally-friendly alloys and materials. The lead content of GreenAlloys™ is extremely low, often as low as 0.05 percent. Alloys offer lubricity, tightness, wear, strength, hardness and machinability. **Concast.**

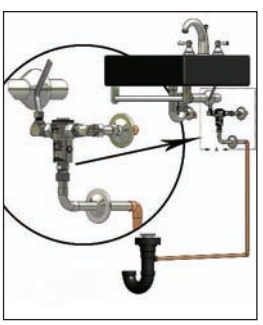
www.greenalloys.com



Mixing valves

The ECO-MIX™ 170-LF and 270-LF point-of-use mixing valves offer one of the lowest minimum flow of any ASSE 1070 device at 0.25 GPM. Both units are also third-party approved as lead free. **Leonard Valve.**

www.leonardvalve.com



Primer valve

The lav trap primer valve comes complete with 5/8 inch comp. angle stop, 3/8 inch comp. lav supply, 5/8 inch comp. discharge fitting, ½ inch ID make up line and wall mount escutcheon. The entire assembly is chrome plated for an attractive, under lav installation. **Precision Plumbing**.

www.precisionplumbers.com

Valve offerings

The Eco-Valve product line will include PEX ball valves and balancing valves. The PEX ball valves are ½ to 1 inch 5009AB (F1807) and 5015AB (F1960) with NSF61-G, NSF-372 and AB1953 certification. Offered in lead free DZR corrosion resistant brass. The balancing valves are for HVAC and delivered water markets. Hydronic controls offer broad base solutions to system balancing applications. Product range includes: ½ to 1 inch circuit setters that are standard in lead free corrosion resistant brass; ½ to 2 inches static balancing valves in corrosion resistant brass and lead free option; 2 to 12 inches flange balancing valves that offer solutions to commercial applications; ½ to 2 inches dynamic (automatic) balancing valves that provide solutions to demanding applications; and ½ to 2 inches coil kits offering strainer kit and automatic balancing kit. **Red-White Valve Corp**.

www.redwhitevalvecorp.com

LOW-LEAD

IAPMO R&T ™

Certified offerings

IAPMO R&T was among the first bodies to certify products to California's low-lead law and now offers comprehensive service that covers the new federal low lead law taking effect January 1, 2014. **IAPMO R&T**.

www.iapmort.org

Commercial/residential valve

The lead free K-Press is designed for the water service industry. The two-piece, full port valve provides a fast and safe installation for commercial/residential applications. Valve is UL certified to NSF 61 Annex G and available in sizes ½ to 2 inches. **Kitz**.

www.kitzus-kca.com

Thermostatic faucets

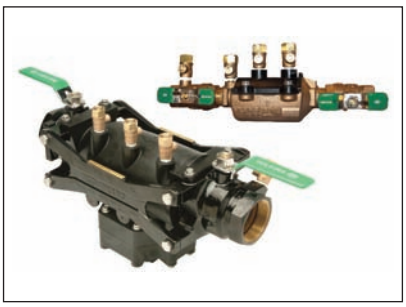
The TempTAP™ 105/115 Series Thermostatic faucets are available in lead free models. State-of-the-art technology ensures compatibility with plumbing codes and standards nationwide, including ASSE 1070 for protection of users from scalding. Advanced thermal actuator, which is built right into the faucet itself, provides the latest in temperature and volume control. Available with low flow 1.5 gpm WaterSense® approved aerator option to help reduce water usage. Precision tempering capabilities allow boilers to operate at higher temperatures and maintain peak efficiency, eliminating wasted energy from fluctuating temperatures. **Power Controls**.

www.PowersControls.com

MORE LEAD FREE PRODUCTS ON PAGE 34

LEAD FREE PRODUCTS

Continued from page 33



Backflow preventers

The Lead Free 375XL Reduced Pressure Principle Backflow Preventers protect against backpressure and backsiphonage of contaminated water into potable water supply. Innovative design utilizes a removable check valve housing made from corrosion-resistant composite materials for fast, simple, and cost effective repair/maintenance. The 375XLB features a black fusion-epoxy coating baked directly onto the backflow preventer. Plastic camouflaging helps protect against bronze thieves searching for quick scrap value. Optional Blow-Out/Flush Fitting allows easier system flushing prior to start-up, eliminating debris from clogging checks. **Zurn Industries**.

www.zurn.com

Stainless steel offerings

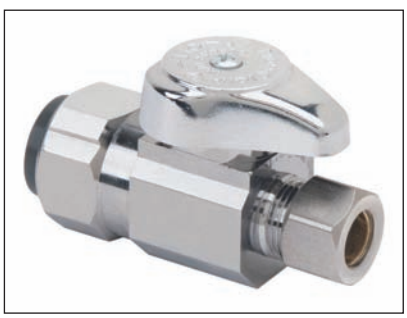
Stainless steel valves and fittings are a viable alternative to the new lead-free copper alloys due to the high cost of the bismuth used to replace the lead. Full line includes stainless steel threaded valves, fittings, nipples and pipe as direct alternatives for lead free brass. **Smith-Cooper**.

www.smithcooper.com

Push-to-Connect

Legend has introduced the Insta-Loc II™ No Lead and DZR Push-to-Connect Valves and Fittings. These can be installed onto copper, PEX or CPVC. An installed insert stiffener is included for PEX installations that can be easily removed when installed on either copper or CPVC. After installation, the fittings and valves are removable. A disconnect tool for each size is offered. Available configurations in ½, ¾ and 1 inch sizes. The Insta-Loc II™ fittings and valves are constructed from no lead and dezincification resistant forging brass; and are ideal for potable water and hydronic heating systems. **Legend**.

www.legendvalve.com



No lead compliant water stops

BrassCraft Manufacturing offers your compliant solution for the new 2014 no lead legislation with a full range of no lead compliant water stops. The G2™ Series push connect water stop is a compact machined one-piece body configuration which provides a sleek design for tighter installation areas. The convenient push connect x push connect water stop features push connect technology on the outlet side as well. **BrassCraft**.

www.brasscraft.com

PEX fittings

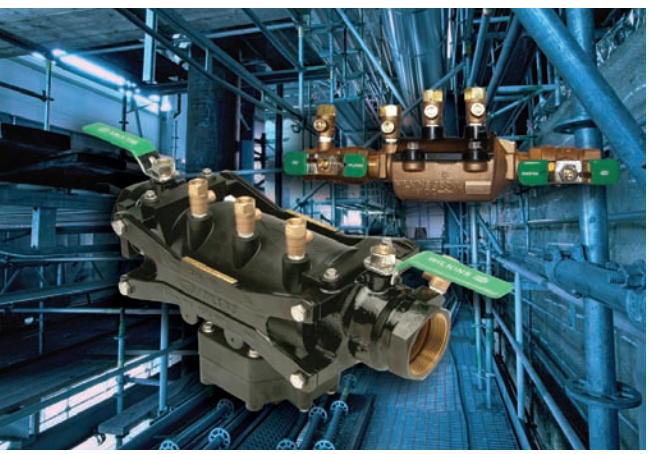
Flair-It Ecopoly offers a full line of common and unique polysulfone (PSU) insert PEX fittings and valves, heat and cold resistant. EcoPoly PEX fittings meet NSF 61, ASTM F 877 and CSA 137.5 specifications and are ideal for professional installation or do it yourself plumbing. EcoPoly insert PEX fittings are compatible with copper PEX crimp rings, stainless steel PEX clamps and stainless caps and any brand or type of SDR-9 PEX tubing. **Flair-It**.

www.flairit.com

Soldering flux

The Nokorode® Aqua Flux™ is a creamy, paste soldering flux formulated to meet the ASTM B-813 specification, recognized by the Copper Development Association (CDA) and national building codes. Aqua Flux™ is certified to NSF/ANSI 61 Annex G in compliance with AB1953 requirements, referred to as the low lead law, making it suitable for use with the silicon family of metal alloy products. **RectorSeal**.

www.rectorseal.com



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