

AS/NZS 3500.4:2021



Australian/New Zealand Standard™

Plumbing and drainage

Part 4: Heated water services



AS/NZS 3500.4:2021

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- Australian Building Codes Board
- Australian Industry Group
- Australian Stainless Steel Development Association
- Backflow Prevention Association of Australia
- Engineers Australia
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- Master Plumbers, Gasfitters and Drainlayers New Zealand
- Ministry of Business, Innovation and Employment (NZ)
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- Plastics New Zealand
- Plumbers, Gasfitters and Drainlayers Board (NZ)
- Plumbing Distributors Association of New Zealand
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Preface

This document was prepared by the joint Standards Australia/Standards New Zealand Committee WS-014, Plumbing and Drainage, to supersede AS/NZS 3500.4:2018.

The objective of this document is to provide Deemed-to-Satisfy solutions for compliance with —

- (a) the National Construction Code (NCC) Volume Three, Plumbing Code of Australia (PCA), and
- (b) the New Zealand Building Code (NZBC), Clause G12 Water Supplies.

A list of all parts in the AS/NZS 3500 series for plumbing and drainage can be found in the Standards Australia and Standards New Zealand online catalogues.

The major changes in this revision are as follows:

- (i) Conformance to individual product standards has been removed. All products used in plumbing and drainage systems in Australia need to comply with the PCA and, in New Zealand, the NZBC, see [Appendix B](#) for further information. Removal of specific product standard conformance requirements avoids inconsistencies and contradictions between this document and the PCA and NZBC
- (ii) Definitions have been relocated to AS/NZS 3500.0 for consistency across the series.
- (iii) Jointing requirements for plastics pipes have been clarified and expanded to allow different methods.
- (iv) Changes to the requirements for the marking of pipes in commercial buildings to assist in the better identification of pipework and avoid cross connections.
- (v) Changes to the requirements for the installation of water services located in metal-framed walls to bring the provisions in line with those of the National Association of Steel-Framed Housing (NASH).
- (vi) The separation between above-ground heated water services pipe work and electrical services has been reduced to bring it in line with AS/NZS 3000 and AS/NZS 3500.1.
- (vii) To improve the amenity of users and reduce wastage of water and energy, changes have been made to requirements for circulated heated water systems including water meters and entry points for heated water, thermal insulation for non-circulatory heated water piping, and maximum capacities of any dead leg from the branch offtake to its termination. [Appendix Q](#) has been added to provide a guide to determining capacity of dead legs and estimating wait times.
- (viii) Heated water temperature control provisions, which are considered matters of public policy, were elevated from AS/NZS 3500.4 to the PCA Part B2 Heated Water Systems. To avoid conflict between the PCA and this document, clauses relating to sanitary fixtures delivery temperature and solutions for control of delivery temperatures have been deleted. In New Zealand, these provisions are contained within NZBC Acceptable Solution G12/AS1.

The terms “normative” and “informative” are used in Standards to define the application of the appendices to which they apply. A “normative” appendix is an integral part of a Standard, whereas an “informative” appendix is only for information and guidance.

Notes or footnotes to tables or figures that are expressed in mandatory terms are deemed to be requirements of this document.

Notes to clauses in this document are informative only and do not include requirements.

This document includes commentary on some of the clauses. The commentary directly follows the relevant clause, is designated by "C" preceding the clause number, and is printed in italics in a box. The commentary is for information and guidance and does not form part of the document.

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Plumbing and drainage

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Section 1 Scope and general

1.1 Scope

This document sets out the requirements for the design, installation and commissioning of heated water services using drinking water or rainwater or a combination thereof. It includes aspects of the installation from, and including, the valve(s) on the cold water inlet to any cold water storage tank or water heater and the downstream fixtures and fittings. It applies to new installations as well as alterations, additions and repairs to existing installations.

This document applies to the installation of the following types of water heaters:

- (a) Storage water heaters with a rated delivery or capacity of up to 700 L per heater.
- (b) Heat exchange water heaters.

NOTE 1 Electric heat exchange water heaters are defined in AS 1361. Other fuel sources are covered in the applicable Standards, e.g. AS/NZS 2712, AS/NZS 5263.1.2.

- (c) Instantaneous, continuous flow water heaters.

NOTE 2 [Appendix M](#) provides guidelines for the operation and maintenance of heated water services.

Illustrations used in this Standard are diagrammatic only and have been chosen without prejudice.

1.2 Application

1.2.1 Australia

This document shall be read in conjunction with the relevant mandatory requirements for heated water services under the National Construction Code (NCC), primarily Volume Three, Plumbing Code of Australia (PCA).

Where alternative Australian or New Zealand Standards are referenced (e.g. AS 1345), the Australian Standard shall be used for Australia only.

1.2.2 New Zealand

This document shall be read in conjunction with the New Zealand Building Code. This document may be used to demonstrate compliance with the New Zealand Building Code, Clause G12 Water Supplies.

Where alternative New Zealand Standards are referenced (e.g. NZS 5807), the New Zealand Standard shall be used for New Zealand only.

1.3 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document.

NOTE Documents referenced for informative purposes are listed in the Bibliography.

AS 1432, *Copper tubes for plumbing, gasfitting and drainage applications*

AS 3498, *Authorization requirements for plumbing products—Water heaters and hot-water storage tanks*