CONTENTS AND FEATURES INTRODUCTION

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Introduction
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## LIST OF AMENDMENTS

List of Amendments
INTRODUCTION

THE NATIONAL CONSTRUCTION CODE SERIES
The National Construction Code Series (NCC) is an initiative of the Council of Australian Governments developed to incorporate all on-site construction requirements into a single code. The Plumbing Code of Australia (PCA) is Volume Three of the NCC series.

FORMAT
The NCC is published in three volumes:
Volume One: pertains primarily to Class 2 to 9 buildings.
Volume Two: pertains primarily to Class 1 and 10 buildings (houses, sheds, carports, etc).
Volume Three: pertains primarily to plumbing and drainage associated with all classes of buildings.
All three volumes are drafted in a performance format allowing a choice of Deemed-to-Satisfy Provisions or flexibility to develop Alternative Solutions based on existing or new innovative building, plumbing and drainage products, systems and designs.

THE PLUMBING CODE OF AUSTRALIA
The PCA is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government and each State and Territory Government.

THE AUSTRATICAN BUILDING CODES BOARD
The ABCB is established by agreement between the Australian Government and each State and Territory Government. It is a co-operative arrangement between the signatories, Local Government and the building industry.
The ABCB’s mission is to address issues relating to health, safety, amenity and sustainability by providing for efficiency in the design, construction and performance of buildings and development of effective regulatory systems.
The Board comprises—
(a) the Australian, State and Territory Government’s principal officer responsible for building regulatory matters; and
(b) a representative of the Australian Local Government Association (ALGA); and
(c) representatives of the building and construction industry.
The Plumbing Code Committee (PCC) is the peak technical advisory body to the ABCB, with responsibility for technical matters associated with the PCA.
The PCC comprises—
(a) the General Manager of the ABCB Office; and
(b) one nominee each of the Australian, State and Territory Government members of the ABCB; and
(c) representatives of the plumbing and drainage industry.
THE PLUMBING CODE OF AUSTRALIA — CONTENT

GOALS

The goal of the PCA is to enable the achievement of nationally consistent, minimum necessary standards of relevant health, safety, amenity and sustainability objectives efficiently.

The goal is applied so that—

(a) there is a rigorously tested rationale for the regulation; and

(b) the regulation generates benefits to society greater than the costs (that is, net benefits); and

(c) the competitive effects of the regulation have been considered and the regulation is no more restrictive than necessary in the public interest; and

(d) there is no regulatory or non-regulatory alternative that would generate higher net benefits.

STATE AND TERRITORY VARIATIONS AND ADDITIONS

Each State's and Territory's legislation adopts the PCA subject to the variation or deletion of some of its provisions, or the addition of extra provisions. These variations, deletions and additions are contained in appendices to the PCA.

Flags identifying variations are located within the relevant provisions and at the beginning of relevant Tables. Additional provisions to a Part are identified at the end of that Part.

DEFINITIONS

Words with special meanings are printed in italics and are defined in A1.1.

LEGISLATIVE ARRANGEMENTS

GENERAL

The PCA is given legal effect by relevant legislation in each State and Territory. This legislation consists of an Act of Parliament and subordinate legislation which empowers the regulation of certain aspects of plumbing and drainage installations, and contains the administrative provisions necessary to give effect to the legislation.

Any provision of the PCA may be overridden by, or subject to, State or Territory legislation. The PCA must therefore be read in conjunction with that legislation. Any queries on such matters should be referred to the State or Territory authority responsible for on-site plumbing or drainage installation matters.

PCA ADOPTION

The adoption of the PCA is addressed in Part A0.

DOCUMENTATION OF DECISIONS

Decisions made under the PCA should be fully documented and copies of all relevant documentation should be retained.

Examples of the kind of documentation which should be prepared and retained include:

(a) Details of the Plumbing or Drainage Solution including all relevant plans and other supporting documentation.

(b) In cases where an Alternative Solution has been proposed—

(i) details of the relevant Performance Requirements; and

(ii) the Assessment Method or methods used to establish compliance with the relevant Performance Requirements; and
(iii) details of any *Expert Judgment* relied upon including the extent to which the judgement was relied upon and the qualifications and experience of the expert; and
(iv) details of any tests or calculations used to determine compliance with the relevant *Performance Requirements*; and
(v) details of any Standards or other information which were relied upon.

**STRUCTURE**

The PCA has been structured as set out in A0.3 and shown in Figure A0.3. It is the ABCB’s intent that the *Objectives* and *Functional Statements* be used as an aid to the interpretation of the PCA and not for determining compliance with the PCA.

**FURTHER REVIEW OF THE PLUMBING CODE OF AUSTRALIA**

Regular changes are planned to the PCA to improve clarity of provisions, upgrade referenced documents and to reflect the results of research and improved technology.
# SECTION A CONTENTS

## SECTION A GENERAL PROVISIONS

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**Part A2 Acceptance of Design and Construction**
- A2.1 Suitability of materials and products
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A0.1 Adoption

The dates of adoption of the PCA and its amendments will be shown in the “History of Amendments” division in future editions.

A0.2 Scope

(a) Sections B to F of the Plumbing Code of Australia contain the technical Performance Requirements for the design, construction, installation, replacement, repair, alteration and maintenance of—
   (i) water services; and
   (ii) sanitary plumbing and drainage systems; and
   (iii) stormwater drainage systems; and
   (iv) heating, ventilation and air conditioning systems; and
   (v) on-site wastewater management systems.

(b) Section G of the PCA contains the procedures for certification of plumbing and drainage products for authorised use in new installations, alterations, additions, replacement and repairs to existing installations.

A0.3 Structure

The structure of the PCA comprises the following as shown in Figure A0.3:

(a) The Objectives.

(b) The Functional Statements.

(c) The Performance Requirements with which all Plumbing or Drainage Solutions must comply.

(d) The Plumbing or Drainage Solutions.
A0.4 Compliance with Plumbing Code of Australia

A Plumbing or Drainage Solution will comply with the PCA if it satisfies the Performance Requirements.

A0.5 Meeting the Performance Requirements

Compliance with the Performance Requirements can only be achieved by—

(a) complying with the Deemed-to-Satisfy Provisions; or

(b) formulating an Alternative Solution which—

   (i) complies with the Performance Requirements; or
   (ii) is shown to be at least equivalent to the Deemed-to-Satisfy Provisions; or

(c) a combination of (a) and (b).

A0.6 Objectives and Functional Statements

The Objectives and the Functional Statements may be used as an aid to interpretation.

A0.7 Deemed-to-Satisfy Provisions

A Plumbing or Drainage Solution which complies with the Deemed-to-Satisfy Provisions is deemed to comply with the Performance Requirements.
A0.8 Alternative Solutions

(a) An Alternative Solution must be assessed according to one or more of the Assessment Methods.

(b) An Alternative Solution will only comply with the PCA if the Assessment Methods used to determine compliance with the Performance Requirements have been satisfied.

(c) The Performance Requirements relevant to an Alternative Solution must be determined in accordance with A0.10.

A0.9 Assessment Methods

The following Assessment Methods, or any combination of them, can be used to determine that a Plumbing or Drainage Solution complies with the Performance Requirements:

(a) Evidence to support that the use of a material or product, the design or the form of construction meets a Performance Requirement or a Deemed-to-Satisfy Provision as described in A2.2.

(b) Verification Methods such as—
   (i) the Verification Methods in the PCA; or
   (ii) such other Verification Methods as the authority having jurisdiction accepts for determining compliance with the Performance Requirements.

(c) Comparison with the Deemed-to-Satisfy Provisions.

(d) Expert Judgment.

A0.10 Relevant Performance Requirements

In order to comply with the provisions of A1.5 (to comply with Sections A to F inclusive) the following method must be used to determine the Performance Requirement or Performance Requirements relevant to the Alternative Solution:

(a) Identify the relevant Deemed-to-Satisfy Provision of each Section or Part that is to be the subject of the Alternative Solution.

(b) Identify the Performance Requirements from the same Sections or Parts that are relevant to the identified Deemed-to-Satisfy Provisions.

(c) Identify Performance Requirements from other Sections and Parts that are relevant to any aspects of the Alternative Solution proposed or that are affected by the application of the Deemed-to-Satisfy Provisions, that are the subject of the Alternative Solution.
PART A1  INTERPRETATION

A1.1 Definitions

If a word is not defined in the PCA, the meaning (if any) attributed to it under AS/NZS 3500.0 Glossary of Terms should be used unless the contrary intention appears.

**Accessible** means having features to enable use by people with a disability.

**Adequate** means adequate to achieve the particular *Objective* of the PCA.

**Administering body** means the body responsible for administering the *WaterMark Certification Scheme (WMCS)*.

**Alternative Solution** means a *Plumbing or Drainage Solution* which complies with the *Performance Requirements* other than by reason of satisfying the *Deemed-to-Satisfy Provisions*.

**Amenity** means an attribute which contributes to the health, physical independence, comfort and wellbeing of people.

**Approved disposal system** means a system for the disposal of sewage, sullage or stormwater approved by an authority having jurisdiction.

**Approved User** means a person (manufacturer) who entered into an *approved user* agreement with an Approved Certifier for use of the *WaterMark*.

**Assessment Method** means a method used for determining that a *Plumbing or Drainage Solution* complies with the *Performance Requirements*.

**Average recurrence interval** applied to rainfall, means the expected or average interval between exceedances of a given intensity.

**BCA** means the Building Code of Australia.

**Blockage** means an obstruction within a *drainage* system.

*(ACT, Building)*

**Certification mark** means the *WaterMark* trademark.

*(ACT, Class)*

*(ACT, Climate zone 3)*

*(ACT, Climate zone 4)*

**Deemed-to-Satisfy Provisions** means provisions which are deemed to satisfy the *Performance Requirements*.

**Drainage** means any sanitary *drainage*, liquid trade waste *drainage* or stormwater *drainage* system.

**Drinking water** means water intended primarily for human consumption but which has other domestic uses and which meets the guideline values of the National Water Quality Management Strategy - Australian Drinking Water Guidelines 6.

**Equivalent** means equivalent to the level of health, safety and amenity provided by the *Deemed-to-Satisfy Provisions*.
Expert Judgment means the judgment of a person who has the qualifications and experience to determine whether a Plumbing or Drainage Solution complies with the Performance Requirements.

(ACT, Fuel-burning equipment)

Functional Statement describes how the Plumbing or Drainage Solution achieves the Objective.

Heated water means water that has been intentionally heated. It is normally referred to as hot water or warm water.

JAS-ANZ means the Joint Accreditation System of Australia and New Zealand.

Loss means either: physical damage, financial loss or loss of amenity.

Network Utility Operator means a person who:

(a) Undertakes the piped distribution of drinking water or non-drinking water for supply; or
(b) Is the operator of a sewerage system or a stormwater drainage system.

(ACT, New Class 1 building)

Non-drinking water means water which is not drinking water.

(ACT, Non-urban land)

Objective means a statement contained in the PCA which is considered to reflect community expectations.

On-site wastewater management system means a system installed on premises that receives and/or treats wastewater generated on the premises and applies the resulting effluent to an approved disposal system or re-use system.

Overflow devices are devices that provide relief to a water service, a sanitary plumbing and drainage system or a stormwater system to avoid the likelihood of uncontrolled discharges.

Performance Requirement means a requirement which states the level of performance which a Plumbing or Drainage Solution must meet.

Plumbing means any water plumbing, roof plumbing, sanitary plumbing system or heating, ventilation and air-conditioning plumbing.

Plumbing or Drainage Solution means a solution which complies with the Performance Requirements and is—

(a) an Alternative Solution; or
(b) a solution which complies with the Deemed-to-Satisfy Provisions; or
(c) a combination of (a) and (b).
Point of connection—

(a) for a **heated water** service means the point where the water heater connects to the cold water service downstream of the isolation valve; and

(b) for sewage disposal means the point where the on-site **drainage** system connects to the **Network Utility Operator’s** sewerage system or to an **on-site wastewater management system**; and

(c) for stormwater disposal means the point where the on-site **drainage** system connects to the **Network Utility Operator’s** stormwater system or to an **approved disposal system**; and

(d) for a water service means the point where the service pipe within the premises connects to the **Network Utility Operator’s** property service or to an alternative water supply system.

**Product** means **plumbing** and **drainage** items within the scope of the PCA including but not limited to:

(a) Materials, fixtures and components used in a **plumbing** or **drainage** installation.

(b) Appliances and equipment connected to a **plumbing** or **drainage** system.

**Professional engineer** means a person who is—

(a) if legislation is applicable — a registered **professional engineer** in the relevant discipline who has appropriate experience and competence in the relevant field; or

(b) if legislation is not applicable—

(i) a Corporate Member of the Institution of Engineers, Australia; or

(ii) eligible to become a Corporate Member of the Institution of Engineers, Australia, and has appropriate experience and competence in the relevant field.

**Recognised certification body** means a person or organisation appropriately accredited by the **JAS-ANZ** or one that is accepted by the relevant authority having jurisdiction.

**Recognised credentials** means qualifications and experience in the area of **plumbing** and **drainage** in question recognised by the authority having jurisdiction.

**Recognised expert** means a person with qualifications and experience in the area of **plumbing** or **drainage** in question recognised by the authority having jurisdiction.

**Recognised testing laboratory** means a testing laboratory registered with the National Association of Testing Authorities and acceptable to the **WMCAB** as being competent to conduct type tests under the **WaterMark Certification Scheme**.

**(ACT, Renewable energy certificate)**

**Specification** means a **specification** that is approved by the **administering body**.

**(ACT, Solid fuel-burning equipment)**

**Verification Method** means a test, inspection, calculation or other method that determines whether a **Plumbing or Drainage Solution** complies with the relevant **Performance Requirement**.

**Warranty** means a statement by the manufacturer or supplier of a **product** that says that the **product** is suitable for use under specified conditions. The conditions may be limits on water pressure, water temperature or any other operating circumstance.

**NOTE:** The statement must be included with the product when sold and may be stamped onto the product, printed on the packaging, or included as part of the installation instructions.

**WaterMark** means the registered certification trademark (see **Figure G1.5.4.1**).
WaterMark Certificate of Conformity (WMCC) means a document issued by the WMCAB describing certified product(s) in accordance with the WaterMark Certification Scheme.

WaterMark Conformity Assessment Body (WMCAB) means a conformity assessment body (CAB) registered with and accredited by the JAS-ANZ to conduct evaluations leading to product certification and contracted with the administering body to WaterMark to issue the certification mark.

WaterMark Certification Scheme (WMCS) means the scheme which provides the method of demonstrating that plumbing and drainage products comply with the applicable specification through the WaterMark Certificate of Conformity.

WaterMark Product Database (WMPD) means a database maintained on the internet containing details of certified products including reference to the WaterMark Certificate of Conformity (WMCC).

Watertight means will not allow water to pass from the inside to the outside of the component or joint and vice versa.

(ACT, WELS standard)

A1.2 Adoption of Standards and other references

Where a Deemed-to-Satisfy Provision references a document, rule, specification or provision, that adoption does not include a provision—

(a) specifying or defining the respective rights, responsibilities or obligations as between themselves of any manufacturer, supplier or purchaser; or

(b) specifying the responsibilities of any trades person or other building operative, architect, engineer, authority, or other person or body; or

(c) requiring the submission for approval of any material, plumbing component, form or method of construction, to any person, authority or body other than a person or body empowered under State or Territory legislation to give that approval; or

(d) specifying that a material, plumbing component, form or method of construction must be submitted to any person, authority or body for expression of opinion; or

(e) permitting a departure from the PCA, rule, specification or provision at the sole discretion of the manufacturer or purchaser, or by arrangement or agreement between the manufacturer and purchaser.

A1.3 Referenced Standards, etc

(a) A reference in a Deemed-to-Satisfy Provision to a document under A1.2 refers to the edition or issue, together with any amendment listed in Table A1.3 and only so much as is relevant in the context in which the document is quoted.

(b) Any—
   (i) reference in a document listed in Table A1.3 (primary document) to another document (secondary document); and
   (ii) subsequent references to other documents in secondary documents and those other documents,

   is a reference to the secondary and other documents as they existed at the time of the primary document listed in Table A1.3

(c) The provisions of (b) do not apply if the secondary referenced document is also a primary referenced document.
(d) Where the PCA references a document under A1.2 which is subject to publication of a new edition or amendment not listed under Table A1.3, the new edition or amendment need not be complied with in order to comply with the Deemed-to-Satisfy Provisions.

A1.4 Differences between referenced documents and the Plumbing Code of Australia

The PCA overrules in any difference arising between it and any Standard, rule, specification or provision in a document listed in Table A1.3.

A1.5 Compliance with all Sections of the Plumbing Code of Australia

Subject to A1.6, plumbing and drainage systems must be so designed, constructed and installed that they comply with the relevant provisions of Sections A to F (inclusive) of the PCA.

A1.6 Application of the Plumbing Code of Australia to a particular State or Territory

For application within a particular State or Territory, the PCA comprises—

(a) Sections A to G (inclusive); and

(b) the variations, deletions and additions to Sections A to G applicable to that State or Territory specified in the relevant Appendix.

A1.7 Language

A reference to a water service, plumbing or drainage system, or product in the PCA is a reference to an entire installation, service, system or product or part of an installation, a service, system or product, as the case requires.

The Standards and other documents listed in Table A1.3 are referred to in the PCA.

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### Table A1.3

**SCHEDULE OF REFERENCED DOCUMENTS**

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<td>Design, installation and commissioning</td>
<td>E1.2</td>
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<td>Testing of products in contact with drinking water</td>
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<td>AS 4041</td>
<td>2006</td>
<td>Pressure Piping</td>
<td>E1.2</td>
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<td>Fire Sprinkler Systems - Piping - General</td>
<td>B4.2</td>
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<td>AS 4254</td>
<td>1995</td>
<td>Ductwork for air-handling systems in buildings</td>
<td>E1.2</td>
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<td>Amdt 2</td>
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<tr>
<td>AS 4426</td>
<td>1997</td>
<td>Thermal insulation of pipework, ductwork and equipment – selection, installation and finish</td>
<td>E1.2</td>
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<tr>
<td>AS 4508</td>
<td>1999</td>
<td>Thermal resistance of insulation for ductwork used in building air conditioning</td>
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### Table A1.3

**SCHEDULE OF REFERENCED DOCUMENTS**

<table>
<thead>
<tr>
<th>Document No.</th>
<th>Date</th>
<th>Title</th>
<th>PCA Clause</th>
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<td>AS 5200</td>
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<td>Part 000</td>
<td>2006</td>
<td>Part 000: Procedures for certification of plumbing and drainage products</td>
<td>A2.1</td>
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<td>AS 5601</td>
<td>2004</td>
<td>Gas Installations</td>
<td>E1.2</td>
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<td>BCA</td>
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<td>Volume One</td>
<td>2011</td>
<td>Class 2 to 9 Buildings</td>
<td>B4.2, D1.2, E1.2</td>
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<td>Volume Two</td>
<td>2011</td>
<td>Class 1 and Class 10 Buildings – Housing Provisions</td>
<td>D1.2, E1.2</td>
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<td>MP 78</td>
<td>1999</td>
<td>Manual for assessment of risks of plumbing products</td>
<td>G1.5</td>
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</table>
A2.1 Suitability of materials and products

(a) Every part of a plumbing or drainage installation must be constructed in an appropriate manner to achieve the requirements of the PCA, using materials and products that are fit for the purpose for which they are intended.

(b) Materials or products listed in Table A2.1 which are used in plumbing or drainage installations must be certified and authorised.

(c) Product Certification and Authorisation must meet the certification and authorisation procedures set out in Part G of the PCA - “Materials and Products Certification and Authorisation”.

(d) All materials and products intended for use in contact with drinking water must comply with AS/NZS 4020 and be certified and authorised in accordance with the PCA.

(e) Any new or innovative material or product must be assessed, certified and authorised, if required, in accordance with Part G of the PCA prior to their use in a plumbing or drainage installation.

(f) A material or product exempted from certification under the PCA is authorised for use in a plumbing and drainage installation if—

(i) it is certified as complying with the appropriate Australian Standard(s); or

(ii) if an appropriate Australian Standard does not exist, other evidence of suitability in accordance with A2.2.

(g) A material or product used in a fire-fighting water service is authorised for use if it is certified by a recognised body as complying with the relevant Australian Standard(s) for the specific application.

(h) A material or product used in a stormwater installation is authorised for use if it is certified by a recognised body as complying with Section 2 of AS/NZS 3500.3 in accordance with A2.2.

A2.2 Evidence of suitability

(a) Evidence to support that the use of a material, product, the design, form of construction or installation meets a Performance Requirement or a Deemed-to-Satisfy Provision may be in the form of one or a combination of the following:

(i) A current certification mark issued in compliance with the requirements of Part G of the PCA.

(ii) A report issued by a Recognised Expert showing that the material, product, the design, construction and installation has been submitted to the tests listed in a report, and setting out the results of those tests and any other relevant information that demonstrates its suitability for use in the plumbing or drainage installation.

(iii) A certificate from a professional engineer or other appropriately qualified person which—

(A) certifies that a material, product, design, form of construction or installation complies with the requirements of the PCA; and
(B) sets out the basis on which certification is given and the extent to which relevant specifications, rules, codes of practice or other publications have been relied upon.

(v) Any other form of documentary evidence that correctly describes the properties and performance of the material, form of construction or installation and adequately demonstrates its suitability for use in the plumbing or drainage installation.

(b) Any copy of documentary evidence submitted must be a complete copy of the original report or document.

The materials and products listed in Table A2.1 require authorisation.

<table>
<thead>
<tr>
<th>Product Category</th>
<th>Product Type</th>
<th>Minimum certification level</th>
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<tr>
<td><strong>APPLIANCES AND FIXTURES</strong></td>
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<td>Appliances and fixtures</td>
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<td>Water filters and water treatment appliances</td>
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<td>Sanitary Fixtures</td>
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<td></td>
<td>Water closet pans and suites</td>
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<td>Cisterns</td>
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<td>Exception</td>
<td>Beverage dispensers and ice makers</td>
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<td><strong>Water Heaters and Water Heated Storage Tanks</strong></td>
<td>General</td>
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<td><strong>NON PRESSURISED PIPES, FITTINGS AND ACCESSORIES</strong></td>
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<td>Non pressurised pipes, fittings and accessories</td>
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<td>Exception</td>
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<td>Vent valves - General</td>
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<td>2</td>
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<td>Pipes and Fittings (non pressure)</td>
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<td>Non-Return Reflux valves for Sewerage</td>
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**Product Category** | **Product Type** | **Minimum certification level**
--- | --- | ---
PRESSURISED PIPES, FITTINGS AND ACCESSORIES
Pressurised pipes, fittings and accessories | General | 1
Exception | Shower heads | 2
MATERIAL IN CONTACT WITH DRINKING WATER
Material in contact with *drinking water* | General | 1
Water linings | General | 1
WATER SUPPLY VALVES AND VALVE ACCESSORIES
Water supply valves and valve accessories | General | 1
Backflow Prevention Devices | General | 1
Control Valves and Taps | General | 1
Valves for Pressure and Temperature | General | 1
Valve and Tap Accessories | General | 1
Fire Protection | General | 1
GREYWATER DIVERSION DEVICES (Gravity or pumped discharge)
Greywater diversion devices (gravity or pumped discharge) | General | 2

NOTES:

1. For a comprehensive list of *product* types and applications, *specifications* and exemptions, see AS 5200.000.
2. All materials in contact with *drinking water* must comply with AS/NZS 4020 (Minimum Certification Level 1).
3. Where a *product* category and the *product* type have different minimum certification levels, the certification level of the *product* type is also nominated.
4. For *products* not listed in Table A2.1 or AS 5200.000, the minimum certification level shall be determined in accordance with MP 78 and Part G1.
5. For *products* which have been authorised but which are not listed, refer to the authority having jurisdiction.
WATER SERVICES

B1 Cold Water Services
B2 Heated Water Services
B3 Non-Drinking Water Services
B4 Fire-Fighting Water Services
SECTION B WATER SERVICES

Part B1  COLD WATER SERVICES

B1.0 Scope
Objective BO1
Functional Statements BF1.1 - BF1.2
Performance Requirements BP1.1 - BP1.4
Verification Method BV1
B1.1 Deemed-to-Satisfy
B1.2 Deemed-to-Satisfy Provisions

Part B2  HEATED WATER SERVICES

B2.0 Scope
Objective BO2
Functional Statements BF2.1 - BF2.2
Performance Requirements BP2.1 - BP2.7
Verification Method BV2
B2.1 Deemed-to-Satisfy
B2.2 Deemed-to-Satisfy Provisions

Part B3  NON-DRINKING WATER SERVICES

B3.0 Scope
Objective BO3
Functional Statements BF3.1 - BF3.2
Performance Requirements BP3.1 - BP3.5
Verification Method BV3
B3.1 Deemed-to-Satisfy
B3.2 Deemed-to-Satisfy Provisions

Part B4  FIRE-FIGHTING WATER SERVICES

B4.0 Scope
Objective BO4
Functional Statement BF4.1
Performance Requirements BP4.1 - BP4.2
Verification Method BV4
B4.1 Deemed-to-Satisfy
B4.2 Deemed-to-Satisfy Provisions
PART B1  COLD WATER SERVICES

B1.0 Scope
This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a cold water service of a property that is connected to the drinking water supply, from the point of connection to the points of discharge.

OBJECTIVE

BO1
The Objective of this Part is to—
(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a cold water installation; and
(b) ensure that a cold water installation (including an installation provided for use by people with a disability) is suitable; and
(c) conserve water and energy; and
(d) safeguard the environment; and
(e) safeguard public and private infrastructure; and
(f) ensure that a cold water installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENTS

BF1.1
Sanitary fixtures, sanitary appliances and supply outlets provided with drinking water must have safe and adequate piped cold water supply.

BF1.2
The cold water service must be conveyed through plumbing installations in a way that minimises any adverse impact on building occupants, the Network Utility Operator’s infrastructure, property and the environment.
PERFORMANCE REQUIREMENTS

BP1.1 Cold water service
Installations intended to supply cold water for human consumption, food preparation, food utensil washing or personal hygiene must be connected to a drinking water supply.

BP1.2 Cold water service installation
A cold water service must be designed, constructed and installed in such a manner as to—
(a) avoid the likelihood of contamination of drinking water within both the water service and the Network Utility Operator’s supply; and
(b) provide water to fixtures and appliances at flow rates and pressures which are adequate for the correct functioning of those fixtures and appliances under normal conditions and in a manner that does not create undue noise; and
(c) avoid the likelihood of leakage or failure including uncontrolled discharges; and
(d) facilitate the efficient use of drinking water; and
(e) allow adequate access for maintenance of mechanical components and operational controls; and
(f) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance, where required.

BP1.3 People with a disability
Facilities provided for people with a disability must have cold water supply taps or other operational controls that are accessible and adequate for their use.

BP1.4 Materials and products
Materials and products used in cold water services must meet the requirements of Part A2.

VERIFICATION METHOD

BV1 Verification Method
Compliance with BP1.2 is verified either—
(a) by calculation by persons or organisations with recognised credentials in the design or testing of water service systems; or
(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a recognised certification body.
Deemed-to-Satisfy Provisions

B1.1 Deemed-to-Satisfy

Performance Requirements BP1.1 to BP1.3 are satisfied by complying with B1.2.

B1.2 Deemed-to-Satisfy Provisions

ACT B1.2(a)
NSW B1.2(a)
Qld B1.2(a)
SA B1.2(a)
WA B1.2(a)

(a) The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with AS/NZS 3500.1 or Section 2 of AS/NZS 3500.5 as appropriate.

(b) Cold water supply taps or other operational controls provided for people with a disability in sanitary facilities must be in accordance with—

(i) AS 1428.1 (2001) and AS 1428.2 for all BCA Class 9b and Class 10 public transport buildings; and

(ii) AS 1428.1 (2009) for all other buildings.

SA B1.2(c)

Vic B1.2(c), (d)
PART B2

HEATED WATER SERVICES

B2.0 Scope

This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a heated water service of a property that is connected to the drinking water supply, from the point of connection to the points of discharge.

OBJECTIVE

BO2

The Objective of this Part is to—

Old BO2(a)

(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a heated water installation; and

(b) ensure that a heated water installation (including an installation provided for use by people with a disability) is suitable; and

(c) conserve water and energy; and

(d) safeguard the environment; and

(e) safeguard public and private infrastructure; and

(f) ensure that a heated water installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENTS

BF2.1

Sanitary fixtures, sanitary appliances and supply outlets provided with heated water must have a safe and adequate piped heated water supply.

BF2.2

The heated water supply must be conveyed through plumbing installations in a way that minimises any adverse impact on building occupants, the Network Utility Operator’s infrastructure, property and the environment.
BP2.1 Heated water service

Installations intended to supply *heated water* for human consumption, food preparation, food utensil washing or personal hygiene must be connected to a *drinking water* supply.

BP2.2 Heated water temperatures

*Heated water* supplied by a new *heated water* service must be delivered to fixtures and appliances used primarily for personal hygiene at a temperature which reduces the likelihood of scalding.

BP2.3 Heated water service installation

A *heated water* service must be designed, constructed and installed in such a manner as to—

(a) avoid the likelihood of contamination of *drinking water* within both the on-site installation and the supply; and

(b) provide *heated water* to fixtures and appliances at flow rates and temperatures which are *adequate* for the correct functioning of those fixtures and appliances under normal conditions and in a manner that does not create undue noise; and

(c) avoid the likelihood of leakage or failure, including uncontrolled discharges; and

(d) use energy efficiently and minimise wastage of water; and

(e) allow *adequate* access for maintenance of mechanical components and operational controls; and

(f) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance, where required.

BP2.4 Pressure Vessels

Pressure vessels used for producing and/or storing *heated water* must be provided with safety devices which—

(a) relieve excessive pressure during both normal and abnormal conditions; and

(b) limit temperatures to avoid the likelihood of flash steam production in the event of rupture.

BP2.5 Heated water storage

*Heated water* must be stored and delivered under conditions which avoid the likelihood of the growth of Legionella bacteria.

BP2.6 People with a disability

Where *heated water* is supplied in facilities provided for people with a disability, supply taps or other operational controls must be *accessible* and *adequate* for their use.

BP2.7 Materials and Products

Materials and *products* used in *heated water* services must meet the requirements of *Part A2*. 
Compliance with **BP2.1** to **BP2.5** is verified either—

(a) by calculation and certification by persons or organisations with *recognised credentials* in the design or testing of *heated water* service systems; or

(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised certification body*.
Deemed-to-Satisfy Provisions

B2.1 Deemed-to-Satisfy

*Performance Requirements BP2.1 to BP2.6* are satisfied by complying with **B2.2**.

B2.2 Deemed-to-Satisfy Provisions

**ACT B2.2(a)**

**NSW B2.2(a)**

**Qld B2.2(a)**

**SA B2.2(a)**

**Vic B2.2(a)**

**WA B2.2(a)**

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a *heated water* service must be in accordance with AS/NZS 3500.4 or Section 3 of AS/NZS 3500.5 as appropriate.

(b) *Heated water* supply taps or other operational controls provided for people with a disability in sanitary facilities must be in accordance with—

(i) AS 1428.1 (2001) and AS 1428.2 for all *BCA* Class 9b and Class 10 public transport buildings; and

(ii) AS 1428.1(2009) for all other buildings.
PART B3  NON-DRINKING WATER SERVICES

B3.0 Scope

This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a non-drinking water service of a property from the point of connection to the points of discharge.

OBJECTIVE

BO3

The Objective of this Part is to—

(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a non-drinking water installation; and

(b) ensure that a non-drinking water installation (including an installation provided for use by people with a disability) is suitable; and

(c) conserve water and energy; and

(d) safeguard the environment; and

(e) safeguard public and private infrastructure; and

(f) ensure that a non-drinking water installation throughout its serviceable life will continue to satisfy the requirements of Objectives (a) to (e).

FUNCTIONAL STATEMENTS

BF3.1

Sanitary fixtures, sanitary appliances and supply outlets provided with non-drinking water must be adequate.

BF3.2

Non-drinking water must be supplied through plumbing installations in a way that avoids the likelihood of inadvertent contamination of any drinking water service, minimise any adverse impact on building occupants, the Network Utility Operator’s infrastructure, property and the environment.
PERFORMANCE REQUIREMENTS

BP3.1 Non-drinking water service
(a) A non-drinking water supply must only be connected to outlets clearly identified for non-drinking use and must be limited to the uses specified in B3.2(a).
(b) A non-drinking water service is not to have a cross connection with a drinking water service.

BP3.2 Identification
Pipe outlets, fittings, storage and holding tanks that form part of a non-drinking water service must be clearly identified.

BP3.3 Non-drinking water service installations
A non-drinking water service must be designed, constructed and installed in such a manner as to—
(a) avoid the likelihood of contamination of drinking water; and
(b) provide non-drinking water to fixtures and appliances at flow rates and pressures which are adequate for the correct functioning of those fixtures and appliances under normal conditions and, in a manner that does not create undue noise; and
(c) avoid the likelihood of leakage or failure including uncontrolled discharges; and
(d) allow adequate access for maintenance of mechanical components and operational controls; and
(e) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance.

BP3.4 People with a disability
Non-drinking water services provided for people with a disability must have taps or other operational controls that are accessible, convenient and adequate for their use.

BP3.5 Materials and Products
Materials and products used in a non-drinking water service must meet the requirements of Part A2.

VERIFICATION METHOD

BV3
Compliance with BP3.1 to BP3.3 is verified either—
(a) by calculation and certification by persons or organisations with recognised credentials in the design or testing of non-drinking water service systems; or
(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a recognised certification body.
**PART B3  NON-DRINKING WATER SERVICES**

*Deemed-to-Satisfy Provisions*

**B3.1 Deemed-to-Satisfy**

*Performance Requirements BP3.1* to *BP3.4* are satisfied by complying with *B3.2*.

**B3.2 Deemed-to-Satisfy Provisions**

(a) The distribution of *non-drinking water* must be limited to the following uses—

(i) garden watering; and
(ii) toilet and urinal flushing; and
(iii) clothes washing; and
(iv) vehicle washing; and
(v) path/wall washing; and
(vi) industrial purposes; and
(vii) fire-fighting; and
(viii) dust suppression; and.
(ix) any other use authorised by the authority having jurisdiction.

*Qld B3.2(a)(x), (xi), (xii)*

*ACT B3.2(b)*

*NSW B3.2(b)*

*Qld B3.2(b)*

(b) The design, construction, installation, replacement, repair, alteration and maintenance of a *non-drinking water* service must be in accordance with AS/NZS 3500.1 or Section 2 of AS/NZS 3500.5 as appropriate.

(c) The design, construction, installation, replacement, repair, alteration and maintenance of a *non-drinking water* fire service must be in accordance with *Part B4*.

*Qld B3.101, Qld B3.102*
PART B4  FIRE–FIGHTING WATER SERVICES

This Part sets out requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a fire-fighting water service from the point of connection or other acceptable source(s) of supply to the fire-fighting equipment, including hydrant, hose reel, sprinkler services and wall drencher systems.

OBJECTIVE

The Objective of this Part is to—

(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a fire-fighting water installation; and

(b) ensure that a fire-fighting water installation (including an installation provided for use by people with a disability) is suitable; and

(c) conserve water and energy; and

(d) safeguard the environment; and

(e) safeguard public and private infrastructure; and

(f) ensure that a fire-fighting water installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENT

BF4.1

Fire-fighting equipment must be provided with adequate water for its intended purpose.
PERFORMANCE REQUIREMENTS

BP4.1 Fire-fighting water service
A fire-fighting water service must be designed, constructed and installed in a manner which—

(a) avoids the likelihood of contamination of drinking water; and

(b) provides water to the fire-fighting equipment at a flow rate and pressure that is adequate for the correct functioning of the equipment; and

(c) avoids the likelihood of leakage or failure including uncontrolled discharges; and

(d) provides adequate access for maintenance of mechanical components and operational controls; and

(e) allows the system and backflow prevention devices to be isolated for testing and maintenance.

BP4.2 Materials and Products
Materials and products used in fire-fighting water services must meet the requirements of Part A2.

VERIFICATION METHOD

BV4
Verification of fire-fighting water service performance may be conducted by a qualified third party certifier and/or the relevant fire-fighting authority having jurisdiction.
Deemed-to-Satisfy Provisions

B4.1 Deemed-to-Satisfy

Performance Requirement BP4.1 is satisfied by complying with B4.2.

B4.2 Deemed-to-Satisfy Provisions

(a) Fire-fighting water services for buildings and structures to which the BCA applies must comply with the requirements of Part E of Volume One of the BCA.

(b) The installation of a fire-fighting water service must be in accordance with AS/NZS 3500.1.

(c) The installation of an automatic fire sprinkler system must be in accordance with AS 2118.1, AS 2118.4, AS 2118.5, AS 2118.6, and AS 2118.9 as appropriate.

(d) Fire hydrant installations must be in accordance with AS 2419.1.

(e) Installation of fire hose reel systems must be in accordance with AS 2441.

(f) Piping for fire sprinkler systems must comply with AS 4118.2.1.
SANITARY PLUMBING AND DRAINAGE SYSTEMS

C1 Sanitary Plumbing Systems
C2 Sanitary Drainage Systems
SECTION C CONTENTS

SECTION C SANITARY PLUMBING AND DRAINAGE SYSTEMS

Part C1  Sanitary Plumbing Systems

C1.0 Scope
Objective CO1
Functional Statement CF1.1
Performance Requirements CP1.1 - CP1.3
Verification Method CV1
C1.1 Deemed-to-Satisfy
C1.2 Deemed-to-Satisfy Provisions

Part C2  Sanitary Drainage Systems

C2.0 Scope
Objective CO2
Functional Statement CF2.1
Performance Requirements CP2.1 - CP2.3
Verification Method CV2
C2.1 Deemed-to-Satisfy
C2.2 Deemed-to-Satisfy Provisions
PART C1  SANITARY PLUMBING SYSTEMS

C1.0  SCOPE

This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a sanitary plumbing system of a property from sanitary fixtures and appliances to an approved disposal system.

OBJECTIVE

CO1

The Objective of this Part is to—

(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a sanitary plumbing installation; and

(b) ensure that a sanitary plumbing installation (including an installation provided for use by people with a disability) is suitable; and

(c) conserve water and energy; and

(d) safeguard the environment; and

(e) safeguard public and private infrastructure; and

(f) ensure that a sanitary plumbing installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENT

CF1.1

Sanitary fixtures and sanitary appliances using water-borne waste disposal must be provided with an adequate disposal system that does not impact adversely on occupants of the premises, property, the environment or the Network Utility Operator’s infrastructure.

PERFORMANCE REQUIREMENTS

CP1.1  Sanitary plumbing systems

A sanitary plumbing system using water-borne waste disposal must be designed, constructed and installed in such a manner as to—
(a) convey sewage or sullage to a sanitary drainage system or an approved disposal system and in a manner that does not create undue noise; and
(b) avoid the likelihood of loss of amenity due to blockage and leakage; and
(c) avoid the likelihood of the ingress of inappropriate water, sewage, sullage, foul air and gases from the system into the building; and
(d) provide adequate access for maintenance of mechanical components, operational controls and for clearing blockages; and
(e) avoid the likelihood of damage from superimposed loads, ground movement or root penetration; and
(f) avoid the likelihood of ingress of surface water, sub-surface water or stormwater into the system; and
(g) provide for the effective and efficient use of water; and
(h) provide adequate ventilation to avoid hydraulic load imbalance.

CP1.2 People with a disability

Facilities provided for people with a disability must have sanitary fixtures that are accessible and adequate for their use.

CP1.3 Materials and Products

Materials and products used in sanitary plumbing systems must meet the requirements of Part A2.

VERIFICATION METHOD

CV1

Compliance with CP1.1 is verified either—
(a) by calculation and certification by persons or organisations with recognised credentials in the design or testing of sanitary plumbing and drainage systems; or
(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a recognised certification body.
C1.1 Deemed-to-Satisfy

Performance Requirements CP1.1 and CP1.2 are satisfied by complying with C1.2.

C1.2 Deemed-to-Satisfy Provisions

ACT C1.2(a)
NSW C1.2(a)
Qld C1.2(a)
SA C1.2(a)
Vic C1.2(a)

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary plumbing system must be in accordance with AS/NZS 3500.2 or Section 4 of AS/NZS 3500.5 as appropriate.

(b) Sanitary fixtures provided for people with a disability must be in accordance with—

(i) AS 1428.1 (2001) and AS 1428.2 for all BCA Class 9b and Class 10 public transport buildings; and

(ii) AS 1428.1 (2009) for all other buildings.

WA C1.2(c)
PART C2 SANITARY DRAINAGE SYSTEMS

C2.0 SCOPE

This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a sanitary drainage system of a property from sanitary fixtures and appliances to an approved disposal system.

OBJECTIVE

CO2

The Objective of this Part is to—

(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a sanitary drainage installation; and

(b) ensure that a sanitary drainage installation (including an installation provided for use by people with a disability) is suitable; and

(c) conserve water and energy; and

(d) safeguard the environment; and

(e) safeguard public and private infrastructure; and

(f) ensure that a sanitary drainage installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENT

CF2.1

Sanitary fixtures and sanitary appliances using water-borne waste disposal must be provided with an adequate disposal system that does not impact adversely on occupants of the premises, property, the environment or the Network Utility Operator’s infrastructure.

PERFORMANCE REQUIREMENTS

CP2.1 Sanitary drainage system

A sanitary drainage system using water-borne waste disposal must be designed constructed and installed in such a manner as to—
(a) convey sewage from a sanitary plumbing system to an approved disposal system and in a manner that does not create undue noise; and
(b) avoid the likelihood of blockage and leakage; and
(c) avoid the likelihood of root penetration; and
(d) provide adequate access for maintenance and for clearing blockages; and
(e) provide ventilation to avoid the likelihood of foul air and gases accumulating in the sanitary drainage and sewerage systems; and
(f) avoid the likelihood of damage from superimposed loads or ground movement; and
(g) avoid the likelihood of ingress of water, foul air and gases from the system into buildings; and
(h) protect against internal contamination; and
(i) avoid the likelihood of ingress of surface water, sub-surface water and stormwater into the sewerage system; and
(j) avoid the likelihood of uncontrolled discharge; and
(k) avoid the likelihood of damage to existing buildings or site works; and
(l) avoid the likelihood of damage to the sewerage system or other approved disposal system.

**CP2.2 No point of connection**

*Vic CP2.2*

Where a point of connection to a Network Utility Operator’s sewerage system is not available, an on-site wastewater management system must be designed, installed and maintained in accordance with Part F1.

**CP2.3 Materials and Products**

Materials and products used in sanitary drainage systems must meet the requirements of Part A2.

**VERIFICATION METHOD**

**CV2**

Compliance with CP2.1 is verified either—

(a) by calculation and certification by persons or organisations with recognised credentials in the design or testing of sanitary plumbing and drainage systems; or

(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a recognised certification body.
C2.1 Deemed-to-Satisfy

Performance Requirements CP2.1 and CP2.2 are satisfied by complying with C2.2.

C2.2 Deemed-to-Satisfy Provisions

ACT C2.2(a)
NSW C2.2(a)
NT C2.2(a)
Qld C2.2(a)
Vic C2.2(a)
WA C2.2(a)

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary drainage system must be in accordance with AS/NZS 3500.2 or Section 4 of AS/NZS 3500.5 as appropriate.

(b) Where there is no point of connection to a Network Utility Operator’s sewerage system, the design, construction, installation, replacement, repair, alteration and maintenance of a wastewater treatment system must be in accordance with AS/NZS 1546.1, AS/NZS 1546.2, AS/NZS 1546.3 or AS/NZS 1547 as appropriate.

ACT C2.2(c), (d), (e), (f)
Vic C2.2(c), (d), Vic C2.101
WA C2.2(c)
STORMWATER DRAINAGE SYSTEMS

D1  Roof Drainage Systems

D2  Surface and Subsurface Drainage Systems
## SECTION D STORMWATER DRAINAGE SYSTEMS

### Part D1  Roof Drainage Systems
- D1.0  Scope
- Objective DO1
- Functional Statement DF1.1
- Performance Requirements DP1.1 - DP1.5
- Verification Method DV1
- D1.1 Deemed-to-Satisfy
- D1.2 Deemed-to-Satisfy Provisions

### Part D2  Surface and Subsurface Drainage Systems
- D2.0  Scope
- Objective DO2
- Functional Statement DF2.1
- Performance Requirements DP2.1 - DP2.4
- Verification Method DV2
- D2.1 Deemed-to-Satisfy
- D2.2 Deemed-to-Satisfy Provisions
D1.0 Scope

This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a roof drainage system.

OBJECTIVE

DO1

The Objective of this Part is to—
(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a roof drainage installation; and
(b) ensure that a roof drainage installation is adequate; and
(c) conserve water and energy; and
(d) safeguard the environment; and
(e) safeguard public and private infrastructure; and
(f) ensure that a roof drainage installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENT

DF1.1

Buildings are to be provided with a roof drainage installation constructed to provide protection for people, property and the environment from the adverse effects of stormwater.
PERFORMANCE REQUIREMENTS

DP1.1 Roof drainage systems

Roof drainage systems must dispose of stormwater flows from rainfall events having an average recurrence interval appropriate to the importance of the building and the severity of potential damage to property, loss of amenity, illness or injury that would result from the failure of such a system.

DP1.2 Overflow devices or measures

The roof drainage system must be designed, installed and maintained to dispose of stormwater flows due to extreme rainfall events by the installation and maintenance of overflow devices or measures of adequate capacity.

DP1.3 Watertightness

All internal roof drainage components must be watertight.

DP1.4 Roof drainage installation

Roof drainage installations must be designed, constructed and installed in such a manner as to—
(a) convey stormwater to a point of connection; and
(b) avoid the likelihood of loss of amenity due to blockages and leakage; and
(c) avoid the likelihood of foul air and gases accumulating in the roof drainage system; and
(d) avoid the likelihood of loss to buildings and property; and
(e) avoid the likelihood of uncontrolled discharges; and
(f) provide adequate access for maintenance and clearing of blockages.

DP1.5 Materials and Products

Materials and products used in stormwater drainage systems must meet the requirements of Part A2.

VERIFICATION METHOD

DV1

Compliance with DP1.1 to DP1.4 is verified either—
(a) by calculation and certification by persons or organisations with recognised credentials in the design or testing of stormwater drainage systems; or
(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a recognised certification body.
PART D1 ROOF DRAINAGE SYSTEMS

Deemed-to-Satisfy Provisions

D1.1 Deemed-to-Satisfy

Performance Requirements DP1.1 to DP1.4 are satisfied by complying with D1.2.

D1.2 Deemed-to-Satisfy Provisions

Vic D1.2(a)

The design, construction, installation, replacement, repair, alteration and maintenance of a roof drainage system must be in accordance with AS/NZS 3500.3 or for BCA Class 1 and 10 buildings, comply with the Deemed-to-Satisfy Provisions of Parts 3.1.2 and 3.5.2 of Volume Two of the BCA.
PART D2  SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

ACT D2
NSW D2
NT D2
Qld D2
SA D2
WA D2

D2.0 Scope

This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a surface drainage system and subsurface drainage system to the point of connection.

OBJECTIVE

DO2

The Objective of this Part is to—
(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a stormwater drainage installation; and
(b) ensure that a stormwater drainage installation is adequate; and
(c) conserve water and energy; and
(d) safeguard the environment; and
(e) safeguard public and private infrastructure; and
(f) ensure that a stormwater drainage installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENT

DF2.1

Buildings and their surroundings are to be provided with a surface drainage and subsurface drainage installation and be constructed in such a manner as to provide protection for people, property and the environment from the adverse effects of stormwater.
PERFORMANCE REQUIREMENTS

DP2.1 Surface drainage systems
Surface drainage systems must dispose of stormwater flows from rainfall events having an average recurrence interval appropriate to the importance of the site and the severity of potential damage to property, loss of amenity, illness or injury that would result from the failure of such a system.

DP2.2 Subsurface drainage systems
Subsoil drainage systems must remove excess groundwater and reduce soil moisture levels without causing loss by inappropriately changing soil moisture conditions.

DP2.3 Surface drainage installation
Surface drainage installations must be designed, constructed and installed in such a manner as to—
(a) convey stormwater to a point of connection; and
(b) avoid the likelihood of blockages; and
(c) avoid the likelihood of leakage and penetration by roots; and
(d) provide adequate access for maintenance and clearing of blockages; and
(e) avoid the likelihood of damage to the Network Utility Operator’s drainage system; and
(f) avoid the likelihood of damage from superimposed loads or ground movements; and
(g) avoid the likelihood of ingress of sewage and/or liquid trade waste; and
(h) avoid the likelihood of ingress of surface water and stormwater into a sanitary drainage system; and
(i) avoid the likelihood of foul air and gases accumulating in the stormwater system; and
(j) avoid the likelihood of loss to buildings or property; and
(k) avoid the likelihood of uncontrolled discharge.

DP2.4 Materials and Products
Materials and products used in stormwater drainage systems must meet the requirements of Part A2.

VERIFICATION METHOD

DV2
Compliance with DP2.1 to DP2.3 is verified either—
(a) by calculation and certification by persons or organisations with recognised credentials in the design or testing of stormwater drainage systems; or
(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a recognised certification body.
Deemed-to-Satisfy Provisions

D2.1  Deemed-to-Satisfy

Performance Requirements DP2.1 to DP2.3 are satisfied by complying with D2.2.

D2.2  Deemed-to-Satisfy Provisions

The design, construction, installation, replacement, repair, alteration and maintenance of a stormwater drainage system must be in accordance with AS/NZS 3500.3.
SECTION E

HEATING, VENTILATION AND AIR-CONDITIONING

E1 Heating, Ventilation and Air-Conditioning Systems
SECTION E CONTENTS

SECTION E HEATING, VENTILATION AND AIR-CONDITIONING

Part E1  Heating, Ventilation and Air-Conditioning Systems

- E1.0 Scope
- Objective EO1
- Functional Statements EF1.1 - EF1.2
- Performance Requirements EP1.1 - EP1.2
- Verification Method EV1
- E1.1 Deemed-to-Satisfy
- E1.2 Deemed-to-Satisfy Provisions
E1.0 Scope
This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of mechanical heating, cooling and ventilation systems.

OBJECTIVE

EO1
The Objective of this Part is to—

(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a heating, ventilation or air-conditioning installation; and

(b) ensure that a heating, ventilation or air-conditioning installation (including an installation provided for use by people with a disability) is suitable; and

(c) conserve water and energy; and

(d) safeguard the environment; and

(e) safeguard public and private infrastructure; and

(f) ensure that a heating, ventilation or air-conditioning installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENTS

EF1.1
Mechanical services, plant and equipment used for heating, cooling and/or ventilation of a building must be adequate.
EF1.2

A building’s heating, cooling and/or ventilation system installation and maintenance must support energy efficient outcomes and minimise any adverse impact on building occupants or occupants of adjoining places, the *Network Utility Operator’s* infrastructure, property and the environment.

**PERFORMANCE REQUIREMENTS**

**EP1.1**

Mechanical services, plant and equipment for heating, cooling and/or ventilation must be designed constructed, installed and maintained in such a manner as to—

(a) avoid the likelihood of harmful microbial growth; and

(b) avoid the likelihood of damage to property and *loss of amenity* to the building occupants; and

(c) be efficient in the use of energy and water; and

(d) provide *adequate* access for maintenance.

**EP1.2 Materials and Products**

Materials and *products* used in mechanical heating, cooling and/or ventilation systems must meet the requirements of *Part A2*.

**VERIFICATION METHOD**

**EV1**

Compliance with *EP1.1* is verified either:

(a) by calculation and certification by persons or organisations with *recognised credentials* in the testing of heating, ventilation and air conditioning systems; or

(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised certification body*. 
PART E1

HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

Deemed-to-Satisfy Provisions

E1.1 Deemed-to-Satisfy

Performance Requirement EP1.1 is satisfied by complying with E1.2.

E1.2 Deemed-to-Satisfy Provisions

(a) Mechanical ventilation and air-conditioning systems for buildings and structures to which the BCA applies must comply with the requirements of the relevant Parts of the BCA.

(b) The design, construction, installation, replacement, repair, alteration and maintenance of mechanical ventilation and air-conditioning equipment systems must be in accordance with AS/NZS 1200, AS 1324.1, AS 1345, AS 1668.1, AS 1668.2, AS/NZS 3500.1, AS/NZS 3500.2, AS/NZS 3500.4, AS 4254, AS 4426, AS 4508 and AS 5601 as appropriate.

(c) The design, construction, installation, replacement, repair, alteration and maintenance of pressure equipment and piping must be in accordance with AS/NZS 1200, AS 1271, AS 1358 and AS 4041.

(d) The design, construction, installation, replacement, repair, alteration and maintenance of copper piping for air-conditioning and refrigeration must be in accordance with AS/NZS 1571.

(e) Microbial (Legionella bacteria) control must be carried out in accordance with AS/NZS 3666.1, AS/NZS 3666.2 and AS/NZS 3666.3 as appropriate.

Vic E1.2(f), (g) and (h)
ON-SITE WASTEWATER SYSTEMS

F1 On-site Wastewater Management Systems

F2 On-site Liquid Trade Waste Systems
SECTION F ON-SITE WASTEWATER SYSTEMS

Part F1 On-site Wastewater Management Systems
F1.0 Scope
Objective FO1
Functional Statement FF1.1
Performance Requirements FP1.1 - FP1.6
Verification Method FV1
F1.1 Deemed-to-Satisfy
F1.2 Deemed-to-Satisfy Provisions

Part F2 On-site Liquid Trade Waste Systems
F2.0 Scope
Objective FO2
Functional Statements FF2.1 - FF2.2
Performance Requirements FP2.1 - FP2.5
Verification Method FV2
F2.1 Deemed-to-Satisfy
F2.2 Deemed-to-Satisfy Provisions
PART F1 ON-SITE WASTEWATER MANAGEMENT SYSTEMS

ACT F1
NSW F1
NT F1
Qld F1
SA F1
WA F1

F1.0 Scope
This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of an on-site wastewater management system.

OBJECTIVE

FO1
The Objective of this Part is to—
(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of an on-site wastewater management system installation; and
(b) ensure that an on-site wastewater management system installation (including an installation provided for use by people with a disability) is suitable; and
(c) conserve water and energy; and
(d) safeguard the environment; and
(e) safeguard public and private infrastructure; and
(f) ensure that an on-site wastewater management system installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENT

FF1.1
On-site wastewater management systems must collect, contain, treat and assimilate and process domestic-wastewater, human excreta, or both so that public health and environmental standards required by the relevant authority having jurisdiction are achieved.
PERFORMANCE REQUIREMENTS

FP1.1

On-site wastewater management systems must be designed, constructed, installed and maintained in such a manner as to—

(a) protect public health by ensuring that—
   (i) all discharges comply with the relevant requirements of the authority having jurisdiction; and
   (ii) risks associated with the discharge of treated wastewater and/or the end product from a composting toilet to the environment are minimised; and

(b) protect the environment by ensuring that—
   (i) environmental quality objectives set by the relevant authority having jurisdiction are attained; and
   (ii) surface and ground water are not polluted; and
   (iii) soil productivity is maintained or enhanced; and
   (iv) adverse cumulative environmental effects comply with the relevant environmental requirements; and

(c) minimise the impacts on and maintain and enhance community amenity by ensuring that—
   (i) on-site wastewater management systems are managed so as to achieve sustainable long term performance; and
   (ii) the on-site wastewater management system design and its implementation contribute to improving and sustaining aesthetic values within individual properties and groups of properties; and
   (iii) the requirements of any community resource utilisation program for the reuse of resources within wastewater are met; and

(d) meet the requirements of the receiving Network Utility Operator for the acceptance of wastewater to sewers, as appropriate.

FP1.2

Wastewater must be discharged according to the requirements and agreement of the relevant authority having jurisdiction.

FP1.3

Wastewater must be conveyed to an on-site wastewater management system in a way that—

(a) transfers wastes safely and hygienically; and
(b) avoids the likelihood of blockage and leakage; and
(c) avoids the likelihood of foul air and gases entering buildings; and
(d) provides adequate and safe access for maintenance and clearing blockages.
FP1.4

On-site wastewater management systems that facilitate on-site storage, treatment, disposal or re-use of wastewater must be designed, constructed and installed—

(a) with adequate treatment and storage capacity for the volume of waste and frequency of disposal; and

(b) with adequate size, strength and rigidity for the nature, flow rates, volume of wastes and/or waste products which must be processed; and

(c) with adequate vehicle access for collection, if required; and

(d) to avoid the likelihood of contamination of any drinking water supplies; and

(e) to avoid the likelihood of contamination of soils, ground water and waterways; and

(f) from materials which are impervious both to the waste for which disposal is required and to water; and

(g) to avoid the likelihood of foul air and gases accumulating within or entering into buildings; and

(h) to avoid the likelihood of unauthorised access by people; and

(i) to permit cleaning, maintenance, measurement and performance sampling; and

(j) to avoid the likelihood of surface water and stormwater entering the system; and

(k) to avoid the likelihood of uncontrolled discharge; and

(l) to permit the manufacturer, model, serial number and designed capacity to be reasonably easily identifiable after installation; and

(m) so that the installation throughout its serviceable life will continue to satisfy the requirements of items (a) to (l).

FP1.5  Land application systems

On-site wastewater management systems and associated land application systems must be designed constructed, installed and maintained in such a manner as to—

(a) complete the treatment, uptake and absorption of the final effluent within the boundaries of the approved application area; and

(b) avoid the likelihood of the creation of unpleasant odours or the accumulation of offensive matter; and

(c) avoid the likelihood of the ingress of effluent, foul air or gases entering buildings; and

(d) avoid the likelihood of stormwater run-off entering the system; and

(e) avoid the likelihood of root penetration or ingress of ground water entering the system; and

(f) protect against internal contamination; and

(g) provide adequate access for maintenance; and

(h) incorporate adequate provisions for effective cleaning; and

(i) avoid the likelihood of unintended or uncontrolled discharge; and

(j) avoid the likelihood of blockage and leakage; and
(k) avoid the likelihood of damage from superimposed loads or ground movement; and
(l) provide ventilation to avoid the likelihood of foul air and gases from accumulating in the system; and
(m) so that the installation throughout its serviceable life will continue to satisfy the requirements of items (a) to (l).

FP1.6 Materials and Products

(a) Materials and products connected to an on-site wastewater management system must meet the requirements of Part A2.

(b) On-site domestic wastewater treatment units must be authorised by the authority having jurisdiction.

VERIFICATION METHOD

FV1

Compliance with FP1.1 to FP1.5 is verified either—

(a) by calculation and certification by persons or organisations with recognised credentials in the testing of on-site domestic wastewater systems; or

(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a recognised certification body.
F1.1 Deemed-to-Satisfy

Performance Requirement FP1.1 – FP1.5 is satisfied by complying with F1.2 as appropriate.

F1.2 Deemed-to-Satisfy Provisions

(a) The size determination, design and installation of septic tanks must be in accordance with AS/NZS 1546.1.

(b) The size determination, design and installation of waterless composting toilets must be in accordance with AS/NZS 1546.2.

(c) The size determination, design and installation of aerated wastewater treatment systems must be in accordance with AS/NZS 1546.3.

(d) The design, construction, installation, replacement, repair, alteration and maintenance of all sanitary plumbing and drainage systems must be in accordance with AS/NZS 3500.2 or Section 4 of AS/NZS 3500.5 as appropriate.

(e) The size determination, design, construction, installation, replacement, repair, alteration and maintenance of domestic land application systems must be in accordance with AS/NZS 1547.

(f) The management of domestic on-site wastewater management systems and domestic land application systems must be in accordance with AS/NZS 1547.
PART F2  ON-SITE LIQUID TRADE WASTE SYSTEMS

ACT F2
NSW F2
Qld F2
WA F2

F2.0  Scope
This Part sets out the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a system of a property used for the on-site treatment, conveyance and/or disposal of liquid trade waste.

OBJECTIVE

FO2
The Objective of this Part is to—
(a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a liquid trade waste installation; and
(b) ensure that a liquid trade waste installation (including an installation provided for use by people with a disability) is suitable; and
(c) conserve water and energy; and
(d) safeguard the environment; and
(e) safeguard public and private infrastructure; and
(f) ensure that a liquid trade waste installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

FUNCTIONAL STATEMENTS

FF2.1
Where liquid trade waste is generated adequate space and facilities must be provided for the safe and hygienic collection, holding, treatment and/or disposal of the waste.

FF2.2
On-site liquid trade waste management systems must process liquid waste generated from an industry, business, trade or manufacturing process so that public health and environmental standards required by the relevant authority having jurisdiction and/or particular requirements of the receiving Network Utility Operator, where applicable, are achieved.
PERFORMANCE REQUIREMENTS

FP2.1
An on-site liquid trade waste system must be designed, constructed and installed in such a manner as to—

(a) protect public health by ensuring that—
   (i) all discharges comply with the relevant requirements of the authority having jurisdiction; and
   (ii) risks associated with the discharge of treated liquid trade waste to the environment are minimised; and
(b) protect the environment by ensuring that—
   (i) environmental quality objectives set by the relevant authority having jurisdiction are attained; and
   (ii) surface and ground water are not polluted; and
   (iii) soil productivity is maintained or enhanced; and
   (iv) adverse cumulative environmental effects comply with the relevant environmental requirements; and
(c) minimise the impacts on and maintain and enhance community amenity by ensuring that—
   (i) on-site liquid trade waste systems are managed so as to achieve sustainable long term performance; and
   (ii) the on-site system design and its implementation contribute to improving and sustaining aesthetic values within individual properties and groups of properties; and
   (iii) the requirements of any community resource utilisation programme for the reuse of resources within wastewater are met; and
(d) meet the requirements of the receiving Network Utility Operator for the acceptance of liquid trade waste to sewers, as appropriate.

FP2.2
Liquid trade waste must be discharged according to the requirements and agreement of the relevant authority having jurisdiction and the receiving Network Utility Operator.

FP2.3
Liquid trade waste must be conveyed to storage containers and within disposal systems in a way that—

(a) transfers wastes safely and hygienically; and
(b) avoids the likelihood of blockage and leakage; and
(c) avoids the likelihood of foul air and gases entering buildings; and
(d) provides adequate and safe access for clearing blockages.
FP2.4

Facilities for the storage, treatment and/or disposal of liquid trade waste must be designed, constructed and installed—

(a) with adequate treatment and storage capacity for the volume of waste and frequency of disposal; and
(b) with adequate size, strength and rigidity for the nature, flow rates, volume of wastes, by-products and residues which must be processed; and
(c) with adequate vehicle access for collection, if required; and
(d) with adequate structural strength for where pedestrian or vehicular traffic is likely to be encountered; and
(e) to avoid the likelihood of contamination of any drinking water supplies; and
(f) to avoid the likelihood of contamination of soils, ground water and waterways; and
(g) from materials which are impervious both to the waste for which disposal is required and to water; and
(h) to avoid the likelihood of foul air and gases accumulating within or entering into buildings; and
(i) to avoid the likelihood of unauthorised access by people; and
(j) to permit cleaning, maintenance, measurement and performance sampling; and
(k) to avoid the likelihood of surface water and stormwater entering the sewerage system except in cases where a contaminated stormwater discharge of limited volume is accepted by the Network Utility Operator as a trade waste; and
(l) to avoid the likelihood of uncontrolled discharge; and
(m) to permit the manufacturer, model, serial number and designed capacity to be reasonably easily identifiable after installation; and
(n) so that the installation throughout its design life will continue to satisfy the requirements of items (a) to (m).

FP2.5

Materials and products used in liquid trade waste drainage installations must meet the requirements of Part A2.

VERIFICATION METHOD

FV2

Compliance with FP2.1 to FP2.4 is verified either—

(a) by calculation and certification by persons or organisations with recognised credentials in the design or testing of on-site domestic wastewater systems; or
(b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a recognised certification body.
Deemed-to-Satisfy Provisions

F2.1 Deemed-to-Satisfy

Performance Requirements FP2.1 to FP2.4 are satisfied by complying with F2.2.

F2.2 Deemed-to-Satisfy Provisions

F2.2.1 General
Where pre-treatment facilities are required, they must comply with the requirements of the appropriate authority having jurisdiction, including the receiving Network Utility Operator (where relevant) and those responsible for occupational health and safety, dangerous goods management and environmental protection.

F2.2.2 Agreement requirements
Where the written agreement of the relevant authority having jurisdiction and the receiving Network Utility Operator is required, the liquid trade waste systems and pre-treatment facilities are to comply with the requirements of the authority having jurisdiction and the receiving Network Utility Operator.

F2.2.3 Pre-treatment facilities not required
Where pre-treatment facilities are not required by the relevant authority having jurisdiction or the receiving Network Utility Operator, the minimum requirement for FP2.3 and FP2.4 is compliance with AS/NZS 3500.2.
SECTION G

MATERIALS AND PRODUCTS CERTIFICATION AND AUTHORISATION

G1 Certification and Authorisation
## SECTION G CONTENTS

### SECTION G MATERIALS AND PRODUCTS CERTIFICATION AND AUTHORISATION

#### Part G1 Certification and Authorisation

- G1.1 Scope
- G1.2 Application
- G1.3 Objective
- G1.4 Authorisation
- G1.5 Certification and Risk Assessment
PART G1
CERTIFICATION AND AUTHORISATION

Deemed-to-Satisfy Provisions

G1.1 Scope
This Part defines the certification and authorisation procedures for plumbing and drainage materials and products so that they may be used or installed in plumbing or drainage installations.

G1.2 Application
This Part applies to all plumbing and drainage materials and products that require certification under Part A2.

The requirement for authorisation and certification is based on the risks arising from the use of the material or product in a plumbing or drainage installation.

The process of risk identification, risk analysis, risk assessment and risk treatment of plumbing and drainage materials and products is set out in MP 78 “Manual for assessment of risks of plumbing products”.

Material and product authorisation is achieved through the application of the WaterMark Certification Scheme (WMCS) and the listing of the material or product on the WaterMark Product Database.

G1.3 Objective
The Objective of this Part is to establish the requirements for materials and product certification and authorisation under Part A2—Acceptance of Design and Construction and to—

(a) provide a process to authorise materials and products to enable their use in plumbing and drainage installations; and

(b) ensure that plumbing and drainage materials and products are fit for purpose and that their use in a plumbing or drainage installation is sustainable and does not create significant risks or any likely outcome of—

(i) personal illness, loss, injury or death;

(ii) environmental degradation;

(iii) contamination of the water resource;

(iv) adverse impact on infrastructure (private and public);

(v) contamination of water supplies;

(vi) wastage of resources (water and energy);

(vii) premature failure of the material or product; and

(viii) the inability of a material or product to function as intended.
Deemed-to-Satisfy Provisions

G1.4 Authorisation

A material or *product* that is listed on the *WaterMark Product Database* and is marked in accordance with the *WaterMark Certification Scheme* is recognised by authorities having jurisdiction as being authorised for use in a *plumbing* or *drainage* installation.

G1.5 Certification and Risk Assessment

G1.5.1 General

The application of this Part is to determine the level of risk and the need for certification under the *WaterMark Certification Scheme (WMCS)*.

The certification process ensures that materials or *products* are manufactured in compliance with the relevant *specification* and is in compliance with the requirements of the *WaterMark Certification Scheme (WMCS)*.

G1.5.2 Materials and products certification

Materials and *products* listed in **Table A2.1** must be certified at the minimum certification level nominated in that Table.

There are two (2) levels of Certification.

*WaterMark* Level 1 – Requires that *products* comply with a specific Australian or International Standard or other suitable published document and are certified under a program in accordance with the principles of ISO/IEC Guide 67, System 5.

*WaterMark* Level 2 – Requires that *products* comply with a specific Australian or International Standard or other suitable published document and are certified under a program in accordance with the ISO/IEC Guide 67, System 1b.

Any new or innovative material or *product* that is required to comply with AS/NZS 4020 or is assessed with a consequence score of more than 4 under MP 78 requires Level 1 Certification.

Any new or innovative material or *product* that is assessed with a consequence score in the range of 3 – 4, under MP 78, requires Level 2 Certification.

Any material or *product* with a consequence score of less than 3 does not require certification.

G1.5.3 The process

The certification process is outlined in **Figure G1.5.3**.

Certification of a *plumbing* or *drainage product* or material must be conducted by a *WaterMark Conformity Assessment Body (WMCAB)*.

If the material or *product* attributes coincide with those of a material or *product* listed in **Table A2.1**, certification must be carried out in accordance with G.1.5.4 and the relevant *specification* in AS 5200.000.

G1.5.3.1 Risk assessment process for materials and products for which there is no appropriate specification

If the material or *product* is not listed in **Table A2.1** or there is no appropriate *specification* the *WMCAB* is to carry out an assessment of the risks associated with its use in accordance with MP 78 and the outcomes of the assessment must be reported to the *administering body*.
Deemed-to-Satisfy Provisions

G1.5.3.2 Consequence score less than 3 (Certification not required)

If the outcome of an assessment carried out in accordance with MP 78 is a consequence score of less than 3, the WMCAB is to submit to the administering body all pertinent assessment details, including a description of the material or product and its consequence score. If no objection to the assessment outcome is received from the administering body within 28 days, the material or product may be incorporated in a plumbing or drainage installation without certification.

G1.5.3.3 Consequence score of 3–4 (Certification Level 2)

If the outcome of an assessment in accordance with MP 78 is a consequence score of 3–4 and there is no specification in place the WMCAB is to submit for approval:

(a) to the administering body, a specification that accurately describes the physical and functional attributes of the material or product and relevant tests related to materials and function; and

(b) to the administering body, proposed installation details related to the product.

The documentation required in (a) and (b) above is to be in a generic product Standard format, called an Australian Technical Specification (ATS).

Note: The administering body may request amendments to the specification and/or proposed installation details before accepting approval for the specification.

Certification of the material or product must be in accordance with Clause G1.5.4.2 and is to be based on the approved specification received from the administering body.

Certification based on a specification listed in AS 5200.000 or an approved specification is valid for a period not exceeding 2 years. The WMCAB working with and on behalf of the applicant is to actively participate to convert the approved specification into an Australian Standard within that period. Failing to do so will result in the certification being withdrawn. In such an event, the WMCAB is to remove the material or product from the WaterMark Product Database. An extension to the certification period may only be granted under extenuating circumstances.

G1.5.3.4 Consequence score of more than 4 (Certification Level 1)

If the outcome of assessment carried out in accordance with MP 78 is a consequence score of more than 4, certification of the material or product must be in accordance with Clause G1.5.4.3.

G1.5.4 Certification

G1.5.4.1 Certification Mark

The WaterMark is issued by a WMCAB subject to material or product compliance with the relevant specification and the terms and conditions in the certification licence agreed to between the WMCAB and the approved user.

Certification to WaterMark Certification Scheme (WMCS) must not be implied or claimed unless the material or product has been duly certified and an appropriate licence issued.

Figure G1.5.4.1 summarises the certification requirements in relation to the consequence score.
### Deemed-to-Satisfy Provisions

**Figure G1.5.4.1 — Product Certification**

<table>
<thead>
<tr>
<th>MP 78 Consequence Score</th>
<th>Certification</th>
<th>Minimum Certification Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 3</td>
<td>None Required</td>
<td>None Required</td>
</tr>
<tr>
<td>3 – 4</td>
<td>![W symbol]</td>
<td>Level 2</td>
</tr>
<tr>
<td></td>
<td>An approved user must meet the requirements of ISO Guide 67 System 1b, provide warranty and comply with licence conditions.</td>
<td></td>
</tr>
<tr>
<td>More than 4</td>
<td>![W symbol]</td>
<td>Level 1</td>
</tr>
<tr>
<td></td>
<td>An approved user must meet the requirements of ISO Guide 67 System 5, provide warranty and comply with licence conditions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Product AS or ATS Licence No.</td>
<td></td>
</tr>
</tbody>
</table>

#### G1.5.4.2 Materials and products with a consequence score of 3 - 4 (Certification Level 2)

For materials and products with a consequence score of 3 - 4 to achieve certification to WaterMark, they are to be certified as fully complying with the requirements of the WaterMark Certification Scheme (WMCS).

Product testing for certification level 2 must be certified as having been carried out in a recognised testing laboratory by the WMCAB.

The manufacturer of the material or product must be certified by the WMCAB as having been carried out in accordance with an approved Quality Assurance Program appropriate for the material or product.

The manufacturer must provide a warranty on the material or product that is clearly visible and comprehensible to the intending purchaser and user.

The product is granted Certification to WaterMark if all of the above requirements are met.

#### G1.5.4.3 Materials and products with a consequence score of more than 4 (Certification Level 1)

For materials and products with a consequence score of more than 4 to achieve certification to WaterMark, they must be certified as fully complying with an approved specification through product testing.

Full product testing for Certification level 1 must be certified as having been carried out in a recognised testing laboratory by the WMCAB.

The manufacture of the material or product must be certified by the WMCAB as having been carried out in accordance with a Full Quality Assurance Program (as set out in ISO/IEC Guide 67) appropriate for the material or product.

In addition, the approved user must comply with the conditions of the WaterMark licence.

The material or product is granted Certification to use the WaterMark if all of the above requirements are met.
Deemed-to-Satisfy Provisions

G1.5.4.4 Certification licence

The WMCAB issues a licence to the supplier as a consequence of the certification of a plumbing or drainage material or product. The licence contains conditions that must be observed by the approved user for the material or product to exhibit or be associated with the WaterMark Certification Scheme (WMCS).

As soon as practicable after issuing a licence, the WMCAB is to—

(a) register the material or product on the WaterMark Product Database; and

(b) provide corresponding advice to the administering body.

A licence will be revoked if any of the certification or licence conditions are breached. In such a situation, certification lapses and the WMCAB must remove the material or product from the WaterMark Product Database.

G1.5.5 Product Marking

The WMCAB must ensure that a material or product that has been accorded a certification mark is appropriately marked.

A material or product displaying a certification mark but without the required warranty is not an authorised product.

In exceptional cases where the product is too small to receive a mark, suppliers may make application for an exemption to display the WaterMark. The WMCAB must make application for exemption to the administering body.

WaterMark may only be shown on or be associated with a material or product that has been duly certified and the supplier appropriately licensed.
Deemed-to-Satisfy Provisions

Figure G1.5.3 — The Watermark Certification Process

Note: This flow chart is a guide only. It does not detail all the steps that may be encountered in the process.
APPENDIX CONTENTS

APPENDIX COMMONWEALTH OF AUSTRALIA
APPENDIX A

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APPENDIX AUSTRALIAN CAPITAL TERRITORPY

A  GENERAL PROVISIONS
B  WATER SERVICES
C  SANITARY PLUMBING AND DRAINAGE SYSTEMS
D  STORMWATER DRAINAGE SYSTEMS
E  HEATING, VENTILATION AND AIR-CONDITIONING
F  ON-SITE WASTEWATER SYSTEMS
SECTION A  GENERAL PROVISIONS

PART A1  INTERPRETATION

ACT A1.1 Definitions

Insert definition for building as follows:

Building has the meaning ascribed to it in the Building Act 2004 dictionary.

Insert definition for Class as follows:

Class, of building has the meaning ascribed to it in the Building Act 2004 dictionary.

Insert definition for climate zone 3 as follows:

Climate zone 3 means climate zone 3 as set out in the register of solar water heaters kept under the Renewable Energy (Electricity) Regulations.

Insert definition for climate zone 4 as follows:

Climate zone 4 means climate zone 4 as set out in the register of solar water heaters kept under the Renewable Energy (Electricity) Regulations.

Insert definition for fuel-burning equipment as follows:

Fuel-burning equipment means a furnace, boiler, fireplace, oven, retort, incinerator, internal-combustion engine, chimney or any other apparatus, device, mechanism or structure, in the operation of which combustible material is, or is intended to be, used or that is, or is intended to be, used in relation to the burning of combustible material.

Insert definition for new Class 1 building as follows:

New Class 1 building means a Class 1 building for which a certificate of occupancy for the whole building has not been issued under the Building Act 2004 (except a building completed before 2000), and includes a building built to replace demolished premises.

Insert definition for non-urban land as follows:

Non-urban land means—

(a) territory land in 1 of the following zones under the territory plan—

(i) broadacre zone;
(ii) rural zone
(iii) hills, ridges and buffer area zones;
(iv) river corridor zone;
(v) mountains and bushlands zone;
(vi) transport and services zones TS1-TS2; or

(b) land other than land in an area identified under the national capital plan as—

(i) an urban area; or
(ii) the Central National Area.

Insert definition for renewable energy certificate as follows:

Renewable energy certificate means a certificate issued under the Commonwealth Government's Mandatory Renewable Energy Target Scheme.

Insert definition for solid fuel-burning equipment as follows:
Solid fuel-burning equipment means fuel-burning equipment that is designed to burn hard wood, soft wood or briquettes and to which AS 4013 applies.

Insert definition for WELS standard as follows:

WELS standard has the definition ascribed to it under the Water Efficiency Labelling and Standards Act 2005 dictionary.

In Table A1.3, insert additional references as follows:

<table>
<thead>
<tr>
<th>Document No.</th>
<th>Title</th>
<th>PCA Clause</th>
</tr>
</thead>
<tbody>
<tr>
<td>AS/NZS 2712</td>
<td>Solar and heat pump water heaters – design and construction</td>
<td>ACT B2.3</td>
</tr>
<tr>
<td>AS 4013</td>
<td>Domestic solid fuel burning appliance – method for determination of flue gas emission</td>
<td>ACT B2.3</td>
</tr>
<tr>
<td>AS 4234</td>
<td>Heated water systems – calculation of energy consumption</td>
<td>ACT B2.3</td>
</tr>
<tr>
<td>AS 4552</td>
<td>Gas fired water heaters for hot water supply and/or central heating</td>
<td>ACT B2.3</td>
</tr>
</tbody>
</table>

SECTION B WATER SERVICES

PART B1 COLD WATER SERVICES

Delete B1.2(a) and insert ACT B1.2(a) as follows:

ACT B1.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with AS/NZS 3500.1.

PART B2 HEATED WATER SERVICES

Delete B2.2(a) and insert ACT B2.2(a) as follows:

ACT B2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a heated water service must be in accordance with AS/NZS 3500.4.

ACT B2.101 Hot-water system standard

Unless exempted under (e), a water heater in a heated water system in a new Class 1 building must use as a water heater one of the following—

(a) a gas water heater that—
   (i) complies with AS 4552; and  
   (ii) achieves a minimum energy efficiency rating of 5 stars in accordance with AS 4552; or
(b) a heat pump water heater that—
   (i) complies with AS/NZS 4234; and
   (ii) has been rated in accordance with AS/NZS 4234; and
   (iii) if the heat pump water heater system is to be installed in a new Class 1 building with 1 or 2 bedrooms—
      (A) has at least 14 renewable energy certificates for climate zone 4; and
      (B) achieves a minimum energy saving of 40% in accordance with the requirements under AS/NZS 4234 for a small system; and
   (iv) if the heat pump water heater system is to be installed in a new Class 1 building with 3 or 4 bedrooms—
      (A) has at least 22 renewable energy certificates for climate zone 4; and
      (B) achieves a minimum energy saving of 60% in accordance with the requirements under AS/NZS 4234 for a medium system; and
   (v) if the heat pump water heater system is to be installed in a new Class 1 building with 5 or more bedrooms—
      (A) has at least 28 renewable energy certificates for climate zone 4; and
      (B) achieves a minimum energy saving of 60% in accordance with the requirements under AS/NZS 4234 for a large system; or

(c) a solar water heater that—
   (i) complies with AS/NZS 2712; and
   (ii) has been rated in accordance with AS/NZS 4234; and
   (iii) if the solar water heater system is to be installed in a new Class 1 building with 1 or 2 bedrooms—
      (A) has at least 14 renewable energy certificates for climate zone 3; and
      (B) achieves a minimum energy saving of 40% in accordance with the requirements under AS/NZS 4234 for a small system; and
   (iv) if the solar water heater system is to be installed in a new Class 1 building with 3 or 4 bedrooms—
      (A) has at least 22 renewable energy certificates for climate zone 3; and
      (B) achieves a minimum energy saving of 60% in accordance with the requirements under AS/NZS 4234 for a medium system; and
   (v) if the solar water heater system is to be installed in a new Class 1 building with 5 or more bedrooms—
      (A) has at least 28 renewable energy certificates for climate zone 3; and
      (B) achieves a minimum energy saving of 60% in accordance with the requirements under AS/NZS 4234 for a large system; or

(d) a water heater determined by the Minister if—
   (i) the greenhouse gas emissions associated with the water heater are not more than the greenhouse gas emissions associated with the operation of any of the water heaters mentioned in (a) to (c); or
(ii) the water heater is required to enable the heated water system in which it is to be installed to operate effectively and it is not reasonable to require the heated water system to be altered in another way.

(e) A water heater need not comply with (a) to (d) if—

(i) the water heater—

(A) consists of solid fuel-burning equipment; and

(B) the water heater is installed in a heated water system in a new Class 1 building located in an area of non-urban land; or

(ii) is installed for use during construction of the building and is removed when the work is completed.

PART B3 NON-DRINKING WATER SERVICES

Delete B3.2(b) and insert ACT B3.2(b) as follows:

ACT B3.2 Deemed-to-Satisfy Provisions

(b) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary plumbing system must be in accordance with AS/NZS 3500.1.

SECTION C SANITARY PLUMBING AND DRAINAGE SYSTEMS

PART C1 SANITARY PLUMBING SYSTEMS

Delete C1.2(a) and insert ACT C1.2(a) as follows:

ACT C1.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary plumbing system must be in accordance with AS/NZS 3500.2.

PART C2 SANITARY DRAINAGE SYSTEMS

Delete C2.2(a) and insert ACT C2.2(a) as follows:

ACT C2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary drainage system must be in accordance with

(i) AS/NZS 3500.2 except—

(A) delete existing clause 4.5.2 and replace with "A reflux valve cannot replace an overflow relief gully (ORG) at any time."

(B) Insert the following as clause 4.7 and 4.8

(aa) sewer manholes shall be installed at the following location:

(AA) at the beginning and end of any line DN 150 or larger; and

(BB) at any change of direction on a line DN 150 or larger; and
(CC) at the junction of two pipes both of which are DN 150 or larger; and

(DD) at the confluence of three or more pipes where an pipes is DN 150 or larger; and at intervals of not more than 100 metres on any line that is DN 150 or larger.

(C) Delete 12.2.3 and replace as follows:

(a) The multi-unit development requires one complying overflow relief gully as specified in clause 4.6.6.

(b) Additional overflow relief from sewerage surcharge. The gully shall comply with clause 4.6.6.6, but have a reduced minimum height of 100 mm.

(c) An inspection shaft in accordance with clause 4.4.2, immediately upstream of the junction with the main line of the sanitary drain.

(d) An open upstream vent.

After C2.2(b) insert ACT C2.2(c), (d), (e) and (f) as follows:

(c) The drainage of a dwelling or building on a single parcel of land cannot be combined with a drain of a dwelling or building on another parcel of land. The drainage of each dwelling or building must—

(i) be separate from another dwelling or building.

(ii) Despite (i), the construction occupations registrar may approve a combined drainage system, if satisfied that special reasons exist for doing so.

(d) An interceptor trap and accesshole must—

(i) be carried to ground level; and

(ii) be fitted at that level with approved cast-iron airtight covers.

(e) All new property connections shall include an inspection shaft, where the difference in elevation between the drain and sewer tie warrants a graded jump-up, they will rise at 45 degree unless constricted by space or specified to be vertical. The base of the vertical jump-ups shall be located immediately upstream of the inspection opening which must be as close to the property boundary as possible or adjacent to the tie. If located in a driveway, a trafficable lid must be provided over the shaft.

(f) All vertical jump ups on house drainage must be extended to ground level and finished with a removable inspection opening.

SECTION D STORMWATER DRAINAGE SYSTEMS

PART D1 ROOF DRAINAGE SYSTEMS

Part D1 does not apply in the Australian Capital Territory. Roof drainage systems are regulated under the ACT Building Act 2004.

PART D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

Part D2 does not apply in the Australian Capital Territory. Surface and subsurface drainage systems are regulated under the ACT Building Act 2004.
SECTION E  HEATING, VENTILATION AND AIR-CONDITIONING

PART E1  HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

Part E1 does not apply in the Australian Capital Territory. Heating, ventilation and air-conditioning is regulated under the ACT Building Act 2004.

SECTION F  ON-SITE WASTEWATER SYSTEMS

PART F1  ON-SITE WASTEWATER MANAGEMENT SYSTEMS

Part F1 as listed does not apply in the Australian Capital Territory. On-Site Wastewater Management Systems are regulated under the ACT Health Act 1993. The Water and Sewerage Act 2000 applies for the plumbing or drainage system.

PART F2  ON-SITE LIQUID TRADE WASTE SYSTEMS

Part F2 as listed does not apply in the Australian Capital Territory. On-Site Liquid Trade Waste Systems are regulated under the ACT Utilities Act 2000. The Water and Sewerage Act 2000 applies for the plumbing or drainage system.
APPENDIX A

NEW SOUTH WALES
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<td>C</td>
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<tr>
<td>D</td>
<td>STORMWATER DRAINAGE SYSTEMS</td>
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<tr>
<td>E</td>
<td>HEATING, VENTILATION AND AIR-CONDITIONING</td>
</tr>
<tr>
<td>F</td>
<td>ON-SITE WASTEWATER SYSTEMS</td>
</tr>
</tbody>
</table>
SECTION B  WATER SERVICES

PART B1  COLD WATER SERVICES

Delete B1.2(a) and insert NSW B1.2(a) as follows:

NSW B1.2  Deemed-to-Satisfy Provisions

(a)  The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with:

(i)  AS 3500.1 with the following additions:

   (A)  For clause 5.4.2 add NSW requirement (n): Where valves are located below ground within the property boundary, they shall be provided with a surface box and riser. The box lid shall be permanently marked with a ”W”.

   (B)  After 4.6.3.3 insert 4.7 as follows:


4.7 Water systems permanently attached to cooling towers

Backflow prevention shall be positioned so that:

(i)  Cooling tower air gap must be measured from the rim of the cooling tower basin.

(ii)  If a drinking water service to the cooling tower passes through the basin, the service pipe must be provided with a double wall protection.

(iii)  If a fast fill connection is required, the fast fill line shall terminate externally to the unit, with an air gap over either the basin or a tundish.

NOTE: See NSW Figure B1.2 Typical Cooling Tower Connections.
NSW Figure B1.2 Typical Cooling Tower Connections

(C) After 14.3.3 (c) insert (d) and (e) as follows:

(d) Single residential dwellings require the following:
   (i) Buried or partly buried rainwater tanks a non-testable dual check valve with atmospheric port is required for containment protection and
   (ii) a non-testable device for zone protection. The network utility operator reserves the right to require greater backflow for containment.

(e) Where rainwater tanks are installed for other than a single residential dwelling approval must be obtained from the water supply network utility operator for containment.
PART B2  HEATED WATER SERVICES

Delete B2.2(a) and insert NSW B2.2(a) as follows:

NSW B2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a heated water service must be in accordance with AS/NZS 3500.4.

PART B3  NON-DRINKING WATER SERVICES

Delete B3.2(b) and insert NSW B3.2(b) as follows:

NSW B3.2 Deemed-to-Satisfy Provisions

(b) The design, construction, installation, replacement, repair, alteration and maintenance of a non-drinking water service must be in accordance with:

(i) AS 3500.1 with the following variations:

(A) All external taps are to comply with Clause 9.5.2.3 (d) (i) only;

(B) After clause 9A.3(c) insert (d) and (e) as follows:

(d) Top up from a drinking water supply shall be by an indirect trickle top up with a visible air gap external to the tank.

(e) There shall be no connection between treated greywater systems and the drinking water, rainwater or other sources of supply.

PART B4  FIREFIGHTING WATER SERVICES

Part B4 does not apply in New South Wales.

SECTION C  SANITARY PLUMBING AND DRAINAGE SYSTEMS

PART C1  SANITARY PLUMBING SYSTEMS

Delete C1.2(a) and insert NSW C1.2(a) as follows:

NSW C1.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary plumbing system must be in accordance with AS/NZS 3500.2.

PART C2  SANITARY DRAINAGE SYSTEMS

Delete C2.2(a) and insert NSW C2.2(a) as follows:

NSW C2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary drainage system must be in accordance with:

(i) AS 3500.2 with the following variations:
(A) For clause 4.2.1 insert the following after note 1:
Minimum vertical height of 1.2 m between the soffit of the Network Utility Operator's sewer and the overflow gully or lowest fixture within the property.

(B) For clause 4.4.1 insert the following as paragraph 3:
Boundary trap or inspection shafts cannot terminate within buildings as defined in the BCA area referred to as habitable. See BCA "Interpretation" and delete 'excludes' from (b).

(C) After clause 4.5.2(b) insert (c) as follows:
(c) Soil and waste stacks shall not discharge through a reflux valve except where a reflux valve is installed at the connection to the sewer required with surcharging sewers.

(D) Delete clause 4.5.3 and replace as follows:
Where a surcharge is likely to occur and a reflux valve is to be installed, it shall be located in accordance with the following:
(a) Where the drain has an inspection shaft or boundary trap, the reflux valve shall be located immediately downstream from and adjacent to the outlet of the shaft or trap.
(b) The invert of the outlet of the reflux valve shall be installed a minimum of 80 mm higher than the invert of the Network Utility Operators system it is connected to. See NSW Figure C2.2 Reflux Valves.

**NSW Figure C2.2 Reflux Valves**

![NSW Figure C2.2 Reflux Valves Diagram](image)
NOTE: When a reflux valve is installed the valve remains the responsibility of the property owner.

(E) After clause 4.7.1(h) insert (i) as follows:

(i) At each branch off a main line internal of the building connecting one or more water closets or slop hoppers. In these cases inspection openings must be raised to finished surface level in an accessible position and sealed with an airtight cover.

If access to the under floor area is more than 600 mm above the inspection opening, the riser may be omitted.

(F) After clause 10.7(g) insert (h) as follows:

(h) Sewage management facilities shall be accredited by NSW Health and comply with local government requirements. Before a connection is made to pump raw sewerage or effluent from a septic tank or holding well to the network utility operators sewer, an application must be made to that network utility operator. Applicants must meet the pump to sewer requirements and conditions for all connections to the sewer.

A marker tape must be laid along the top of all pump discharge or rising mains pipes at intervals of not more than 3 m.

(G) After clause 4.3.1(h) insert (i) as follows:

(i) not have DN 40 or DN 50 traps installed.

SECTION D STORMWATER DRAINAGE SYSTEMS

PART D1 ROOF DRAINAGE SYSTEMS

Part D1 does not apply in New South Wales.

PART D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

Part D2 does not apply in New South Wales.

SECTION E HEATING, VENTILATION AND AIR-CONDITIONING

PART E1 HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

Part E1 does not apply in New South Wales.

SECTION F ON-SITE WASTEWATER SYSTEMS

PART F1 ON-SITE WASTE WATER MANAGEMENT SYSTEMS

Part F1 does not apply in New South Wales.
PART F2 ON-SITE LIQUID TRADE WASTE SYSTEMS

Part F2 does not apply in New South Wales.
APPENDIX CONTENTS

APPENDIX NORTHERN TERRITORY

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C  SANITARY PLUMBING AND DRAINAGE SYSTEMS
D  STORMWATER DRAINAGE SYSTEMS
E  HEATING, VENTILATION AND AIR-CONDITIONING
F  ON-SITE WASTEWATER MANAGEMENT
SECTION B  WATER SERVICES

PART B4  FIRE-FIGHTING WATER SERVICES

Part B4 does not apply in the Northern Territory.

SECTION C  SANITARY PLUMBING AND DRAINAGE SYSTEMS

PART C2  SANITARY DRAINAGE SYSTEMS

Delete C2.2(a) and insert NT C2.2(a) as follows:

**NT C2.2 Deemed-to-Satisfy Provisions**

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary drainage system must be in accordance with—

(i) AS/NZS 3500.2 except—

   (A) replace clause 4.6.6.6 with the following:
   A minimum height of 100 mm shall be maintained between the top of the overflow gully riser and the lowest fixture connected to the drain; and

   (B) replace clause 4.6.6.7 with the following:
   The minimum height between the top of the overflow gully riser and the surrounding natural ground surface level shall be 150 mm, except where the gully riser is located in a path or paved area, where it shall be finished at a level so as to prevent the ponding and ingress of water; and

   (C) inspection openings are only required—
   (aa) at the connections to the Network Utility Operator sewer main; and
   (bb) where a new section of drain is to be connected to an existing drain; and

   (cc) as required by the Regulator; and

   (D) a domestic swimming pool must not be connected to sewer main; and

   (E) a swimming pool other than a domestic swimming pool, must not be connected to a sewer main without the approval of the Network Utility Operator; and

   (F) a clothes washing machine must not discharge into a floor waste gully; or

(ii) AS/NZS 3500.5 except—

   (A) replace clause 4.35.6.6 with the following:
   A minimum height of 100 mm shall be maintained between the top of the overflow gully riser and the lowest fixture connected to the drain; and

   (B) replace clause 4.35.6.7 with the following:
   The minimum height between the top of the overflow gully riser and the surrounding natural ground surface level shall be 150 mm, except where the
gully riser is located in a path or paved area, where it shall be finished at a level so as to prevent the ponding and ingress of water; and

(C) inspection openings are only required—
   (aa) at the connections to the Network Utility Operator sewer main; and
   (bb) where a new section of drain is to be connected to an existing drain; and
   (cc) as required by the Regulator; and

(D) a domestic swimming pool must not be connected to sewer main; and

(E) a swimming pool other than a domestic swimming pool, must not be connected to a sewer main without the approval of the Network Utility Operator; and

(F) a clothes washing machine must not discharge into a floor waste gully.

SECTION D STORMWATER DRAINAGE SYSTEMS

PART D1 ROOF DRAINAGE SYSTEMS
Part D1 does not apply in the Northern Territory.

PART D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS
Part D2 does not apply in the Northern Territory.

SECTION E HEATING, VENTILATION AND AIR-CONDITIONING

PART E1 HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS
Part E1 does not apply in the Northern Territory.

SECTION F ON-SITE WASTEWATER SYSTEMS

PART F1 ON-SITE WASTEWATER MANAGEMENT SYSTEMS
Part F1 does not apply in the Northern Territory.
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SECTION B    WATER SERVICES

PART B1  COLD WATER SERVICES

Delete B1.2(a) and insert Qld B1.2(a) as follows:

Qld B1.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with AS/NZS 3500.1.

PART B2  HEATED WATER SERVICES

Delete BO2(a) and insert Qld BO2 as follows:

Qld BO2 OBJECTIVE

The Objective of this Part is to—

(a) safeguard people from illness and injury as a result of the installation of specific types of hot water systems eg. solar and heat pump.

Delete B2.2(a) and insert Qld B2.2(a) as follows:

Qld B2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a heated water service must be in accordance with AS/NZS 3500.4.

PART B3 NON-DRINKING WATER SERVICES

After B3.2(a)(ix) insert Qld B3.2(a)(x), (xi) and (xii) as follows:

Qld B3.2 Deemed-to-Satisfy Provisions

(x) manual bucketing of greywater to garden irrigation; and
(xi) connection of flexible hose to laundry for garden irrigation; and
(xii) use of certified greywater diversion devices (with Local Government approval).

Delete B3.2(b) and insert Qld B3.2(b) as follows:

(b) The design, construction, installation, replacement, repair, alteration and maintenance of a non-drinking water service must be in accordance with AS/NZS 3500.1.

After B3.2(c) insert Qld B3.101 as follows:

Qld B3.101 Combination wastewater testing parameter for advanced secondary and advanced secondary with nutrient reduction

Advanced secondary quality effluent must meet the following effluent compliance characteristics:

(a) 90% of the samples taken over the test period must have a BOD₅ less than or equal to 10 g/m³ with no sample greater than 20 g/m³.
(b) 90% of the samples taken over the test period must have total suspended solids less than or equal to 10 g/m³ with no sample greater than 20 g/m³.

(c) Where disinfection is provided 90% of the samples taken over the test period must have a thermotolerant coliform count (determined by either the most probable number or membrane filter technique) not exceeding 10 organisms per 100 mL with no sample exceeding 200 organisms per 100 mL.

(d) Where chlorination is the disinfection process, the total chlorine concentration must be greater than or equal to 0.5 g/m³ and less than 2.0 g/m³ in four out of five samples taken.

(e) Where the manufacturer has included nitrogen and/or phosphorus reduction in the treatment process, the effluent compliance criteria must be able to meet in addition to the above the following nutrient criteria:

(i) 90% of the samples, with 95% confidence limits taken over the test period shall have a total nitrogen concentration less than or equal to 10 mg/L.

(ii) 90% of the samples, with 95% confidence limits taken over the test period shall have a total phosphorus concentration less than or equal to 5 mg/L.

If the nitrogen and phosphorus concentrations do not meet the criteria nominated in (e) above, the manufacturer can request that recognition be given to the actual nitrogen and/or phosphorus concentration determined in the above evaluation by the Department of Infrastructure and Planning.

After Qld B3.101 insert Qld B3.102 as follows:

**Qld B3.102 Irrigation**

For lots which have a Class 1 or Class 2 building, in areas serviced by a water service provider, outdoor irrigation systems must comply with Queensland Water Commission guidelines for an efficient irrigation system - ‘Efficient Irrigation for Water Conservation’ when—

(a) connected to a water service; or

(b) connected to a rainwater tank where the rainwater tank has a continuity of supply from a water service through either—

(i) a trickle top-up system; or

(ii) an automatic switching device where the offtake is located downstream of the automatic switching device.

**PART B4  FIRE-FIGHTING WATER SERVICES**

Part B4 does not apply in Queensland. Fire-fighting water services are required under the Queensland Building Act 1975.
SECTION C   SANITARY PLUMBING AND DRAINAGE SYSTEMS

PART C1   SANITARY PLUMBING SYSTEMS

Delete C1.2(a) and insert Qld C1.2(a) as follows:

Qld C1.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary plumbing system must be in accordance with AS/NZS 3500.2.

PART C2   SANITARY DRAINAGE SYSTEMS

Delete C2.2(a) and insert Qld C2.2(a) as follows:

Qld C2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary drainage system must be in accordance with AS/NZS 3500.2.

SECTION D   STORMWATER DRAINAGE SYSTEMS

PART D1   ROOF DRAINAGE SYSTEMS

Part D1 does not apply in Queensland. Roof drainage is regulated under the Queensland Building Act 1975.

PART D2   SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

Part D2 does not apply in Queensland. Surface and subsurface drainage systems are regulated under the Queensland Building Act 1975.

SECTION E   HEATING, VENTILATION AND AIR-CONDITIONING

PART E1   HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

Part E1 does not apply in Queensland. Heating, ventilation and air-conditioning is regulated under the Queensland Building Act 1975.

SECTION F   ON-SITE WASTEWATER SYSTEMS

PART F1   ON-SITE WASTEWATER MANAGEMENT SYSTEMS

Part F1 does not apply in Queensland.
PART F2  ON-SITE LIQUID TRADE WASTE SYSTEMS

Part F2 does not apply in Queensland.
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SECTION B   WATER SERVICES

PART B1   COLD WATER SERVICES

Delete B1.2(a) and insert SA B1.2(a) as follows:

SA B1.2 Deemed-to-Satisfy Provisions

(a)  The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with—

(i)  AS/NZS 3500.1 except—

   (A) insert new clause 14.6.1 as follows:

   A reduction of the hazard ratings listed in table 14.1 may be permitted following a risk assessment of the design and installation of the rainwater tank and other environmental factors in accordance with clause 14.6.1; and

   (B) for buried and partly buried rainwater tanks without connection to a drinking water supply or with direct or indirect connections to a drinking water supply, a dual-check valve with atmospheric port (non-testable) may be used in lieu of a testable device for containment and zone protection where it has been determined by risk assessment that—

   (aa) the risk to tank rainwater quality from air pollution is low; and

   (bb) the risk to tank rainwater quality from groundwater and/or surface water contamination is low. In assessing this risk the permeability of the tank and piping materials and joints to groundwater contaminants should be addressed; and

   (cc) precautions in the design and installation of the rainwater collection system have been taken to reduce impacts to tank rainwater quality from the roof collection and delivery system. Such measures include, but are not restricted to, appropriate materials, gutter guards, filters, first flush devices, dry inlets, guards to exclude vermin and mosquitoes, and the quality of tank maintenance programs; and

   (dd) precautions in the design and installation of the rainwater tank have been taken to reduce impacts to tank rainwater quality from groundwater and surface water pollution. Such measures include, but are not limited to—

      (AA) location and topography; and

      (BB) structural integrity of the tank including installation factors such as bedding, embedment, compaction and geotechnical specifications; and

      (CC) watertightness of tank including all penetrations, connections, access covers and joints; and

      (DD) ingress of vermin through the overflow e.g. by provision of a reflux valve, self sealing valve, trap check valve; and

      (EE) the risk assessment results must be submitted to authority having jurisdiction; or

(ii)  AS/NZS 3500.5 Section 2 except—
(A) After 2.17.3 insert new clause 2.17.4 as follows:

For buried and partly buried rainwater tanks without connection to a drinking water supply or with direct or indirect connections to a drinking water supply, a dual-check valve with atmospheric port (non-testable) may be used in lieu of a testable device for containment and zone protection where it has been determined by risk assessment that:

(aa) the risk to tank rainwater quality from air pollution is low; and

(bb) the risk to tank rainwater quality from groundwater and/or surface water contamination is low. In assessing this risk the permeability of the tank and piping materials and joints to groundwater contaminants should be addressed; and

(cc) precautions in the design and installation of the rainwater collection system have been taken to reduce impacts to tank rainwater quality from the roof collection and delivery system. Such measures include, but are not restricted to, appropriate materials, gutter guards, filters, first flush devices, dry inlets, guards to exclude vermin and mosquitoes, and the quality of tank maintenance programs; and

(dd) precautions in the design and installation of the rainwater tank have been taken to reduce impacts to tank rainwater quality from groundwater and surface water pollution. Such measures include, but are not limited to—

(AA) location and topography; and

(BB) structural integrity of the tank including installation factors such as bedding, embedment, compaction and geotechnical specifications; and

(CC) watertightness of tank including all penetrations, connections, access covers and joints; and

(DD) ingress of vermin through the overflow e.g. by provision of a reflux valve, self sealing valve, trap check valve; and

(EE) the risk assessment results must be submitted to authority having jurisdiction.

After B1.2(b) insert SA B1.2 (c) as follows:

(c) Where a rainwater water service from a rainwater tank is permitted to interconnect with the water service from a water main supply, the following applies to Class 1 buildings and extensions or additions to Class 1 buildings where the roof area is not less than 50m². The supply to a fixture, appliance or water outlet shall be maintained by a device/mechanism that facilitates a seamless automatic switching from one water service supply to another and vice versa without the need for manual intervention.

PART B2   HEATED WATER SERVICES

Delete B2.2(a) and insert SA B2.2(a) as follows:

SA B2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a heated water service must be in accordance with—
(i) AS/NZS 3500.4 with the following amendments:

(A) After 1.9.2(b) insert (c) and (d) as follows:

(c) Where an existing building is altered or extended in such a way that sanitary fixtures used primarily for personal hygiene purposes are installed in a location where, before the alteration or extension, no such fixture existed, the delivery temperature at the fixture shall not exceed:

(i) 45°C for childhood centres, primary and secondary schools, nursing homes, and similar facilities for young, aged, sick or disabled persons; and

(ii) 50°C for all other buildings.

Advisory note: A duty of care should be exercised by installers to explain to clients the merits of temperature control for hot water delivered to existing sanitary fixtures used primarily for personal hygiene purposes.

(d) Where a water heater is replaced, it is not mandatory to install a temperature limitation device to control the temperature of water delivered to sanitary fixtures used primarily for personal hygiene purposes, unless

(i) the replacement water heater is of a solar type; or

(ii) the heating source is uncontrolled; or

(iii) such a device was in place prior to the installation of the replaced water heater.

(B) Delete clause 5.12.2.1 and replace as follows:

The drain lines from the outlet of the temperature/pressure-relief valve and the expansion control valve on an individual water heater shall not be interconnected; and

(C) Delete clause 5.12.3(e) and replace as follows:

(e) All drain lines shall discharge separately over a gully, tundish or other visible approved outlet.

(ii) Section 3 of AS/NZS 3500.5

(A) After clause 3.4.2 insert 3.4.3 and 3.4.4 as follows:

3.4.3 Where an existing building is altered or extended in such a way that sanitary fixtures used primarily for personal hygiene purposes are installed in a location where, before the alteration or extension, no such fixture existed, the delivery temperature at the fixture shall not exceed:

(i) 45°C for childhood centres, primary and secondary schools, nursing homes, and similar facilities for young, aged, sick or disabled persons; and

(ii) 50°C for all other buildings.

Advisory note: A duty of care should be exercised by installers to explain to clients the merits of temperature control for hot water delivered to existing sanitary fixtures used primarily for personal hygiene purposes.
3.4.4 Where a water heater is replaced, it is not mandatory to install a temperature limitation device to control the temperature of water delivered to sanitary fixtures used primarily for personal hygiene purposes, unless

(i) the replacement water heater is of a solar type; or
(ii) the heating source is uncontrolled; or
(iii) such a device was in place prior to the installation of the replaced water heater.

(B) Delete clause 3.22.2.2(a) and (b) and replace as follows:

(a) The drain lines from the outlet of the temperature/pressure-relief valve and the expansion control valve on an individual water heater shall not be interconnected; and

(b) All drain lines shall discharge separately over a gully, tundish or other visible approved outlet.

SECTION C SANITARY PLUMBING AND DRAINAGE SYSTEMS

PART C1 SANITARY PLUMBING SYSTEMS

Delete C1.2(a) and insert SA C1.2(a) as follows:

SA C1.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary plumbing system must be in accordance with either—

(i) AS/NZS 3500.2 with the following additions:

(A) After 4.7.1 (h) insert (i) as follows:

(i) Inspection openings indicated in 4.7.1 (b) (d) and (e) shall be raised to ground level or floor surface level. All other inspection openings need not be raised provided they are not below paved, concreted or floors surfaces; and

(B) Delete 2.4.1(a) and replace as follows:

(a) Bends in pipes shall have a throat radius and shall be free from wrinkling and flattening.

(ii) AS/NZS 3500.5 with the following additions:

(A) After 4.20.2.1(f) insert (g) as follows:

(g) Inspection openings indicated in 4.7.1 (b) (d) and (e) shall be raised to ground level or floor surface level. All other inspection openings need not be raised provided they are not below paved, concreted or floor surfaces; and

(B) After 4.4.10 insert 4.4.11 as follows:

4.4.11 Bends in pipes shall have a throat radius and shall be free from wrinkling and flattening.
SECTION D  STORMWATER DRAINAGE SYSTEMS

PART D1  ROOF DRAINAGE SYSTEMS
Part D1 does not apply in South Australia.

PART D2  SURFACE AND SUBSURFACE DRAINAGE SYSTEMS
Part D2 does not apply in South Australia.

SECTION E  HEATING, VENTILATION AND AIR-CONDITIONING

PART E1  HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS
Part E1 does not apply in South Australia.

SECTION F  ON-SITE WASTEWATER SYSTEMS

PART F1  ON-SITE WASTEWATER MANAGEMENT SYSTEMS
Part F1 does not apply in South Australia.
# APPENDIX CONTENTS

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SECTION A   GENERAL PROVISIONS

Variations and Additions to the PCA in Tasmania are contained within the Tasmanian Plumbing Code (TPC).
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SECTION B  WATER SERVICES

PART B1  COLD WATER SERVICES

After B1.2(b) insert Vic B1.2(c) and (d) as follows:

Vic B1.2 Deemed-to-Satisfy Provisions

(c) Drinking water that is not intentionally heated must be delivered at a temperature of less than 40 degrees Celsius.

(d) A hose tap must be provided in men's public toilets adjacent to the urinals.

PART B2  HEATED WATER SERVICES

Delete B2.2(a) and replace with Vic B2.2(a) as follows:

Vic B2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a heated water service must be in accordance with—

   (i) AS/NZS 3500.4 including the following additions:

      (A) Insert the following at the end of clause 1.9.2:

         In this clause 'heated water installation' means either a heated water reticulation heater and a heated water reticulation system or a heated water reticulation system; and

      (B) Insert the following after clause 4.3.2.4:

         4.3.2.4A Heated Water Service

         The provisions of clause 5.3.8 of AS/NZS 3500.1 apply to heated water reticulation; or

   (ii) Section 3 of AS/NZS 3500.5 as appropriate.

SECTION C  SANITARY PLUMBING AND DRAINAGE SYSTEMS

PART C1  SANITARY PLUMBING SYSTEMS

Delete C1.2(a) and replace with Vic C1.2(a) as follows:

Vic C1.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary plumbing system must be in accordance with—

   (i) AS/NZS 3500.2, including the following:

      Delete clause 13.2(a) and replace as follows:

      (a) When tested, the respective sections of any soil pipe, waste pipe, vent pipe or above-ground drain must be free of leaks when subjected to an air test to 15 kPa for a minimum period of 3 minutes; or
(ii) Section 4 of AS/NZS 3500.5 as appropriate.

PART C2 SANITARY DRAINAGE SYSTEMS

Delete CP2.2 and replace with Vic CP2.2 as follows:

Vic CP2.2 No point of connection

Where a point of connection to a Network Utility Operator’s sewerage system is not available, an on-site wastewater management system must be designed, installed and maintained in accordance with the requirements and agreement of the relevant authority having jurisdiction.

Delete C2.2(a) and replace with Vic C2.2(a) as follows:

Vic C2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary drainage system must be in accordance with—

(i) AS/NZS 3500.2, including the following:

(A) Delete clause 13.2.1 and replace as follows:

Testing of a sanitary drainage installation—

(a) if installed at a property provided with non-drinking water by the network utility operator, may be carried out by way of a water test in accordance with clause 13.3.1 or an air test in accordance with clause 13.3.2;

(b) in any other case, must be carried out by way of an air test in accordance with clause 13.3.2.

(B) Delete clause 13.2.2

(C) Delete clause 13.3.2 and replace as follows:

An air test must be applied to every new below-ground drain and to any section of an existing below-ground drain that has been repaired or replaced. The test must be applied by—

(a) sealing all openings of the below-ground drain to be tested;

(b) applying a pressure of 15 kPa to the drain and holding this pressure for 3 minutes to allow the air temperature to stabilise;

(c) shutting off the air supply and measuring the period of time taken for the pressure in the pipe to drop from 15 kPa to 10 kPa. The drain is considered to have passed the test if the time taken is greater than 90 seconds for pipes of a size not greater than DN 225; or

(ii) Section 4 of AS/NZS 3500.5 as appropriate.

After C2.2(b) insert Vic C2.2 (c) and (d) as follows:

(c) If an inspection shaft or boundary trap riser in a below ground sanitary drainage system is located clear of a building and is not likely to be damaged by vehicular traffic, a light cover must be installed in accordance with clause 4.4.2.1(a) and clause 4.4.2.1(c)(ii) and (iii) of AS/NZS 3500.2.

(d) Discharge pipes measuring DN50 or smaller must not be installed in a below ground sanitary drainage system, except for discharge pipes connected to floor waste gullies.
Vic PART C2.101 REQUIREMENTS FOR DRAINAGE WORK

Vic C2.101 Requirements for low risk on-site liquid trade waste management practices

(a) A low risk liquid trade waste appliance must—
   (i) be located as close as practicable to the fixtures that it serves and if of the portable type must be installed above ground; and
   (ii) be fitted with a cover which is able to withstand vehicular or pedestrian traffic or other loads likely to be imposed on it and is readily removable by one person; and
   (iii) be constructed of materials suitable for the nature of the wastes likely to be discharged through the appliance.

(b) A low risk liquid trade waste appliance must—
   (i) if fitted with an airtight cover, be provided with a DN32, DN50 or DN80 sized vent as nominated by the relevant network utility operator; and
   (ii) be provided with the following outlet ventilation—
       (A) if installed outside a building, a DN100 sized riser off a disconnector gully in accordance with clause 4.6.2 of AS/NZS 3500.2;
       (B) if not of the portable type and installed inside a building, a DN50 sized vent off a disconnector gully in accordance with clause 4.6.5 of AS/NZS 3500.2; and
       (C) if of the portable type installed inside a building, a DN50 sized vent off a DN80 sized trap riser in accordance with clause 4.6.5 of AS/NZS 3500.2.

(c) If a low risk liquid trade waste appliance and outlet vent are interconnected, the interconnection must be in accordance with clause 6.8.3 of AS/NZS 3500.2.

(d) The outlet from a low risk liquid trade waste appliance must—
   (i) if of the portable type receiving a hydraulic loading of up to 5 fixture units, be a minimum size of DN50; or
   (ii) if of the portable type receiving a hydraulic loading of more than 5 fixture units, be a minimum size of DN80; or
   (iii) in any other case, be a minimum size of DN100; and
   (iv) have a separate trap, of the same size as the outlet pipe, installed at its outlet.

(e) In this clause hydraulic loading means the rate of discharge imposed on a sanitary plumbing installation and is measured in fixture units; low risk liquid trade waste means water-borne discharges other than sewage that are classified by an Authority within the meaning of the Water Act 1989 as being of low risk from causing harm to the environment and the assets of that Authority; low risk liquid trade waste appliance means an appliance that traps and partially treats low risk liquid trade waste and prevents it from entering the sewerage system.

Note: The relevant Authority under the Water Act 1989 or the holder of a licence under the Water Industry Act 1994 may specify conditions of connection to a sewer for low risk trade waste to enter that sewer and may also require that the waste passes through a low risk liquid trade waste appliance of a type nominated by the Authority or holder of a licence before it enters the sewer.
SECTION D    STORMWATER DRAINAGE SYSTEMS

PART D1    ROOF DRAINAGE SYSTEMS

Delete D1.2(a) and insert Vic 1.2(a) as follows:

**Vic D1.2 Deemed-to-Satisfy Provisions**

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a roof drainage system must be in accordance with AS/NZS 3500.3 or Section 5 of AS/NZS 3500.5 as appropriate.

SECTION E    HEATING, VENTILATION AND AIR CONDITIONING

PART E1    HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS

After E1.2(e) insert Vic E1.2(f), (g) and (h) as follows:

**Vic E1.2 Deemed-to-Satisfy Provisions**

(f) Condensate drains and bleed down drains installed in heating, cooling and air-conditioning equipment (including evaporative coolers) other than cooling towers must discharge to any of the following—

(i) an evaporative tray if specified by the manufacturer; or

(ii) a sanitary drainage system by way of a tundish or self-sealing device, which complies with either clause 4.6.7.8 or clause 11.22 of AS/NZS 3500.2; or

(iii) a surface water drainage system; or

(iv) an absorption pit, but only if a sanitary or surface water drainage system is not available and the discharge water will not cause damage to buildings or facilities by changing soil moisture conditions; or

(v) a stormwater downpipe directly over the connection to the roof gutter; or

(vi) directly to the stormwater downpipe below the connection to the roof gutter provided a means of overflow or reverse flow protection is incorporated.

(g) Drains from a cooling tower must discharge to a sanitary drainage system in accordance with any applicable trade waste agreement.

(h) In this clause, bleed down drain means a drain that collects fluid from a valve used for bleeding and purging; evaporative tray means a tray used to gather excess moisture or condensation for the purpose of evaporation.

Footnote: OTHER LEGISLATION AFFECTING BUILDINGS

In addition to this Code, there are a number of other legislative technical requirements affecting the design, construction, installation, replacement, repair, alteration and maintenance of
plumbing that practitioners may need to be aware of, including, but not necessarily limited to, the following list. Additional legislative instruments such as regulations, codes, and standards may exist under the legislation listed.

1 Relevant Legislation

Building Act 1993

Plumbing Regulations 2008
APPENDIX A

WESTERN AUSTRALIA
<table>
<thead>
<tr>
<th>APPENDIX CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<tr>
<td>APPENDIX WESTERN AUSTRALIA</td>
</tr>
<tr>
<td>B WATER SERVICES</td>
</tr>
<tr>
<td>C SANITARY PLUMBING AND DRAINAGE SYSTEMS</td>
</tr>
<tr>
<td>D STORMWATER DRAINAGE SYSTEMS</td>
</tr>
<tr>
<td>E HEATING, VENTILATION AND AIR-CONDITIONING</td>
</tr>
<tr>
<td>F ON-SITE WASTEWATER SYSTEMS</td>
</tr>
</tbody>
</table>
SECTION B    WATER SERVICES

PART B1    COLD WATER SERVICES

Delete B1.2(a) and insert WA B1.2(a) as follows:

WA B1.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with—

   (i) AS/NZS 3500.1 except—
       (A) Delete clause 3.5.2 Branch Offtakes
   (ii) Section 2 of AS/NZS 3500.5 except—
       (A) Delete clause 2.21.2 Branch Offtakes

PART B2    HEATED WATER SERVICES

Delete B2.2(a) and insert WA B2.2(a) as follows:

WA B2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a heated water service must be in accordance with—

   (i) AS/NZS 3500.4 except—
       (A) the requirements of clause 1.9.2 apply when a water heater is replaced as follows:
           (aa) An existing storage, instantaneous or continuous flow water heater is replaced with a water heater of a different capacity or heat source (e.g. 50L to 80L);
           (bb) An existing instantaneous or continuous flow water heater is replaced with a storage water heater;
           (cc) An existing storage water heater is replaced with an instantaneous or continuous flow water heater;
           (dd) An existing storage, instantaneous or continuous flow water heater is replaced with a solar water heater;
           (ee) An existing solar water heater is replaced with another solar water heater; or
           (ff) A temperature control device is in place and the existing water heater is replaced.
       (B) replace clause 5.5.3 (c) as follows:
           (c) On a level, stable and impervious base designed and located to avoid ponding and made of—
               (i) bonded brick or concrete cast in situ, having a thickness of not less than 50 mm; or
               (ii) pre-cast concrete having a thickness of not less than 40 mm.
       (C) in clause 5.9.3 Table 5.1
For line item "Expansion control valve (Australia)", the asterisk(*) is deleted in the second, third and fourth column and replaced with "Yes"; and

(D) replace clause 5.12.3 (e) as follows:

(e) Drain lines from temperature/pressure relief valves and expansion control valves shall terminate at one of the following approved points of discharge:

(i) over a tundish with an air gap of 50 mm between the top of the tundish and the termination of the drain line/s;

(ii) over a disconnector or overflow relief gully with an air gap of 75 mm between the grate of the gully and the termination of the drain line/s;

(iii) over a gravel pit no less than 100 mm in diameter and minimum depth of 250 mm. The air gap between the grate of the gravel pit and the termination of the drain line/s shall be 50 mm.

(E) in clause 7.3.1 replace the NOTE as follows:

Note: Solar water heaters are considered to have an uncontrolled heat source.

(ii) Section 3 of AS/NZS 3500.5 except—

(A) the requirements of clause 3.4.2 apply when a water heater is replaced as follows:

(aa) An existing storage, instantaneous or continuous flow water heater is replaced with a water heater of a different capacity or heat source (e.g. 50L to 80L);

(bb) An existing instantaneous or continuous flow water heater is replaced with a storage water heater;

(cc) An existing storage water heater is replaced with an instantaneous or continuous flow water heater;

(dd) An existing storage, instantaneous or continuous flow water heater is replaced with a solar water heater;

(ee) An existing solar water heater is replaced with another solar water heater; or

(ff) A temperature control device is in place and the existing water heater is replaced.

(B) in Table 3.3

For line item "Expansion control valve (Australia)", the asterisk(*) is deleted in the second, third and fourth column and replaced with "Yes"; and

(C) replace clause 3.15.2(c) as follows:

(c) On a level, stable and impervious base designed and located to avoid ponding and made of—

(i) bonded brick or concrete cast in situ, having a thickness of not less than 50 mm; or

(ii) pre-cast concrete having a thickness of not less than 40 mm.

(D) replace clause 3.22.2.3 (e) as follows:
(e) Drain lines from temperature/pressure relief valves and expansion control valves shall terminate at one of the following approved points of discharge:

(i) over a tundish with an air gap of 50 mm between the top of the tundish and the termination of the drain line/s;

(ii) over a disconnector or overflow relief gully with an air gap of 75 mm between the grate of the gully and the termination of the drain line/s;

(iii) over a gravel pit no less than 100 mm in diameter and minimum depth of 250 mm. The air gap between the grate of the gravel pit and the termination of the drain line/s shall be 50 mm.

SECTION C SANITARY PLUMBING AND DRAINAGE SYSTEMS

PART C1 SANITARY PLUMBING SYSTEMS

After C1.2(b), insert WA C1.2(c) as follows:

WA C1.2 Deemed-to-Satisfy Provisions

(c) Bends in pipes shall have a throat radius and shall be free from wrinkling and flattening.

PART C2 SANITARY DRAINAGE SYSTEMS

Delete C2.2(a) and insert WA C2.2(a) as follows:

WA C2.2 Deemed-to-Satisfy Provisions

(a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary drainage system must be in accordance with—

(i) AS/NZS 3500.2 except—

(A) Replace clause 3.18(d) as follows:

(d) A DN 100 vacuum sewer system vent shall be connected on the main drain as close as practicable to the inspection shaft riser or further upstream, provided no other fixture is connected between the inspection shaft riser and the vent connection.

(B) Replace clause 4.6.2(b) as follows:

(b) have each gully riser provided with a grating or cover of a loose, pop-out type to relieve surcharge and allow adequate ventilation to the gully riser; and

(C) Replace Table 4.3 with the following:

WA C2.2 -Table 4.3

<table>
<thead>
<tr>
<th>Fixture</th>
<th>Point of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor waste gully</td>
<td>Top surface level of the grate</td>
</tr>
<tr>
<td>Other fixtures</td>
<td>Overflow level of the fixture</td>
</tr>
</tbody>
</table>
(D) Replace clause 4.7.1 (a), (g) and (h) with the following:
   (a) at the downstream end of any branch drain that exits a building, adjacent to the junction into the main drain;
   (g) at the upstream and downstream ends of all branch drains that are external to a building;
   (h) at every change of horizontal direction greater than 45°

(ii) Section 4 of AS/NZS 3500.5 except—.

(A) Replace clause 4.35.2(d) as follows:
   (d) have each gully riser provided with a grating or cover of a loose, pop-out type to relieve surcharge and allow adequate ventilation to the gully riser;

(B) Replace Table 4.11 with the following:

### WA C2.2 - Table 4.11

<table>
<thead>
<tr>
<th>Fixture</th>
<th>Point of measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor waste gully</td>
<td>Top surface level of the grate</td>
</tr>
<tr>
<td>Other fixtures</td>
<td>Overflow level of the fixture</td>
</tr>
<tr>
<td>Greywater diversion devices</td>
<td>Overflow level of the device</td>
</tr>
</tbody>
</table>

(C) Replace clause 4.20.2.1 (a) and insert (g) and (h) as follows:
   (a) at the downstream end of any branch drain that exits a building, adjacent to the junction into the main drain;
   (g) at the upstream and downstream ends of all branch drains that are external to a building; and
   (h) at every change of horizontal direction greater than 45°.

After C2.2(b), insert WA C2.2(c) as follows:

(c) Bends in pipes shall have a throat radius and shall be free from wrinkling and flattening.

**SECTION D  STORMWATER DRAINAGE SYSTEMS**

**PART D1  ROOF DRAINAGE SYSTEMS**

Part D1 does not apply in Western Australia.

**PART D2  SURFACE AND SUBSURFACE DRAINAGE SYSTEMS**

Part D2 does not apply in Western Australia.
SECTION E  HEATING, VENTILATION AND AIR-CONDITIONING

PART E1  HEATING, VENTILATION AND AIR-CONDITIONING
Part E1 does not apply in Western Australia.

SECTION F  ON-SITE WASTEWATER SYSTEMS

PART F1  ON-SITE WASTEWATER MANAGEMENT SYSTEMS
Part F1 does not apply in Western Australia.

PART F2  ON-SITE LIQUID TRADE WASTE SYSTEMS
Part F2 does not apply in Western Australia.
LIST OF AMENDMENTS
## CONTENTS

<table>
<thead>
<tr>
<th>LIST OF AMENDMENTS</th>
<th>List of Amendments Volume Three</th>
</tr>
</thead>
</table>

---

**SUPERSEDED**

LIST OF AMENDMENTS

List of Amendments Volume Three
This set of notes has been prepared by the Australian Building Codes Board to assist users in identifying changes incorporated in the 2011 edition of Volume Three of the NCC (NCC 2011).

The notes provide a description of major changes made from the 2004 Plumbing Code of Australia (PCA).

While the Australian Building Codes Board has attempted to include all major changes, the Board does not give any warranty nor accept any liability in relation to the contents of this list of amendments.

<table>
<thead>
<tr>
<th>PCA Reference</th>
<th>Changes and Commentary</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td></td>
</tr>
<tr>
<td>The National Construction Code Series</td>
<td>A new heading has been added to introduce the National Construction Code Series (NCC), an initiative of the Council of Australian Governments. The Plumbing Code of Australia is now referenced as the National Construction Code Series Volume Three — Plumbing Code of Australia. As a result of these changes, the introduction has been redrafted.</td>
</tr>
<tr>
<td><strong>Section A</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Throughout the document, the term &quot;people with a disability&quot; replaces &quot;people with disabilities&quot;.</td>
</tr>
<tr>
<td></td>
<td>&quot;Plumbing or Drainage Solution&quot; replaces &quot;Plumbing Solution&quot; in some definitions and throughout the text in order to make it clear that a requirement applies to both plumbing and drainage work.</td>
</tr>
<tr>
<td>A0.3</td>
<td>Inserted lead to align with Volume One of the NCC.</td>
</tr>
<tr>
<td>A0.8(c)</td>
<td>Inserted new (c) to align with Volume One of the NCC.</td>
</tr>
<tr>
<td>A0.10</td>
<td>Inserted new section to align with Volume One of the NCC.</td>
</tr>
<tr>
<td>A1.1</td>
<td>The following definitions have been inserted or amended:</td>
</tr>
<tr>
<td>Accessible</td>
<td>New defined term in line with Volume One of the NCC.</td>
</tr>
<tr>
<td>Administering body</td>
<td>New definition as a result of restructuring Section G and changes to the WaterMark scheme.</td>
</tr>
<tr>
<td>Average recurrence interval</td>
<td>New definition.</td>
</tr>
<tr>
<td>Certification Mark</td>
<td>Definition amended as Standards Australia is scheduled to divest itself of ownership of the trademark.</td>
</tr>
<tr>
<td>Conformity Assessment Body (CAB)</td>
<td>Replaced by 'WaterMark Conformity Assessment Body (WMCAB)'.</td>
</tr>
<tr>
<td>Drinking Water</td>
<td>Updated to use the correct title of the Drinking Water Guidelines.</td>
</tr>
<tr>
<td>PCA Reference</td>
<td>Changes and Commentary</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Energy Conservation</td>
<td>The definition has been deleted because it is no longer used.</td>
</tr>
<tr>
<td>Equivalent</td>
<td>The definition has been amended to provide greater clarity.</td>
</tr>
<tr>
<td>Expert</td>
<td>The definition has been deleted because it is no longer used.</td>
</tr>
<tr>
<td>Licence</td>
<td>Licence is no longer a defined term.</td>
</tr>
<tr>
<td>Plumbing</td>
<td>Definition has been altered to include HVAC plumbing.</td>
</tr>
<tr>
<td>Product</td>
<td>New definition.</td>
</tr>
<tr>
<td>Specification</td>
<td>The definition has been amended to remove reference to Standards Committees.</td>
</tr>
<tr>
<td>WaterMark</td>
<td>New definition with link to a graphic of the trademark.</td>
</tr>
<tr>
<td>WaterMark Certificate of Conformity (WMCC)</td>
<td>The definition replaces the term 'Conformity Assessment Body (CAB)'.</td>
</tr>
<tr>
<td>WaterMark Conformity Assessment Body (WMCAB)</td>
<td>New definition as a result of restructuring Section G.</td>
</tr>
<tr>
<td>WaterMark Certification Scheme (WMCS)</td>
<td>The definition has been amended in preparation for Standards Australia scheduled divestment.</td>
</tr>
<tr>
<td>WaterMark Product Database</td>
<td>The definition has been deleted because it is no longer used.</td>
</tr>
<tr>
<td>WS-014</td>
<td>New definition as a result of restructuring Section G.</td>
</tr>
<tr>
<td>WS-031</td>
<td>The definition has been deleted because it is no longer used.</td>
</tr>
<tr>
<td>Table A1.3</td>
<td>The following references have been inserted or amended.</td>
</tr>
<tr>
<td>AS 1428.2</td>
<td>New reference to Part 2 introduced as a result of its use in public transport buildings.</td>
</tr>
<tr>
<td>AS 2441</td>
<td>Update to 2005 version of the standard.</td>
</tr>
<tr>
<td>AS/NZS 3500.1</td>
<td>Update reference up to and including Amendment 2.</td>
</tr>
<tr>
<td>AS/NZS 3500.2</td>
<td>Update reference up to and including Amendment 3.</td>
</tr>
<tr>
<td>AS/NZS 3500.4</td>
<td>Update reference up to and including Amendment 2.</td>
</tr>
<tr>
<td>PCA Reference</td>
<td>Changes and Commentary</td>
</tr>
<tr>
<td>---------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>AS/NZS 3500.5</td>
<td>Update reference up to and including Amendment 4.</td>
</tr>
<tr>
<td>AS/NZS 4020</td>
<td>Update to 2005 version of the standard.</td>
</tr>
<tr>
<td>AS 4254</td>
<td>Change to 1995 version of the standard, to harmonise with building requirements.</td>
</tr>
<tr>
<td>AS 5200.000</td>
<td>2006 version of the standard replaces AS 5200</td>
</tr>
</tbody>
</table>

**Section B**

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1.2(b)</td>
<td>Reference to new disability access standards (AS 1428.1 and AS 1428.2) inserted.</td>
</tr>
<tr>
<td>BP2.6</td>
<td>Editorial change to make it clear that the provision of heated water is not mandatory, but where it is provided, supply taps and other operational controls must be suitable for use by persons with a disability.</td>
</tr>
<tr>
<td>B2.2(b)</td>
<td>Reference to new disability access standards (AS 1428.1 and AS 1428.2) inserted.</td>
</tr>
<tr>
<td>BO3</td>
<td>‘Serviceable life’ replaces ‘design life’, to bring the objective in line with other parts of the code and community expectations.</td>
</tr>
<tr>
<td>B3.2(a)(iii) and (x), (xi) and (xii)</td>
<td>Insertion of additional permissible uses of non-drinking water. Following sub–clauses renumbered.</td>
</tr>
</tbody>
</table>

**Section C**

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>C1.2(b)</td>
<td>Reference to new disability access standards (AS 1428.1 and AS 1428.2) inserted.</td>
</tr>
<tr>
<td>CP2.1 (i)</td>
<td>Insert word ‘sub-surface water’ to ensure clarity.</td>
</tr>
</tbody>
</table>

**Section D**

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>D1.2</td>
<td>Now permit roof drainage to comply with either AS/NZS 3500.3 or an acceptable construction practice in accordance with Volume Two of the BCA as appropriate.</td>
</tr>
</tbody>
</table>

**Section F**

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FP1.4(m)</td>
<td>‘Serviceable life’ replaces ‘design life’, to bring the requirements in line with other parts of the code and community expectations.</td>
</tr>
<tr>
<td>FP1.5(m)</td>
<td>‘Serviceable life’ replaces ‘design life’, to bring the requirements in line with other parts of the code and community expectations.</td>
</tr>
<tr>
<td>F1.2(e)</td>
<td>Insert new Deemed-to-Satisfy Provision for land application systems. These systems can now use AS/NZS 1547 for size determination, design, construction, installation, replacement, repair, alteration and maintenance. Following clause renumbered.</td>
</tr>
</tbody>
</table>

**Section G**

<table>
<thead>
<tr>
<th>Subsection</th>
<th>Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Section G describes the WaterMark scheme in detail. Reference to specific third parties such as committees have been removed.</td>
</tr>
</tbody>
</table>