



ABCB

Lead in Plumbing Products Implementation plan

2023





Lead in Plumbing Products Implementation Plan

Australian Building Codes Board

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The ABCB is a joint initiative of all levels of government in Australia, together with the building and plumbing industry. Its mission is to oversee issues relating to health, safety, amenity, accessibility and sustainability in building.

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Executive Summary

The Australian Building Codes Board (ABCBC) has agreed to limit the allowable lead content in plumbing products which contain copper alloys and are intended for use in contact with drinking water, to a weighted average lead content of not more than 0.25% through an amendment to the National Construction Code (NCC)2022 Volume Three.

NCC 2022 specifies new requirements for any plumbing product containing copper alloy and intended for use in contact with drinking water, as well as the means for demonstrating evidence of suitability to those requirements. To allow industry to facilitate the supply and use of lead-free plumbing products, a 3 year transition period was to be provided in NCC 2022, and from 1 September 2025 A5G4(2) of the NCC Volume Three was to take effect. However, due to delays in the registration of the Lead Free WaterMark trademark and ongoing supply chain constraints, the ABCBC subsequently redetermined the transition period to commence on 1 May 2023 and cease by 30 April 2026.

From 1 May 2026, only products conforming to the lead free provisions, where required, will be authorised for use in plumbing installations. Only products that conform to the new lead free requirements as set out in NSF/ANSI/CAN 372-2020 will be authorised for use in a plumbing system. Products that do not conform to the lead free provisions will not be authorised for use in contact with drinking water and any such certification will no longer be valid.

This Implementation Plan (plan) has been developed by the ABCBC Office as a roadmap for the transition process. The plan sets out the key milestones and review points for installation and enforcement and has been developed in consultation with affected stakeholders. It has been informed by consultation with industry and aligns with existing state and territory regulation and administrative processes to the greatest extent possible.

Implementation of low lead requirements

Lead has been permitted in small proportions in the raw materials used to manufacture some plumbing products. While the allowable lead levels permitted in these products ensures compliance with the Australian Drinking Water Guidelines, the use of lead free products will contribute to improved public safety.

The new Australian lead free requirements are based on the United States' definition for lead free. The standard was set at 0.25% weighted average in recognition that it is not possible to source 100% lead free raw material. This also ensures parity with the international market for lead free copper alloy products.

The lead in plumbing products Decision Regulatory Impact Statement (RIS) considered the interaction of many factors relevant to the transition that were raised in responses received during consultation, noting decision makers would balance the needs of industry with the goal of improving public safety outcomes.

In recognition of the scale of change and the public safety aspiration of governments, the ABCBC agreed to a 3 year transition period, commencing upon the adoption of the NCC on 1 September 2022. The decision was announced soon after and the ABCBC Office hosted an industry forum to provide as much notice as possible to assist manufacturers, suppliers and certifiers prepare for transition.

However, due to delays in the registration of the Lead Free WaterMark trademark and ongoing supply chain constraints, in April 2023 the ABCB redetermined the transition period to commence on 1 May 2023 and cease by 30 April 2026.

To enable industry to commence the manufacture and certification of lead free products prior to the adoption of NCC 2022, the ABCB issued [WaterMark Notice of Direction 2021/4 - Certification transition arrangements for Lead Free plumbing products](#) through the WaterMark Certification Scheme in December 2021. The Notice has been periodically updated since that time.

This notice invokes the requirement for certain products to be lead free and advises of the requirements of the NCC prior to publication and adoption in 2022. This has given industry (manufacturers, WaterMark Conformity Assessment Bodies (WMCABs) and testing laboratories) assurance to commence the significant operational adjustments required to deliver lead free certified product.

National Construction Code 2022

Following public consultation, consideration by the Plumbing Code Committee (PCC), and subsequent approval by the board, the NCC A5G4 Evidence of Suitability provisions were amended.

These changes are outlined in Figure 1.

Figure 1 A5G4 Evidence of suitability - Volume Three (PCA)

....

- (2) Any *product* that contains copper alloy and is intended for use in contact with *drinking water* must have a *weighted average* lead content of not more than 0.25% verified in the form of either—
- (a) a test report provided by an *Accredited Testing Laboratory*, in accordance with NSF/ANSI/CAN 372; or
 - (b) a *WaterMark Licence* issued in accordance with (3), if it includes compliance with NSF/ANSI/CAN 372.

....

Notes:

1. A5G4(2) does not take effect until the completion of the transition period specified by WaterMark Notice of Direction 2021/4.
2. Note 1 does not prevent use of *products* certified in accordance with A5G4(2) prior to the completion of the transition period specified by WaterMark Notice of Direction 2021/4.

Application:

Products subject to the requirements of A5G4(2) are specifically nominated in the *WaterMark Schedule of Products*.

Exemption:

1. *Products* that are used exclusively for non-drinking uses such as manufacturing, industrial processing, irrigation, or other uses where water is not anticipated to be used for human consumption are excluded from the requirements of A5G4(2).
2. *Products* excluded from the requirements of A5G4(2) are specifically nominated in the *WaterMark Schedule of Products*.

Explanatory information:

1. Some examples of *products* subject to A5G4(2) include:
 - (a) Copper alloy fittings.
 - (b) Stainless-steel braided hoses.
 - (c) Valves (such as valves used for isolation, backflow prevention, alteration of pressure and temperature).
 - (d) Taps and mixers.
 - (e) Water meters.
 - (f) Pumps (for use with cold and heated water services).
 - (g) Water heaters.
 - (h) Residential water filtration equipment.
 - (i) Water dispensers (such as boiling and cooling units, drinking fountains and bottle fillers).
 - (j) Fire sprinkler systems connected to the cold water service that are not isolated from fixtures and fittings intended to supply water for human consumption
2. Some examples of *products* excluded from the requirements of A5G4(2) include:
 - (a) Shower heads for bathing.
 - (b) Emergency showers, eye wash and/or face wash equipment.
 - (c) Pumps used for irrigation, fire-fighting or other non-drinking purposes.
 - (d) Fire-fighting water services and equipment including residential fire sprinklers.
 - (e) Appliances, including dishwashers and washing machines.
 - (f) Commercial boilers associated with heating, ventilation and air-conditioning systems.
 - (g) Sanitary fixtures (such as toilets, cistern inlet valves, bidets and urinals).
 - (h) *Non-drinking water* services (such as recycled water systems).
3. Lead is currently permitted in small proportions in the raw materials used to manufacture some plumbing products. Whilst the allowable lead levels permitted in *products* ensures compliance with the Australian Drinking Water Guidelines, the use of *lead free* products is encouraged to avoid the potential for adverse effects on human health.

The lead free requirements of the NCC will utilise a number of new and existing defined terms, including:

- **Weighted average:** Is calculated across the *wetted surface area* of a pipe, pipe fitting or plumbing fixture.
- **Drinking water:** Water intended primarily for human consumption but which has other domestic uses.
- **Product:** Plumbing and drainage items within the scope of Volume Three including but not limited to:
 - (a) Materials, fixtures and components used in a plumbing or drainage installation; and
 - (b) Appliances and equipment connected to a plumbing or drainage system.
- **Wetted surface area:** is calculated by the total sum of diameter (D) in contact with drinking water.

- **Accredited testing laboratory:** One of the following:
 - (a) An organisation accredited by the National Association of Testing Authorities (NATA) to undertake the relevant tests.
 - (b) An organisation outside Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement.
 - (c) An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.
- **WaterMark Licence:** A licence issued by a *WaterMark Conformity Assessment Body*.

WaterMark Schedule of Products

Reference to the WaterMark Schedule of Products (WMSP) will provide clarity to manufacturers and WMCABs regarding which products must meet the lead free requirements of the NCC. This provides the ability to adjust as new and innovative products are introduced to the WaterMark Certification Scheme.

An example of the proposed amendments to the WMSP is contained in **Figure 2**.

Figure 2 Example of proposed amendments to the WMSP

Product type	Product scope / application	Specification	Year	Lead free
Tapware	<p>Metallic taps, plastic taps, mixing taps, sensor (non-touch) taps, lever taps, timed flow taps, mixing taps mechanical (non-thermostatic), and tap sets in a range of nominal sizes from DN 6 to DN 50, generally for continuous operating temperatures not exceeding 80°C.</p> <p>Including the following tap types: bib, bidette, stop, mixing (non-thermostatic), non-touch, washing machine stop, hose, diaphragm, pillar, laboratory, hand spray, drinking fountain, self-closing, ferrule and tapware with an integral pop up-waste.</p>	AS/NZS 3718 Water supply - Tapware	2005	Yes
Shower	A showerhead through which water is intended to pass to form a spray for bathing purposes, which may include a fixed or pivot arm, a flexible hose (with or without a flow controller), tap top assemblies, or other components.	AS/NZS 3662 Performance of showers for bathing	2005	No

Products within scope

All copper alloy plumbing products that are in contact with drinking water must meet the 0.25% lead requirement. In determining the application of the lead free requirements, the following aspects were considered for each product to determine the applicability of lead free requirements:

Alignment with international practice

To ensure Australia does not include more stringent requirements than countries the proposed changes seek to align with and at a level with proven technology to manufacture (e.g. United States and Canada), this consideration is important to prevent any barriers to importation.

Health benefits

The objective health benefits derived from the use of lead free plumbing products, as analysed by the [Regulation Impact Statement](#) (RIS), was a key consideration in developing the scope of the lead requirements of the NCC. This resulted in the lead free requirements being limited to those containing copper alloy that are in contact with drinking water. These products include items such as fittings, valves, taps, mixers, water heaters, water dispensers (boiling and cooling units) and water meters.

Exemptions

In considering the health benefits of lead free plumbing, a number of products and applications were excluded. These primarily relate to water services not used for human consumption. Copper alloy plumbing products that are not intended to be used for drinking water and/or human consumption are exempt from the lead requirements of the NCC. These exempt products include:

- fire-fighting equipment
- irrigation
- appliances, including washing machines and dishwashers
- commercial boilers (associated with HVAC systems)
- emergency deluge showers, eyewash and eye-face wash equipment, and
- recycled water systems (such as residential reuse systems or dual reticulation systems).

In addition, the RIS excluded some products, for example, shower heads, as the health objectives of the lead free requirements would not be achieved because:

- they are isolated from the water supply when not in use
- they do not hold water when they not in use, and
- the water dispensed is not intended to be consumed.

Compliance at the point of installation

The ABCB appreciates that adoption and enforcement at the point of installation is a function for state and territory governments. To achieve the health benefits from the use of lead free plumbing products, the Board confirmed on 21 April 2023 that from 1 May 2026, only products compliant to the lead requirements of the NCC can be installed in a plumbing installation.

The transition arrangements are specified in the NCC to maintain consistency across all jurisdictions. The transition concludes on 30 April 2026. Beyond this date, products installed in a plumbing system must be lead free in compliance with NCC 2025.

It will be necessary for plumbing regulators to ensure compliance with the WaterMark Certification Scheme and the requirements of the PCA for lead free plumbing products. Existing products that were previously certified under the WaterMark Certification Scheme will not be authorised for installation from 1 May 2026, unless compliant with the lead free requirements of the NCC.

Stakeholders should be reminded that existing products, such as those already installed, were compliant at the time of installation and remain safe to use.

Terminology

The first consideration in terminology is the desire to align with the requirements of the United States of America, which commonly refer to products containing not more than 0.25% lead across the wetted surface area as being 'lead free'. Australia's market is relatively small, and manufacturers will likely consider the introduction of alternative terminology (e.g. on product labelling or marketing) a barrier to trade and supply into the Australian market. It is also acknowledged that issues may arise with the mixed use of the 'low lead' and 'lead free' terminology in the marketplace.

The proposed definition in the NCC 2022 will be:

Lead free: Applied to a plumbing *product* — with a *weighted average* lead content of not more than 0.25%, as determined in accordance with A5G4(2).

Including a defined term in the NCC will promote a clear and uniform understanding of the new requirements with stakeholders. Aligning both in stringency and terminology with that applied in the United States of America and Canada will enable consistent labelling across markets and facilitate trade.

Product marking

To enable identification of lead free product for installers and regulators the Board has determined it is necessary for compliant product to be marked.

A WaterMark Notice of Direction will be developed and, following consultation, published setting out the most cost effective and practical product marking method.

Monitoring transition of certification

A number of ongoing monitoring mechanisms will be adopted to provide the ABCB with an indication of progress with the transition of certification and an insight into implementation issues encountered.

JAS-ANZ surveillance of WMCABs

The Joint Accreditation System of Australia and New Zealand (JAS-ANZ) undertakes routine surveillance of WMCAB compliance with the WaterMark Scheme Rules and issued Notices of Direction. JAS-ANZ will assist the ABCB Office by reviewing and monitoring progress with the transition of certification to the lead free requirements.

WaterMark Product Database

As of April 2023, there are 912 WaterMark Licences with products likely requiring re-certification against the new requirements if they are to remain in the market as WaterMark certified product and be authorised for installation post transition.

WMCABs will determine with their licence holders (manufacturers and importers) which products on each licence need to be re-certified as a lead free product (i.e. manufacturers will need to make commercial decisions about which products will be re-certified and retained in the market, retired from the market, and/or replaced with new lead free products).

By monitoring the WaterMark Product Database, the ABCB will be able to identify how many products have been certified as lead free compliant. However, this data will not provide insight into the preferences of manufacturers and importers to transition, nor identify any issues being encountered that are preventing transition.

Consultation

Consultation processes will be adopted by the ABCB to seek feedback from impacted industry areas. To ensure consistency in the responses received and to be able to evaluate this information against previous responses, a survey process is proposed to be undertaken across a number of impacted stakeholder groups. The consultation will inform the ABCB of any barriers to transition and gain feedback directly from those impacted.

WaterMark Conformity Assessment Bodies

There are currently 11 WMCABs accredited under the WaterMark Certification Scheme who have contractual agreements with the Approved Users (manufacturers and importers).

The ABCB Office will survey the WMCABs regularly during the transition period to gauge progress with the transition of certification and any potential issues encountered by manufacturers in the move to lead free manufacturing.

Industry associations

The amount of existing stock certified to current, rather than the new lead free requirements, that remains in the market will be an important indicator of transition progress. Therefore, monitoring activities with plumbing product suppliers will provide an important insight to progress.

Consultation with the Australian Industry Group and the Plumbing Products Industry Group will also be adopted to monitor progress. A survey will be released by the ABCB Office and distributed to manufacturers through these industry associations. The survey will enable the ABCB to gain insight into the progress made and any issues encountered by manufacturers in the move to lead free manufacturing.

This consultation is important to address a key area of concern for manufacturers, as stock in the supply chain and beyond is outside the control of the product manufacturer.

The ABCB intends to survey industry stakeholders regularly throughout the transition period.

Reporting

Reporting to the Board will be an important feature of this implementation plan. This will enable noting of the effectiveness of the transition period and enable the consideration of other possible action should implementation be delayed.

