# Lead-Free Plumbing and the National Construction Code

The Road Ahead for Architects, Designers and Specifiers



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#### Introduction

Safe drinking water is a cornerstone of public health and building safety. However, recent research confirming the presence of lead in Australian drinking water has spurred regulatory changes that are driving a rapid transition to lead-free tapware.

Updated National Construction Code (NCC) regulations now mandate the use of lead-free tapware, aligning with global trends toward stricter water safety standards. Australia and New Zealand will enforce these requirements beginning 1 May 2026, compelling architects, specifiers, and builders to adapt their projects to comply with the new mandates.

Manufacturers are also under pressure to innovate and certify products that meet these rigorous standards. Factors such as cost, material selection, and product availability may influence design and specification decisions. This paper will explore the upcoming regulatory changes in detail and discuss their implications for industry professionals committed to creating healthier, more compliant built environments.







#### Australia's problem with lead

While most Australian tap water is generally deemed safe, studies have revealed that the presence of lead in drinking water is more widespread than initially thought. Although the majority of tap water samples remain below the Australian Drinking Water Guideline (ADWG) threshold of 10 micrograms per litre, some households have recorded levels that exceed this limit.

A 2016 study by Macquarie University highlighted these concerns, finding that 56% of Australian households had detectable levels of lead in their drinking water, with 8% exceeding the ADWG limit.<sup>1</sup> The findings suggest that, while improvements in water treatment have been made, legacy plumbing materials, such as brass fittings, continue to contribute to lead exposure.

The health risks associated with lead exposure are particularly pronounced for vulnerable populations such as children and pregnant women, for whom even minimal lead intake can lead to developmental delays and neurological damage. According to the World Health Organization, lead exposure was attributed to more than 1.5 million deaths globally in 2021, primarily due to cardiovascular effects.<sup>2</sup>

## Transition to lead-free plumbing products

The 2022 edition of the NCC introduces new limits on lead content in plumbing products used in drinking water systems. For architects, specifiers, and builders, these changes provide a clear regulatory framework to guide design and material selection in new constructions and renovations.

Under the updated NCC, from 1 May 2026, copper alloy plumbing products containing more than 0.25% lead will no longer be authorised for installation in systems conveying drinking water. To facilitate a smooth transition, the Australian Building Codes Board (ABCB) agreed to a three-year period for industry adaptation. On 21 April 2023, the ABCB further adjusted this timeline to accommodate delays in trademark registration and supply chain constraints, ensuring that the industry has adequate time to comply with the new standards.

An important element of this regulatory change is the introduction of the "Lead Free WaterMark" trademark, formally registered on 2 May 2023. Until the transition period ends on 1 May 2026, practitioners may continue to install products certified under the current WaterMark Certification Scheme, including those with reduced lead levels. However, once the deadline passes, only products bearing the "Lead Free WaterMark" will be authorised, in strict accordance with Clause A5G4 of NCC 2022, Volume Three, which mandates the 0.25% lead content limit. The scope of these new requirements is comprehensive, encompassing all copper alloy plumbing products that come into contact with drinking water—such as taps, mixers, fittings, valves, backflow prevention devices, water heaters, and water dispensers, as detailed in the WaterMark Schedule of Products. Certain products, however, remain exempt from the regulation; these include items not in constant contact with drinking water, like showerheads, washing machines, dishwashers, HVAC-related boilers, emergency deluge showers, eyewash equipment, and bath-only tapware. This targeted approach ensures that the regulation effectively enhances water quality where it matters most while maintaining flexibility for non-critical applications.



#### Challenges for the industry

Currently, the market for lead-free tapware remains limited, leaving specifiers with a constrained selection when striving to meet both regulatory and aesthetic demands. Many high-end and custom-designed collections have yet to transition to lead-free materials, with established copper alloy tapware requiring extensive reformulation and testing to achieve compliance. While stainless steel tapware is inherently lead-free, its modern and industrial appearance may not suit every architectural project.

This evolving landscape necessitates a proactive approach from specifiers, architects, and builders. It is critical that industry professionals update their project specifications to include only compliant tapware well before the 1 May 2026 deadline. Without timely adjustments, there is a real risk of encountering last-minute product shortages, which could lead to project delays and increased costs. Awareness and early planning are essential to ensure that all projects remain on schedule while adhering to new health and safety regulations.

Manufacturers, for their part, must ramp up efforts to develop, certify, and distribute a broader range of lead-free tapware options that cater to various design requirements. Expanding product lines to include both high-end finishes and more conventional choices will help bridge the gap between regulatory compliance and design innovation.

As the deadline approaches, a coordinated effort between manufacturers and industry professionals will be key to maintaining a steady supply of compliant products, ensuring that public health standards are met without compromising on design excellence.

### **Opportunities for the industry**

With enhanced standards in place, certified lead-free tapware not only contributes to improved public health outcomes but also sets a new benchmark for safety in building practices. As communities become more aware of the risks associated with lead, developers and manufacturers have a clear mandate to innovate, ensuring that plumbing systems across the board meet these rigorous standards and protect the well-being of end users.

In addition to the public health benefits,

incorporating certified lead-free tapware is becoming a key element in achieving sustainability goals and green building certifications. Projects that align with these environmental rating schemes—such as LEED, Green Star, or similar programs—can enjoy improved marketability, higher property values, and reduced operational costs. This trend encourages architects, specifiers, and builders to prioritise materials that support both a healthier living environment and a greener future, thereby opening up new avenues for eco-conscious design and construction practices.

Early adoption of lead-free tapware also offers a competitive edge for manufacturers and specifiers, positioning them as innovators and leaders in a transforming market. By investing in material innovations such as brass reformulation and advanced coating technologies, companies can develop tapware solutions that not only meet stringent regulatory requirements but also offer enhanced durability and water efficiency. This proactive approach minimises the risk of supply shortages as the 1 May 2026 deadline approaches, while simultaneously setting a new industry standard for quality and sustainability.

#### Key takeaways for design practitioners

- By 1 May 2026, all tapware used for drinking water must comply with the NCC definition of lead-free tapware, containing no more than 0.25% lead. Non-compliant products cannot be legally installed beyond this date.
- Look for the **updated "Lead Free Watermark" logo** on product and packaging.
- Specifiers must **proactively update their project specifications** to include only lead-free tapware to ensure regulatory compliance and avoid last-minute supply chain issues.
- Brands like **Caroma offer a broad range** of lead-free tapware across multiple price points and usage cases, making it easier for specifiers to comply.



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## **Caroma: Leaders in lead-free**

Caroma has emerged as a leader in the transition to lead-free tapware, showcasing its expertise in product design and engineering at a time when the industry is navigating complex material changes. Traditionally, lead was integral to achieving stylish designs, but evolving regulatory standards and heightened health concerns have necessitated a shift toward lead-free alternatives. Caroma's commitment to innovation has allowed it to pioneer this transition, setting a high benchmark for quality and design without compromising the aesthetics that consumers expect.

What sets Caroma apart is that its signature designs have seamlessly transitioned to lead-free materials without requiring significant alterations. This was not a simple case of a "copy and paste" process; instead, Caroma's dedicated engineering teams reengineered their products to meet new standards while preserving their distinctive design ethos. In contrast, some manufacturers have struggled with the transition–either failing to achieve the same level of quality or defaulting to stainless steel options that may not align with contemporary design trends.

Offering one of the largest and most versatile ranges of lead-free tapware on the market, Caroma delivers solutions that cater to diverse design styles, price points, and use cases. Their lead-free collections are designed to integrate seamlessly with existing bathroom aesthetics, ensuring that every installation maintains a cohesive and polished look. This versatility not only meets the rigorous standards of modern building codes but also offers architects and specifiers the flexibility they need to create unique, high-quality bathroom environments. As the industry adapts to these new material requirements, companies with deep expertise in product design and engineering–like Caroma–are poised to lead the next phase of tapware innovation. Their ability to navigate the complexities of manufacturing with new materials while upholding style and performance sets them apart as industry trailblazers.

#### What tapware ranges from Caroma are lead-free?

The following Caroma Collections are lead-free and now available for specification and ordering from merchant partners:

- Caroma Liano II
- Caroma Urbane II
- Caroma Opal
- Caroma Care Plus
- Caroma Luna
- Caroma Elegance
- Caroma G Series+
- Caroma Pin
- Caroma Smart Command
- Caroma Civic
- Caroma Contura II
- Clark tapware

All impacted Caroma products that come into contact with drinking water will be certified Lead Free by 1 May 2026, however, the company is committed to evolving their tapware collections ahead of this deadline.



#### REFERENCES

- P.J. Harvey, PJ, HK Handley and MP Taylor. "Widespread copper and lead contamination of household drinking water, New South Wales, Australia." Environmental Research, Vol. 151 (2016): 275-285.
- <sup>2</sup> World Health Organization. "Lead poisoning." WHO. https://www.who.int/news-room/fact-sheets/detail/lead-poisoning-and-health (accessed 24 February 2025).

All information provided correct as of March 2025

