



PRELIMINARY IMPACT ANALYSIS

PROPOSAL: This proposal seeks to review joint Australian and New Zealand Standards (AS/NZS) 3500 Plumbing and Drainage:

- Part 1 – Cold Water Services
- Part 2 – Sanitary Plumbing and Drainage
- Part 4 – Heated Water Services

This amendment seek to align these documents with the requirements of the WaterMark Certification Scheme.

Responsible Technical committee: Australian Standard Committee WS-014 Plumbing and Drainage

NCC REFERENCE: For revisions or amendments to existing National Construction Code (NCC) referenced documents, provide additional information	BCA Volume One:	N/A	
	BCA Volume Two:	N/A	
	PCA Volume Three:	AS/NZS 3500.1	B1.4, B3.3, B4.2, B5.2, B5.3, B5.4, BS 5.1.2, B6.4 B6.5
		AS/NZS 3500.2	C1.3, CV2.2, C2.3, C2.4
	AS/NZS 3500.4	B2.2, B2.6, B2.7, B2.8, B2.9	

PROPONENT:	Nominating organisation: Australian Building Codes Board Nominating individual: Tom Roberts Position: Director - Plumbing Contact email: Tom.Roberts@abcb.gov.au
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document date and/or version number

NATURE AND EXTENT OF THE PROBLEM:

References to product specifications are common throughout AS/NZS 3500 Parts 1, 2 and 4.

There are two issues caused through these references including:

- The specifications referenced are the edition of the specification which was current at the time of publication. As secondary references, this locks the specific edition of a document in until such time as the primary referenced document is updated. This issue is heightened due to the three year amendment cycle of both the National Construction Code (NCC) and the amendment cycle for the AS/NZS 3500 series (which has recently been amended to align with the NCC) through amendments or revisions to AS/NZS 3500 only being called into legislations every three years.
- The specifications referenced within the AS/NZS 3500 series may not be the same specifications deemed appropriate by the WaterMark Administration for the certification of a plumbing or drainage product. As an example, the installation standard could reference one document for the authorisation of a product, however, to be certified under the WaterMark Certification Scheme, the product would be required to be manufactured and certified for compliance to a different document.

Both of these issues outlined above cause significant misalignment between the documents referenced by the installation standards and the requirements of the NCC and the WaterMark Certification Scheme.

As product specifications are regularly updated and as the WaterMark Administration has the ability to update the WaterMark Schedule of Products and reference the latest versions of specifications (subject to compliance with the WaterMark Protocol for Referenced Specifications) at any time, it is becoming increasingly common for the misalignment between the two documents.

In practice, this is causing plumbing and drainage products, which are compliant to the requirements for WaterMark certification, to be non-compliant for installation as the products may meet either a different specification to that referenced by the installation standard or a different version of a specification.

Another issue is that a number of the references to product specifications are included for the purpose of providing product specific installation provisions which may be contained within that secondary referenced product specification. This causes plumbing practitioners and plumbing regulators to purchase a document intended for the manufacturing and certification of a plumbing or drainage product, for often a single clause containing an installation requirements. This practice and the general reluctance for plumbing practitioners to purchase secondary references carries a high risk of non-compliance.

This proposal aims to reduce this risk by aligning the product specifications and the installation standard by including any installation provisions within the installation standard and any identified product manufacturing or certification requirement within the relevant product specification.

Through the proposed changes outlined within Section 1C, this proposal intends to ensure alignment between the plumbing and drainage installation standards and the requirements of the NCC, primarily Plumbing Code of Australia (PCA) and the WaterMark Certification Scheme is strengthened. The consequences of no action will see the risk of non-compliance and the misalignment between referenced product specifications continue and increase.

OBJECTIVES:

The objective of this proposed revision is to align the requirements of the plumbing installation standard with the requirements for demonstrating that a material or product used in Australia or New Zealand is fit for its intended purpose and provide guidance to plumbing practitioners as to how this is achieved in each jurisdiction.

OPTIONS:

It is considered that there could be a number of options which, if implemented, could address the problem as described above.

There are five options presented for the decision maker:

Option 1 – Status Quo

This option will result in no change. The status quo will be regarded as the baseline. Where the incremental impacts of each option result in a net cost, this option will be recommended.

Option 2 – Informative guidance

This option would result in the inclusion of informative notes under each clause affected by this issue.

Option 3 – Non-regulatory content

To remove the reference from the normative section of the clause and add as a note guiding readers to the specific document for further information.

Option 4 – Regulatory revision

To remove the requirements to comply with the product specifications by deleting the reference in its entirety.

Option 5 – Combined regulatory and non-regulatory option

This option would see a combination of Option 3 and Option 4 as appropriate to the specific clause.

IMPACT ANALYSIS (OF ALL OPTIONS):

Option 1 – Status Quo

The status quo would result in the issues outlined above continue and potentially grow as product specifications are amended or revised and the WaterMark Schedule of Products (a live document) is amended to reference the latest versions.

This option is not considered to provide any cost or societal benefits and the problems described above would continue.

Option 2 – Informative guidance

To provide informative guidance under each clause (See attachment 1) would see informative notes be inserted under a large number of clauses. It is considered that as this informative information would then conflict with the requirements of the clause.

This option is not considered to provide any cost benefits and will see the issues outlined above continue and also has the potential to cause confusion due to the conflicting nature of the change.

Option 3 – Non-regulatory content

A non-regulator option would see that references to product specifications are made informative. Whilst this would be considered a regulatory change this option would guide practitioners to the appropriate product specification should additional information on the manufacturing or certification requirements be needed, however would not require the plumbing practitioners to install products to comply with this specific specification.

This option is considered to resolve the issues outlined above however as this issue effects a large number of clauses throughout each document (see appendix A) is it considered that this option would not be suitable in all instances as the documents referenced may not reflect the product specifications utilised by the WaterMark Certification Scheme which could either be a completely different document or be locked into a specific edition of the specification.

Whilst it is considered that plumbing practitioners purchasing secondary referenced documents would occur rarely, the regulatory requirement for compliance with these documents would only remain where it is considered necessary for the installation of a plumbing and drainage service of system. It is considered that there would be significant cost savings from this option as the requirement for plumbing practitioners to purchase each reference document would no longer exist. Plumbing practitioners would have the option to purchase if needed, however it is considered that this would only occur as required to achieve compliance with the PCA or referenced standards (AS/NZS 3500 Parts 1, 2 and 4).

Option 4 – Regulatory revision

This option would remove references to product specifications within the installation standard.

Where there are specific installation requirements within the referenced product specifications proposed to be removed, those installation requirements would be considered for relocation or duplicated into the installation standard or for the reference to specifically state 'for installation' so as to not cause confusion with the requirements for product certification.

Whilst it is considered that plumbing practitioners purchasing secondary referenced documents would occur rarely, the regulatory requirement for compliance with these documents would only remain where it is considered necessary for the installation of a plumbing and drainage service of system. It is considered that there would be significant cost savings from this option as the requirement for plumbing practitioners to purchase each reference document would no longer exist. Plumbing practitioners would have the option to purchase if needed, however it is considered that this would only occur as required to achieve compliance with the PCA or referenced standards (AS/NZS 3500 Parts 1, 2 and 4).

Option 5 - Combined regulatory and non-regulatory option

Each clause identified is reviewed and if a reference to a product specification is justified, it shall be made informative, ensuring that it aligns with the referenced specifications outlined in the WaterMark Schedule of product and if considered necessary, additional guidance for plumbing practitioners be inserted referring to the appropriate document.

This option would provide the flexibility to address each clause in the way necessary to resolve the issue and provide plumbing practitioners with additional guidance where required.

This option would see cost savings further described under Option 3 and 4 be achieved.

TRANSITIONAL MEASURES

No transitional measures are considered necessary when the revised document is referenced in the NCC.

CONSULTATION:

Consultation on the project proposal was undertaken with both Standards Australia's WS-014 committee and the ABCB's Plumbing code Committee.

A working group was formed from members of both WS-014 and other key industry stakeholders to undertake the review of each part. The recommendations of the working group were then considered by the WS-014 committee and endorsed for release to public consultation which will occur in 2020.

The New Zealand representatives of WS-014 (including MBIE) have been consulted throughout the project. The proposed revision includes additional information on how to determine plumbing and drainage products are fit for purpose for use in New Zealand, as the WaterMark product certification scheme is not mandatory in New Zealand.

During public consultation the Plumbing Code Committee and the general public will have the opportunity to review and provide comment. It is important to note that some changes proposed through this project/revision include editors notes specifically inviting comment on a proposed change.

Standards Australia's technical committees responsible for the secondary referenced documents should be consulted with when reviewing the content of each clause to ensure the best possible resolution between the two documents and that there is no unintended consequences.

CONCLUSION AND RECOMMENDED OPTION:

It is recommended that option 5 be adopted as this option would see the greatest benefits to the plumbing industry.

IMPLEMENTATION AND REVIEW:

LIST OF ATTACHMENTS:

- Appendix A – Schedule of major changes
This schedule identifies all clauses throughout the three standards where issues or potential issues were identified and a review was recommended by the project proposal.

Attachment A: SCHEDULE OF MAJOR CHANGES

AS/NZS 3500.1:2018

- Clause 2.2 Authorization
- Clause 2.3 Selection and use of materials and products
- Clause 2.4 Limitations on use of pipes and fittings
- Clause 2.4.2 Metallic pipes and fittings
- Clause 2.6 Joints
- Clause 2.8 Miscellaneous materials
- Clause 2.9 Backflow prevention devices
- Clause 4.4.1 general
- Clause 4.6.2.2 Accessibility
- Clause 4.6.3.3 Non-testable devices
- Clause 5.2.3.2 consumer gas pipes
- Clause 5.2.9 crossover of other underground services
- Clause 5.5.1 General
- Clause 5.5.4 Joining of copper and copper alloy
- Clause 5.5.7 roll-grooved joints
- Clause 5.5.9 solvent cement joints
- Clause 5.5.10.1 jointing of piping, up to and including DN 25.
- Clause 5.5.10.2 jointing of piping larger than DN 25
- Clause 5.18 identification of piping (and clause 6.5)
- Clause 8.3.3 access
- Clause 9.2.1 general
- Clause 9.6.2 marking of non-drinking water pipework
- Clause 6.6.3 identification of buried non-drinking water services
- Clause 9.7.2 identification of all non-drinking water outlets
- Clause 11.3 Water Closer
- Clause 11.5.4 water closet pan and slop hopper pan type cisterns
- Clause 12.2.1 bidets
- Clause 12.2.3 toilet seat douches
- Clause 16.3.2.1 pipework
- Clause 17.2 methods of design
- Clause 17.5 fire services
- Appendix B Acceptable pipes and fittings
- Appendix I

AS/NZS 3500.2:2018

- Clause 2.4.5 other materials – pipes and fittings
- Clause 2.5.1 copper
- Clause 2.5.2 stainless steel
- Clause 2.6.1 flanged joints

- Clause 2.6.2 elastomeric seals
- Clause 2.6.3 silver brazing alloy
- Clause 2.6.5 plastics
- Clause 2.7 concrete and mortar
- Clause 2.7.5 steel reinforcement
- Clause 2.8 miscellaneous
- Clause 3.6.3 separation from underground electrical supply cables or consumer gas pipes
- Clause 3.6.7 crossover of underground services
- Clause 3.20 onsite wastewater treatment units
- Clause 4.4.3.1 general
- Clause 4.8.3.3 ladders
- Clause 5.4.2 bedding materials
- Clause 6.10.1 air admittance valves
- Clause 10.6.1 general
- Clause 10.7 installation of PVC-U pipes
- Clause 10.8 installation of high density polyethylene
- Clause 10.10 identification of pipes
- Clause 10.13.2 Bolted gland joints
- Clause 10.13.9 band-clamped sleeve joints (BC)
- Clause 10.13.10 PE-HD joints
- Clause 16.3.1 pipes and fittings for vacuum drainage applications
- Clause 16.6 connections to vacuum system
- Clause 16.7 connections within a vacuum system
- Appendix A acceptable pipes and fittings
- Bibliography

AS/NZS 3500.4:2018

- Clause 1.11.1 storage temperature
- Clause 1.11.2 sanitary fixtures delivery temperature
- Clause 1.11.3 solutions for control of delivery temperatures
- Clause 2.2 authorisation
- Clause 2.3 selection and use of materials
- Clause 2.4.1 general
- Clause 2.4.2 metallic pipes and fittings
- Clause 2.4.3 plastic pipes and fittings
- Clause 2.5.1 safe tray
- Clause 2.5.2 safe wastes
- Clause 2.6.1 flanged joints
- Clause 2.6.2 elastomeric seals
- Clause 2.6.3.1 copper and copper alloys
- Clause 2.6.3.2 stainless steels
- Clause 2.6.4 filler rods for stainless steel joints

- Clause 2.7.1 concrete mix
- Clause 3.3 thermostatic mixing valves
- Clause 4.3.1 general
- Clause 4.3.2 compression-type fittings
- Clause 4.3.3 joining of copper and copper alloy pipes
- Clause 4.3.7.2 jointing of piping larger than DN25
- Clause 4.5.1.2 chases, ducts or conduits
- Clause 4.11.2.1 General
- Clause 4.12.2 identification
- Clause 5.8 pressure relief and venting of water heaters and container
- Clause 6.3.1 sizing of solar performance
- 6.3.3 structural integrity
- Clause 6.3.5 collector circuit
- Clause 6.3.9 over-temperature protection
- 6.3.14 supplementary heating
- 6.5.1.2A Residential solar collector orientation
- Clause 6.5.2.2 frost-prone areas
- Clause 6.5.2.3 hail-prone areas
- Clause 6.6.1 pumps and controllers
- Clause 8.2 thermal insulation
- Clause 8.5 container for storage of heated water
- Clause 9.4 commissioning
- Clause 10.6.1.1 general
- Appendix B acceptable pipes and fittings
- Appendix C internal pipe diameters
- E6 components
- K2 climate zones
- M3 maintenance of heated water services
- Bibliography