

Lead Free Pipes, Fittings, Fixtures, Solder, and Flux for Drinking Water Rule

On July, 29, 2020, the United States Environmental Protection Agency (EPA) [released a final rule](#) codifying the [Reduction of Lead in Drinking Water Act of 2011](#) (RLDWA) and the [Community Fire Safety Act of 2013](#) (CFSA). The RLDWA amended [section 1417 of the Safe Drinking Water Act](#) (SDWA), which prohibits the use and introduction into commerce of plumbing products that are not “lead free” for providing water for human consumption. RLDWA was effective January 4, 2014. National code and standard organizations; state and federal regulators; plumbing component manufacturers, point of use and point of entry water treatment manufacturers, wholesalers, and retailers; plumbers, and public water systems took steps to comply with the revised definition of lead-free included in RLDWA when the law took effect. The question at hand is, how does the Agency’s codification impact current implementation. Important differences include:

1. A regulatory requirement for third-party certification of plumbing product lead content by ANSI accredited certification bodies, unless the manufacturer has less than 10 employees.
2. Provides for self-certification of custom fabricated plumbing products.

Application of Lead-Free Requirement

The RLDWA definition of lead free is already in effect. **Any plumbing product sold for installation in or used in a new installation in a potable water system such that the water passing through the device may be consumed must comply with the RLDWA.**

The water sector has applied the RLDWA lead-free requirement broadly to pipe, fittings, fixtures, and appliances used in potable water applications. The Lead-free Rule explicitly includes examples of plumbed in devices including drinking water coolers, water fountains, point-of-use devices, coffee makers, refrigerator ice and water dispensers as devices that must comply with the

lead-free content requirement. EPA also includes devices that could be found both in potable and nonpotable water applications, including water heaters, water meters, water pumps, and water tanks.

Plumbing products manufactured exclusively for non-potable water applications may have higher lead content. This will not change under the Lead-free Rule. As described in RLDWA nonpotable water uses like manufacturing, industrial processing, irrigation, outdoor watering, or other uses where the water is not anticipated to be used for human consumption are not subject to the statute. There are also specific exemptions in statute including: toilets, bidets, urinals, fill valves, flushometer valves, tub fillers, fire hydrants, shower valves, service saddles, or water distribution main gate valves that are ≥ 2 inches in diameter. In the rule EPA went on to explicitly identify devices as nonpotable devices, including clothes washing machines, emergency drench showers, emergency face wash equipment, eyewash devices, fire suppression sprinklers, steam capable clothes dryers, and sump pumps. The Lead-free Rule also makes provision for labeling products as “Not for use with water for human consumption” as a means of assuring the product is used exclusively for nonpotable applications.

Available Certifications

Currently EPA guidance recognizes three certifications that a plumbing product is lead-free:

1. NSF/ANSI Standard 372
2. NSF/ANSI Standard 61, Annex G
3. California AB 1953, Section 116875

In 2008, ANSI accredited standard NSF/ANSI 61: Drinking Water System Components – Health Effects was modified to incorporate Annex G in addition to the existing lead leaching standard. The Annex established requirements for demonstrating that lead content meets the RLDWA’s 0.25 percent lead by weight of wetted surface criteria. In

2010 the methodology in the Annex were moved to NSF/ANSI 372: Drinking Water System Components – Lead Content. In October 2013 Annex G was retired. There remains an informative Annex 5 that replaces Annex G from earlier editions. NSF/ANSI 61 continues to incorporate the test procedure by incorporating NSF/ANSI 372 by reference for plumbing products intended for potable water uses. Because NSF/ANSI-61 services multiple purposes, and previous editions did not require NSF/ANSI 372 compliance for all product types it is possible to find NSF-61 certified products that have not met NSF/ANSI 372. However, **the current edition of NSF/ANSI 61 requires all products to comply with NSF/ANSI 372.**

Based on an initial review of product listings at certifying organizations, there are some groups of products that will need to be evaluated using the NSF/ANSI 372 lead content methodology. These products will have three years after the publication of the rule to come into compliance; new products must be compliant when introduced into commerce.

Plumbing Product Labeling and Marks

Marks and product packaging labels are important to users of plumbing products. Without a clear indication that a plumbing product is lead-free, inadvertent use of non-compliant products could occur in the field. Currently there are nine third-party certifying organizations that evaluate plumbing products per the above certification standards. With successful completion of that evaluation, manufacturers are authorized to employ marks and package labeling to communicate that the product does indeed comply. The Lead-Free Rule does not establish a single standardized lead-free mark or product packaging label. There is an [EPA guide to marks and product lists from eight certification bodies \(ALS Truesdale Laboratories, CSA Group, IAPMO R&T, ICC-ES, Intertek, NSF International, UL, and Water Quality Association\)](#). [ASSE International](#) also certifies products to NSF/ANSI 372.

Lead Content vs Lead Leaching Standard

EPA's final rule focuses on codification of RLDWA. In doing so, EPA did not require compliance with a lead leaching standard. Such a standard is important to ongoing efforts to the reduction of lead in drinking water. Even with materials of construction compliant with the

NSF 372 protocol, obtaining target lead levels in schools and day care facilities may not be possible. Consequently, the NSF 61-2020 edition will contain a more stringent performance for lead leaching appropriate to endpoint devices.

The Lead-free Rule does not affect the requirement for plumbing components to comply with NSF 61. As illustrated in [Survey of ASDWA Members on the Use of NSF/ANSI Standards, 2019](#) state primacy Safe Drinking Water Act primacy agencies require compliance with NSF 61. Similarly, compliance with NSF 61 is integrated into model codes including the International Plumbing Code, the National Standard Plumbing Code, and the Uniform Plumbing Code.

Devices vs Component Parts

The Lead-free Rule affirms the Agency's prior RLDWA fact sheets and current practice. Lead content per SDWA §1417 is evaluated based on the wetted surface of an entire plumbing product. Direct replacement parts for previously certified lead-free products need not comply individually with the definition of lead-free. This applies to assemblies of parts for such devices as water meters, backflow prevention devices, and point-of-use devices.

Water Treatment Devices

Standards used to evaluate water treatment device performance and safety include allowable lead leaching requirements. Such device standards include NSF/ANSI [42](#), [44](#), [53](#), [55](#), [58](#), [62](#), [244](#), [401](#), and P477; ASSE [1087](#), [1090](#), and [LEC 2006](#); and IAPMO [IGC 322](#). Individual manufacturers may not have obtained NSF 372 lead content certification with third-party certification by ANSI accredited certification bodies. For compliance with RLDWA manufacturers of water treatment devices or other plumbing products that do not already have third-party certification of compliance with NSF 372, will have three years to obtain certification.

The Lead-free Rule specifies that calculation of 0.25% lead content must not include the surface area of media included within the water treatment device. This requirement is consistent with the current NSF 372 protocol.

Enforcement

Because the water sector moved forward proactively to comply with the RLDWA, a system is already in place through existing standards, accrediting bodies, and state

oversight to ensure compliance. The Lead-free Rule does not require states, water systems, or other entities to establish new regulations or ordinances. EPA cites the 2018 International Plumbing Code to demonstrate that compliance with RLDWA lead content is embedded in current model codes. The 2018 National Standard Plumbing Code contains similar language to the 2018 IPC. The Uniform Plumbing Code language has a less direct connection to RLDWA than the IPC and NSPC; it references

NSF 61 which has an embedded connection to NSF 372 for plumbing components used to deliver potable water.

With the final rule, the list of plumbing products identified to which the RLDWA lead-free standard is relevant is broader in scope than some may have realized. The rule will also require some manufacturers to transition from self-certification to third party certification of conformance with NSF/ANSI 372.

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