

# Safe Drinking Water Act: 2014 Requirements for Lead in Plumbing Products

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# Disclaimer

*This presentation is for information purposes only and is not intended to be legal advice. Should any party need legal advice regarding the information contained herein, they should contact their own counsel who specializes in this area of law.*

# Description

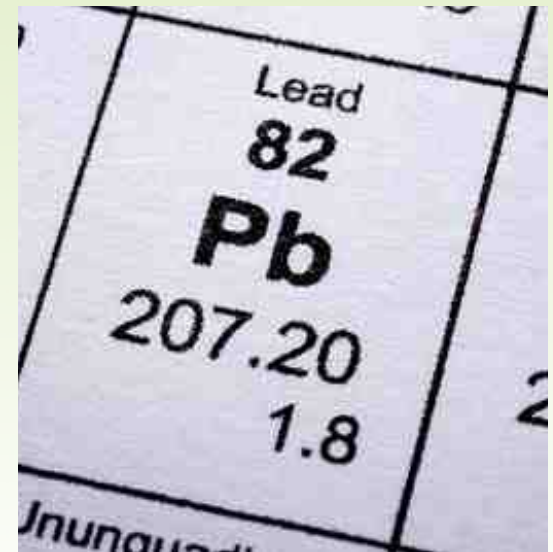
- Overview of the critical concepts of the "Reduction of Lead in Drinking Water Act"
  - Focuses on the role of the code official implementing the law.
  - **Note: References to FAQ in the document are to the [Summary Of The Reduction Of Lead In Drinking Water Act And Frequently Asked Questions, U.S. EPA, October, 2013](#) which was recently released in October, 2013.**
- Brought to you by the [ICC PMG Membership Council](#) and [ICC Evaluation Service](#)



# Why Lead in Plumbing?

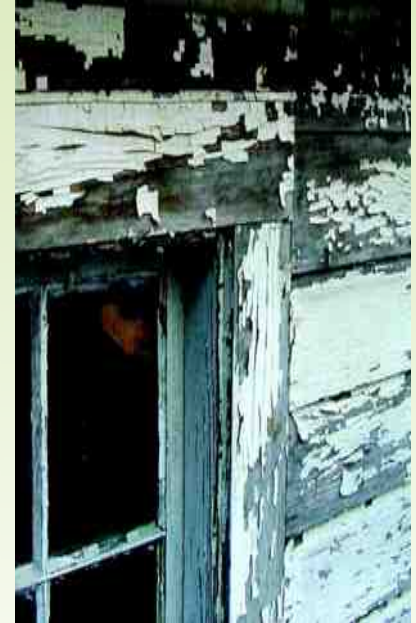
Lead has a long association with plumbing.

- Term *plumbing* is based on the Latin word “*plumbum*”
  - Wide use for plumbing pipes and fittings and solder even into modern times.
- More recently it is used as an alloying element in cast bronze and brass
  - Improves machinability
  - Reduces porosity
  - Resistant to corrosion

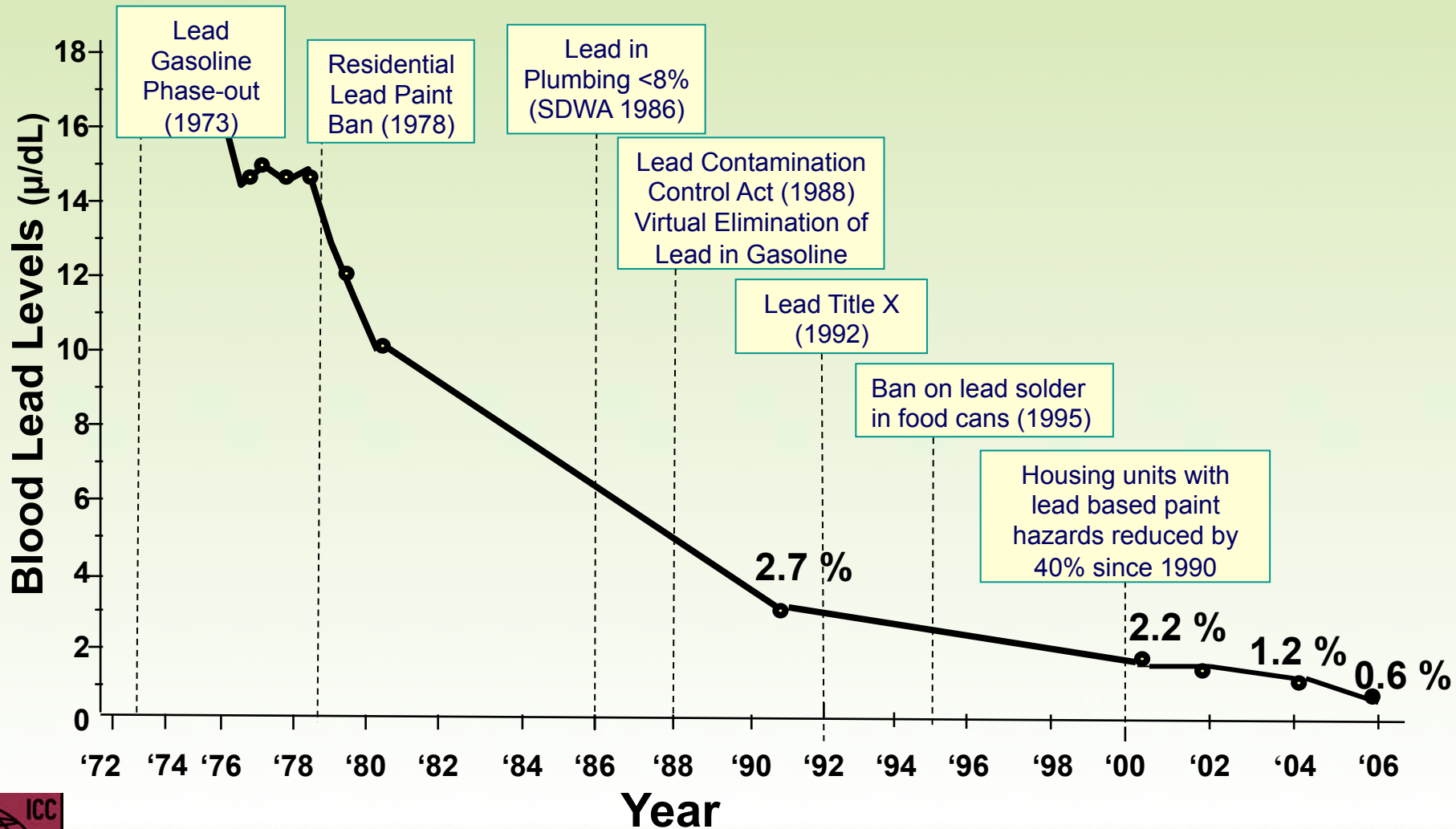


# Health Effects of Lead

- Lead causes a range of issues in adults and children – many are lifelong
  - Neurotoxin that affects central nervous and reproductive systems
  - Especially harmful to children and pregnant women
  - Builds up - accumulates in bone and fat tissue
  - Lowers IQ, create behavioral issues, slow growth
  - “No safe blood level of lead has been identified.”<sup>1</sup>
- Sources: food, water, contaminated soil, dust, paint, ceramics



# Lead Poisoning Prevention Policy and Children's Average Blood Lead Levels



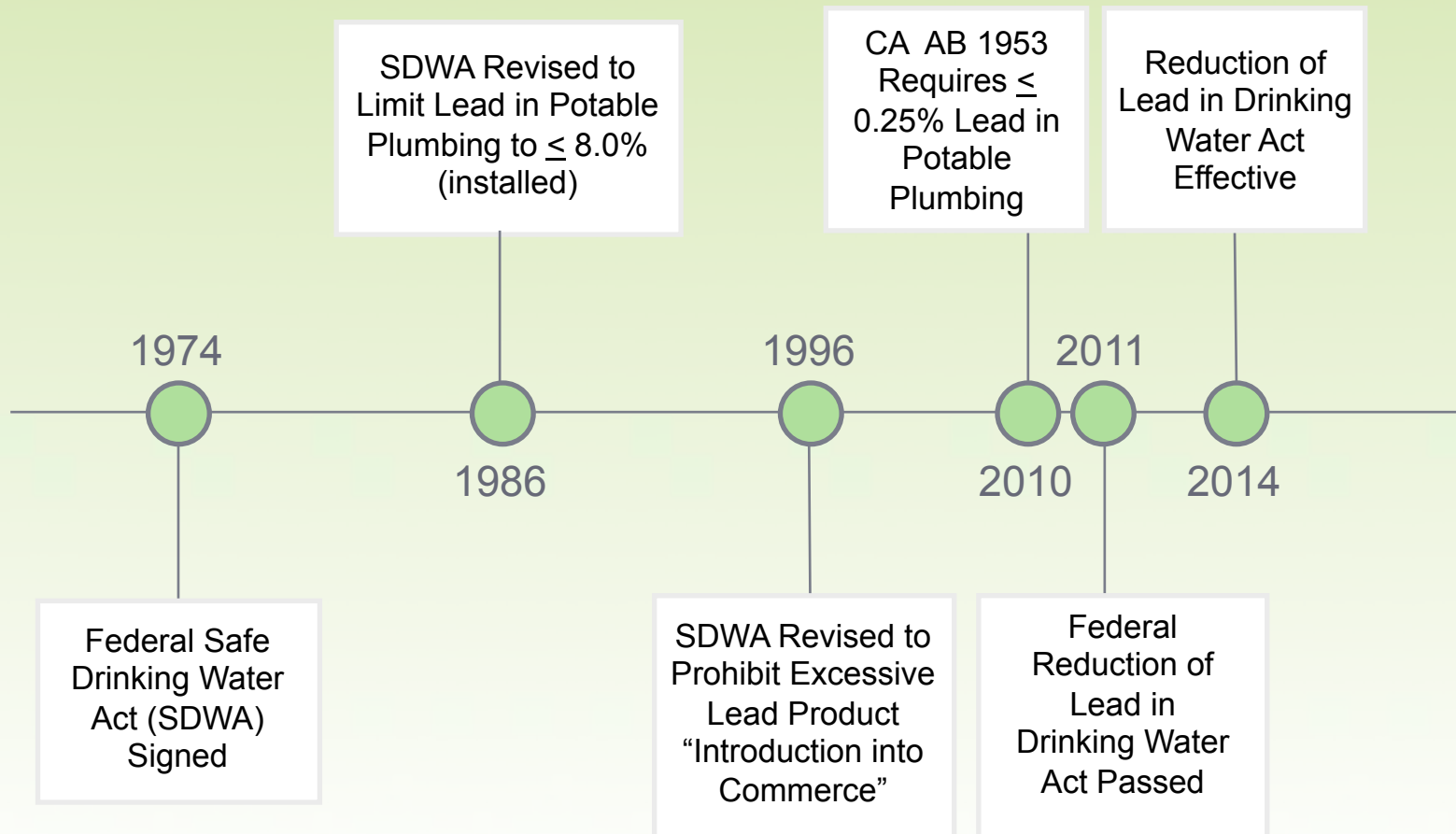
# Why Change?

- EPA: Drinking water remains a significant source of lead exposure: 10-20% of ingested lead
- CDC: No safe blood level of lead.
- NSF: Lead leaching is not directly proportional to the level of lead in the product.\*
- Lower lead alternative materials.
- Better lead detection methods.





# Lead Regulations in Plumbing Products





# Current Safe Drinking Water Act

*No person may use any pipe, any pipe or plumbing fitting or fixture, any solder, or any flux, after June 19, 1986, in the installation or repair of—*

*(i) any public water system; or*

*(ii) any plumbing in a residential or nonresidential facility providing water for human consumption, that is not LEAD FREE (within the meaning of subsection (d) of this section). [42 USC § 300g-6]*

Drinking. Teeth  
Brushing,  
Food Prep,  
Maintain Oral  
Hygiene  
(FAQ #7)

$\leq 0.2$  % for  
Solders and  
Flux

$\leq 8.0$ % for  
Pipes, Pipe  
Fittings

# Reduction of Lead in Drinking Water Act

- [Reduction of Lead in Drinking Water Act](#)
  - Signed January 4, 2011
  - Effective January 4, 2014
- Amends the Safe Drinking Water Act
  - The amended definition of “lead free” is provided
    - 0.20% max lead for solder and flux
    - 0.25% max lead for products by weighted average
    - Multiple component products are calculated to address total wetted exposure based upon wetted surface area of each component and that component’s lead content by percentage

# New Calculation Method

## Weighted Average Lead Content

$$WLC = \sum_{c=1}^n \left( LC_c \times \left[ \frac{WSA_c}{WSA_t} \right] \right)$$

where;

WLC	=	weighted average lead content of product
$LC_c$	=	maximum lead content of the $c^{th}$ component
$WSA_c$	=	wetted surface area of the $c^{th}$ component
$WSA_t$	=	total wetted surface area of all components
$n$	=	number of wetted components in product

- Applies only to wetted surface area
- Averages lead content at the surface of each wetted part

# 2012 International Plumbing Code

- *605.2 Lead content of water supply pipe and fittings. Pipe and pipe fittings, including valves and faucets, utilized in the water supply system shall have a maximum of 8-percent lead content.*
- NSF 61-2008 compliance required for
  - Faucets & fixture fittings (424.1)
  - Water service pipe (605.3)
  - Distribution pipe (605.4)
  - Fittings (605.5)
  - Ball, gate, globe valves (605.7)
  - DWTU tubing (611.3)
  - Fountains and coolers (410.1)



# 2015 International Plumbing Code

- Previous section on 8% lead remains. [\(FAQ #11\)](#)  
*“605.2 Lead content of water supply pipe and fittings. Pipe and pipe fittings, including valves and faucets, utilized in the water supply system shall have a maximum of 8-percent lead content.”*
- New proposal approved to add the following provision [\(FAQ #19,21\)](#):  
*“605.2.1 Lead content of drinking water pipe and fittings. Pipe, pipe fittings, joints, valves, faucets, and fixture fittings utilized to supply water for drinking or cooking purposes shall comply with NSF 372 and shall have a weighted average lead content of 0.25 percent lead or less.”*
- NSF 61 requirements remain. [\(FAQ#18\)](#)

# What Products Are Covered?

Includes: “...any pipe or plumbing fitting or fixture... in a residential or non-residential facility providing water for human consumption.”

Excludes: “other uses where the water is not anticipated to be used for human consumption.”

Specifically Excluded	Not Specifically Addressed
Toilets, Bidets, Urinals and Associated Flush and Fill Valves	Water Heaters, Hot Water Fixtures and Fittings
Tub fillers, Shower Valves	Replacement Parts
Service Saddles	Showerheads
Main Dist. Gate Valves >2” Diameter	Hose Bibbs

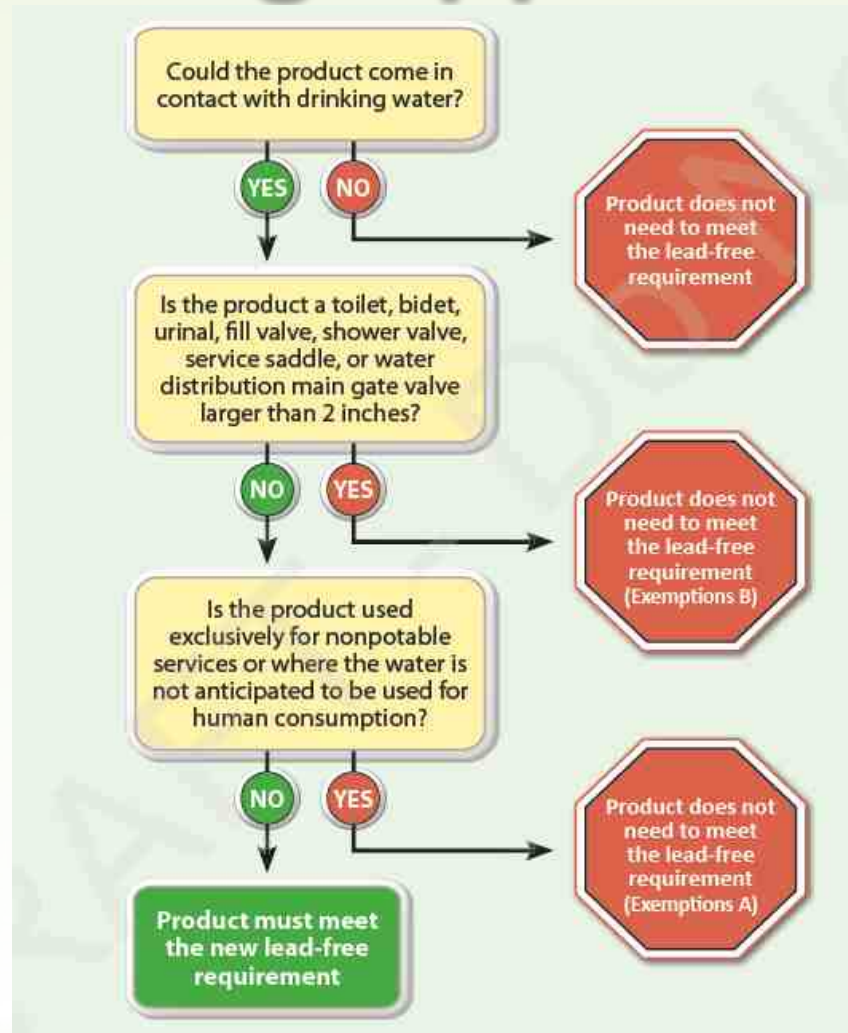
FAQ #6

FAQ #23-30

FAQ #9



# Determining Applicability

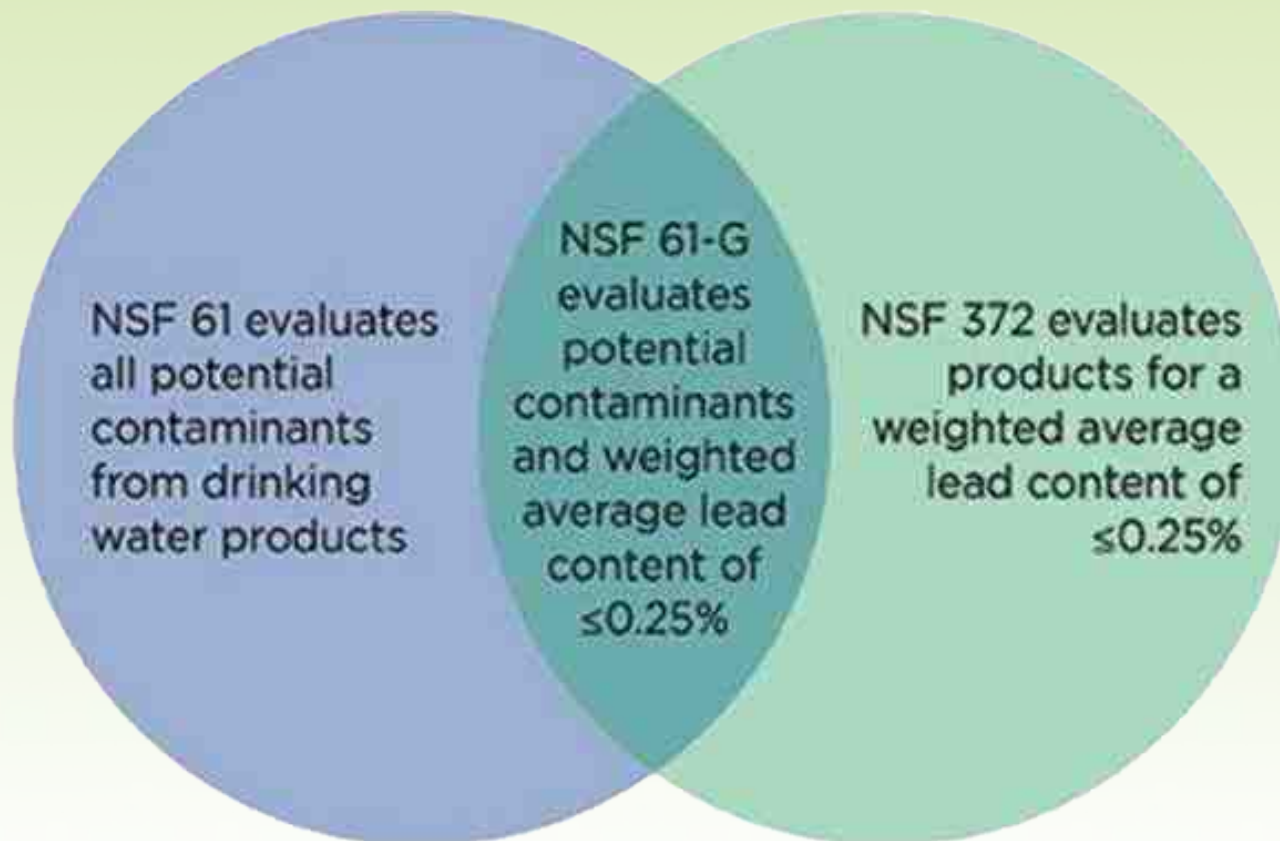




# Dual-Use Potable and Non-Potable Products

- [Guidance Released by EPA in October, 2013 \(FAQ #10, 12, 13\)](#) allows for higher lead content product to be sold if labeled for exclusive non-potable use.
  - Clear and prominent marking
  - Separate packaging and product labeling
- Code enforcement officials should watch for and flag installation of non-potable components in potable applications.

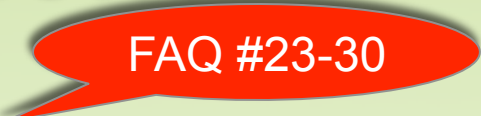
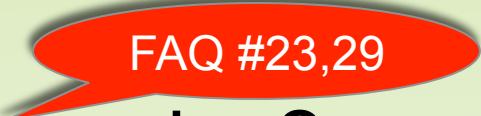
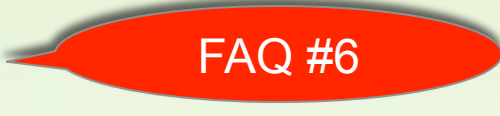




# Standards Comparison



# Enforcement – Role of the Code Official

- Enforcement of lead requirements for installation/use is assigned to the states.
  - EPA can sanction states for failing to enforce
- Primary enforcement mechanism through building/plumbing codes.
- States may assign other responsible parties (e.g. [DTSC in California](#))

# Other Important Questions

- What about replacement parts?  FAQ #23-30
- What about repair and return to service?  FAQ #23,29
- Are hot water systems considered sources of potable water?  FAQ #6
- What about fire sprinklers, **hydrants**?  FAQ #5
- Do coated products comply?  FAQ #17
- Is retrofit required?  FAQ #23
- **What about projects in progress?**  FAQ #15

# What about the states?

- States may impose additional restrictions, requirements – cannot be less stringent.
- [CA](#), [LA](#), [MD](#), [VT](#) currently have similar low-lead requirements in place.
  - Certification, compliance requirements vary
  - Differing guidance on affected products
- BE AWARE OF YOUR LOCAL STATE REQUIREMENTS
  - 8% lead limit
  - NSF 61

# Key Difference Between State and Federal Laws

- California/Vermont/Maryland/Louisiana – applies to any product intended to convey or dispense water for human consumption through drinking or cooking
- Federal – Applies to any product used in systems where water is anticipated to be used for human consumption
  - Could be interpreted to cover a much broader group of products than state laws

# Identifying Compliant Product

- NO SINGLE WAY TO SHOW COMPLIANCE – VARIES BETWEEN MANUFACTURERS
- Options
  - Third-party certification to NSF 372, NSF 61 Annex G
  - Third-party certification to SDWA, State Lead Laws
  - Self-certification
- Vehicles
  - Third-party certification listing
  - Product or packaging marking
  - Specification sheet
  - Manufacturer declaration (document, website)









Third Party  
Certification  
NOT  
required by  
SDWA  
(FAQ #19)



# Certification Marks

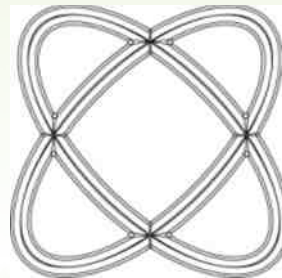
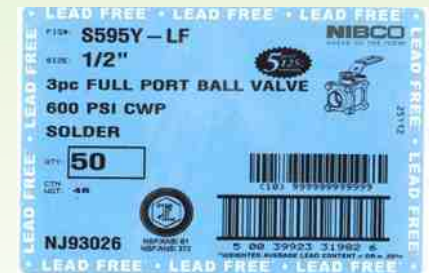
CSA Group	   
ICC Evaluation Services (ICC-ES), LLC	
International Association of Plumbing and Mechanical Officials Research & Testing (IAPMO R&T)	  
Intertek Testing Services NA, Inc.	 

NSF International (NSF)	 NSF-61-G NSF-372 NSF pw-G
Truesdall Laboratories, LLC	
Underwriters Laboratories (UL), LLC	  UND. LAB. CLASSIFIED UND. LAB. CLFD
Water Quality Association (WQA)	  NSF/ANSI 372 by WQA

# Product Identification Examples: Handle Coatings & Product Packaging

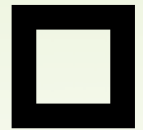
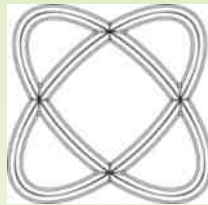


# Product Identification Examples: Carton Labels and Hang Tags



**Compliant**

# Product Identification Examples: Body Markings



# Summary and Conclusion

- New federal lead requirements effective January 4, 2014
- Reduce allowable lead content in potable plumbing components to 0.25% (installed or sold)
- No requirement for retrofit.
- Enforcement at state level usually through codes
- No single compliance mark – varies widely
- States may have additional, more stringent requirements
- More clarification and guidance from the EPA and states is expected...



# More Information from ICC

- Resource Links: [www.iccsafe.org/pmg](http://www.iccsafe.org/pmg)
- [PMG Membership Council](#) (free for members)
- ICC-ES PMG: [www.icc-es-pmg.org](http://www.icc-es-pmg.org)



Home > Codes, Standards & Guidelines > Plumbing, Mechanical & Fuel Gas

### Plumbing, Mechanical, Fuel Gas and Swimming Pools/Spas

ABOUT ADOPTIONS PUBLICATIONS TRAINING SERVICES GET INVOLVED CODE DEVELOPMENT **RESOURCES**

#### What is PMG?

ICC uses the acronym to refer to ICC's model codes, standards, services and resources related to plumbing, mechanical, fuel gas and swimming pools/spas topics.

Originally, PMG stood for Plumbing Mechanical and Fuel Gas. But with the release of the International Swimming Pool and Spa Code (ISPSC) in 2012, it has expanded to include pools and spas.

ICC's model PMG codes include the IPC, IMC, IFGC and ISPSC. Click on the codes below to learn more about each:



2012 International Plumbing Code®



2012 International Mechanical Code®



2012 International Fuel Gas Code®



2012 International Swimming Pool and Spa Code™

These members of ICC's family of coordinated codes are used by communities nationwide to protect health, safety and welfare within buildings. Communities chose ICC's PMG codes because they know ICC offers a superior family of codes, developed through a fair and consensus process.

Click  
Resources  
Tab

# Contact Information

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