



NATIONAL  
CONSTRUCTION  
CODE

2016

# VOLUME THREE

Plumbing Code of Australia

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# CONTENTS AND FEATURES INTRODUCTION

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Introduction

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**CONTENTS AND FEATURES INTRODUCTION**

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## INTRODUCTION

### THE NATIONAL CONSTRUCTION CODE

The National Construction Code (NCC) is an initiative of the Council of Australian Governments developed to incorporate all on-site construction requirements into a single code.

The NCC is produced and maintained by the Australian Building Codes Board (ABCB) on behalf of the Australian Government and each State and Territory Government.

The NCC is a uniform set of technical provisions for the design and construction of buildings and other structures, and *plumbing* and *drainage* systems throughout Australia. It allows for variations in climate and geological or geographic conditions.

### THE NCC – FORMAT

The NCC is published in three volumes. The Building Code of Australia (BCA) is Volume One and Two of the NCC and the Plumbing Code of Australia (PCA) is Volume Three of the NCC.

**VOLUME ONE:** contains the requirements for—

- (a) all Class 2 to 9 buildings; and
- (b) access requirements for people with a disability in Class 1b and 10a buildings; and
- (c) certain Class 10b structures including access requirements for people with a disability in Class 10b swimming pools.

**VOLUME TWO:** contains the requirements for—

- (a) Class 1 and 10a buildings (other than access requirements for people with a disability in Class 1b and 10a buildings); and
- (b) certain Class 10b structures (other than access requirements for people with a disability in Class 1b and 10a buildings); and
- (c) Class 10c private bushfire shelters.

**VOLUME THREE:** contains the requirements for *plumbing* and *drainage* associated with all classes of building.

The NCC is accompanied by other documents, comprising the NCC Consolidated Performance Requirements and a Guide to Volume One. Additional guidance material is also located on the ABCB website.

The NCC is drafted in a performance format allowing a choice of *Deemed-to-Satisfy Solutions* or flexibility to develop *Performance Solutions* based on existing or new innovative buildings, *plumbing* and *drainage products*, systems and designs.

When complying with the *Deemed-to-Satisfy Provisions*, or when developing *Performance Solutions* in order to comply with the NCC, consideration may need to be given to whether the solution impacts on compliance with other Parts of the NCC.

### THE GOAL

The goal of the NCC is to enable the achievement of nationally consistent, minimum necessary standards of relevant safety (including structural safety from fire), health, 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 is effective and proportional to the issues being addressed such that the regulation will generate benefits to society greater than the costs (that is, net benefits); and
- (c) there is no regulatory or non-regulatory alternative (whether under the responsibility of the Board or not) that would generate higher net benefits; and
- (d) the competitive effects of the regulation have been considered and the regulation is no more restrictive than necessary in the public interest.

## **THE AUSTRALIAN 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 safety, health, amenity and sustainability in the design, construction and performance of buildings. This is achieved through the NCC and the development of effective regulatory systems and appropriate non-regulatory solutions.

The Board comprises—

- (a) a Chair; and
- (b) the head of each Commonwealth, State and Territory department, statutory body, division, or agency that has the relevant administrative responsibility for NCC matters; and
- (c) a representative of the Australian Local Government Association (ALGA); and
- (d) representatives of the building and construction industry, including one representative with plumbing expertise.

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) a representative of the ABCB; 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.

## **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 appropriate State or Territory regulatory authority responsible for on-site *plumbing* or *drainage* installation matters.

The dates of adoption and amendments are shown in the “History of Adoption” division at the end of this Volume.



## **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, additions and deletions are contained in the Appendices to the PCA.

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

## **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 *Performance Solution* or the *Deemed-to-Satisfy Solution* including all relevant plans and other supporting documentation.
- (b) In cases where a *Performance 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.

# **GENERAL PROVISIONS**

- A0      Application**
- A1      Interpretation**
- A2      Acceptance of Design and Construction**
- A3      Documents Adopted by Reference**
- A4      Classification of Buildings and Structures**

## SECTION A CONTENTS

### SECTION A GENERAL PROVISIONS

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## PART A0 APPLICATION

### A0.1 Compliance with the NCC

Compliance with the NCC is achieved by satisfying the *Performance Requirements*.

### A0.2 Scope

- (a) Sections **B** to **F** of NCC Volume Three – the Plumbing Code of Australia (PCA) contain the requirements for the design, construction, installation, replacement, repair, alteration and maintenance of any part of a—
- (i) water service;
  - (ii) sanitary *plumbing* and *drainage* system;
  - (iii) stormwater *drainage* system;
  - (iv) heating, ventilation and air-conditioning system; or
  - (v) *on-site wastewater management system*.
- (b) Section **G** of the PCA contains explanatory information on the procedures for certification of *plumbing* and *drainage products* for authorised use in new installations, alterations, additions, replacement and repairs to existing installations.

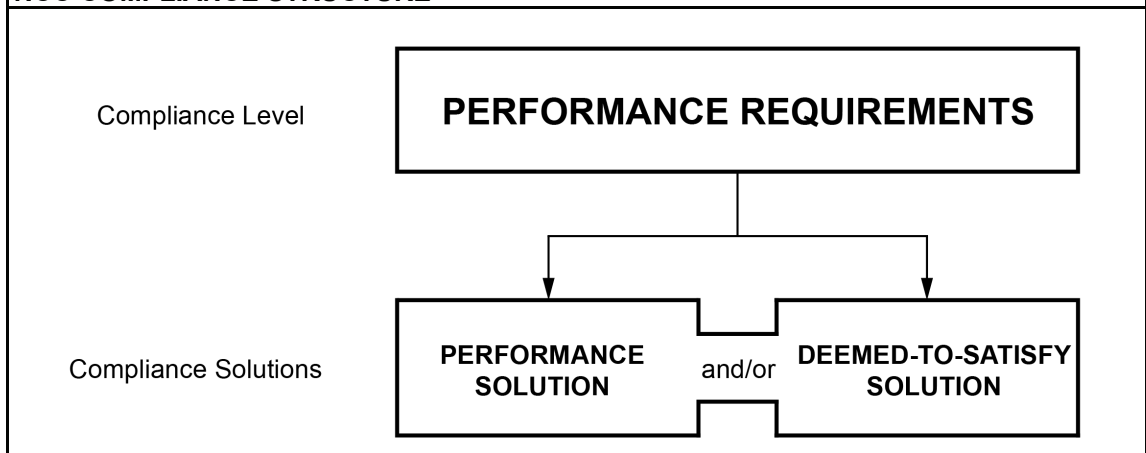
### A0.3 Meeting the Performance Requirements

The *Performance Requirements* can only be satisfied by a—

- (a) *Performance Solution*; or
- (b) *Deemed-to-Satisfy Solution*; or
- (c) combination of (a) and (b).

**Figure A0.3**

#### NCC COMPLIANCE STRUCTURE



**Figure A0.3**

**NCC COMPLIANCE STRUCTURE**

**Notes:**

1. The term *Performance Solution* was formerly known as *Alternative Solution*.
2. The terms *Performance Solution* and *Deemed-to-Satisfy Solution* were formerly used under the term *Plumbing and Drainage Solution*.

## A0.4 Performance Solutions

- (a) A *Performance Solution* must—
  - (i) comply with the *Performance Requirements*; or
  - (ii) be at least *equivalent* to the *Deemed-to-Satisfy Provisions*, and be assessed according to one or more of the *Assessment Methods*.
- (b) A *Performance Solution* will only comply with the NCC when the *Assessment Methods* used satisfactorily demonstrate compliance with the *Performance Requirements*.

## A0.5 Deemed-to-Satisfy Solutions

- (a) A *Deemed-to-Satisfy Solution* which complies with the *Deemed-to-Satisfy Provisions* is deemed to comply with the *Performance Requirements*.
- (b) A *Deemed-to-Satisfy Solution* may be assessed according to one or more of the *Assessment Methods*, as appropriate.

**Explanatory information:**

The majority of the *Deemed-to-Satisfy Solutions* provided in Volume Three are contained in referenced documents such as the AS/NZS 3500 suite of standards that are referenced in the *Deemed-to-Satisfy Provisions* of this Volume. The use of these referenced documents in combination with other relevant *Deemed-to-Satisfy Provisions* is deemed to be compliance with the *Performance Requirements*.

Although compliance may be self-evident, given the broad industry knowledge and understanding of the majority of these referenced documents, there may be a need to prove compliance to the authority having jurisdiction and this is achieved through the use of the *Assessment Methods*.

## A0.6 Assessment Methods

The following *Assessment Methods*, or any combination of them, can be used to determine that a *Performance Solution* or a *Deemed-to-Satisfy Solution* complies with the *Performance Requirements*, as appropriate:

- (a) Evidence to support that the use of a material or *product*, form of construction or design meets a *Performance Requirement* or *Deemed-to-Satisfy Provision* as described in **A2.2**.
- (b) *Verification Methods* such as—
  - (i) the *Verification Methods* in the NCC; or
  - (ii) such other *Verification Methods* as the authority having jurisdiction accepts for determining compliance with the *Performance Requirements*.

- (c) *Expert Judgment*.
- (d) Comparison with the *Deemed-to-Satisfy Provisions*.

**Explanatory Information:**

The *Assessment Methods* described above are applicable to the assessment of *Performance Solutions* or *Deemed-to-Satisfy Solutions* to determine that they comply with the relevant *Performance Requirements*, as appropriate.

The *Assessment Method* appropriate to materials or *products* listed on the *WaterMark Schedule of Products* is limited to **A0.6(a)**, where acceptable evidence of compliance is described in **A2.2(a)**.

## A0.7 Defined terms

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

## A0.8 Relevant Performance Requirements

In order to comply with the provisions of **A1.5** (to comply with Section A and the NCC *Performance Requirements*) the following method must be used to determine the *Performance Requirement* or *Performance Requirements* relevant to the *Performance Solution*:

- (a) Where a *Performance Requirement* is satisfied entirely by a *Performance Solution*:
  - (i) Identify the relevant *Performance Requirement* from the Section or Part to which the *Performance Solution* applies.
  - (ii) Identify *Performance Requirements* from other Sections or Parts that are relevant to any aspects of the *Performance Solution* proposed or that are affected by the application of the *Performance Solution*.
- (b) Where a *Performance Requirement* is satisfied by a *Performance Solution* in combination with a *Deemed-to-Satisfy Solution*:
  - (i) Identify the relevant *Deemed-to-Satisfy Provisions* of each Section or Part that is be the subject of the *Performance Solution*.
  - (ii) Identify the *Performance Requirements* from the same Sections or Parts that are relevant to the identified *Deemed-to-Satisfy Provisions*.
  - (iii) Identify *Performance Requirements* from other Sections or Parts that are relevant to any aspects of the *Performance Solution* proposed or that are affected by the application of the *Deemed-to-Satisfy Provisions*, that are the subject of the *Performance Solution*.

## PART A1 INTERPRETATION

### A1.1 Definitions

**Note:** States and Territories may vary or add to the definitions contained in [A1.1](#) at the relevant State or Territory Appendix.

If a word is not defined in this Part, 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.

**Administering body** means the body responsible for administering the [WaterMark Certification Scheme](#).

**Alpine area** means land—

- (a) likely to be subject to significant snowfalls; and
- (b) in New South Wales, ACT or Victoria more than 1200 m above the Australian Height Datum; and
- (c) in Tasmania more than 900 m above the Australian Height Datum.

**Alternative Solution** means a [Performance Solution](#).

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

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

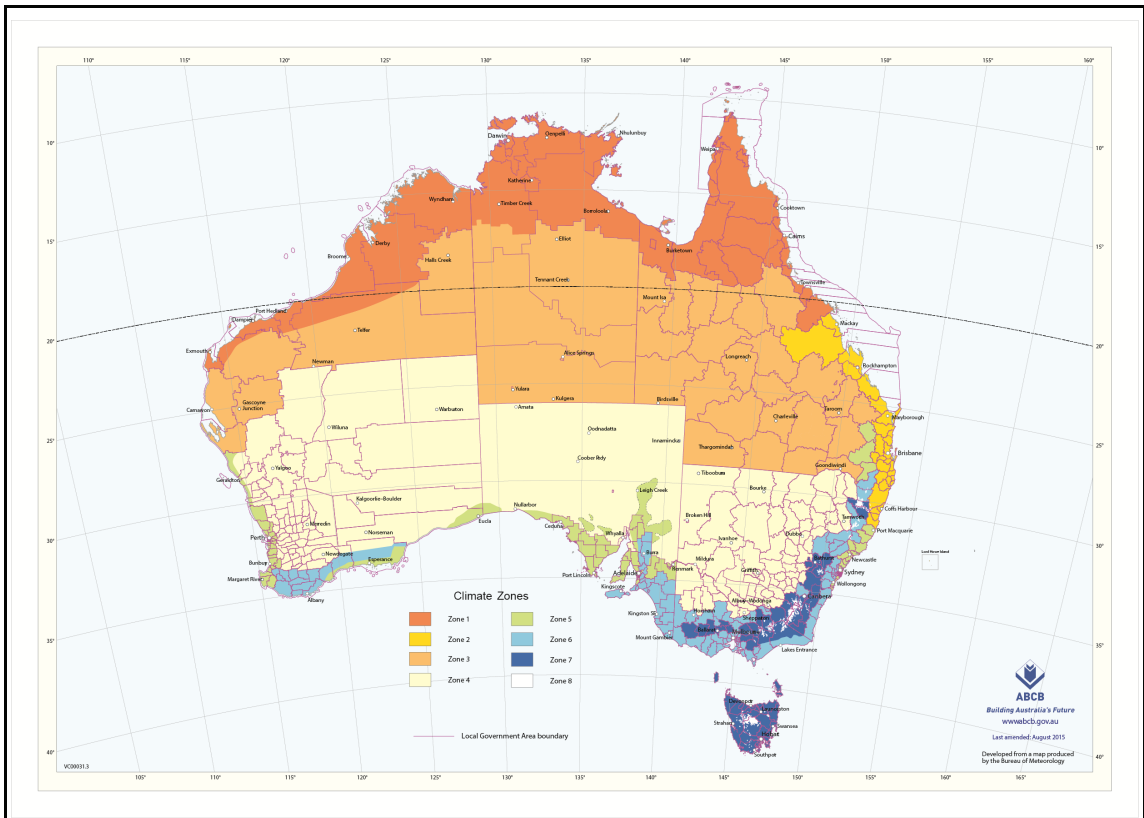
**Assessment Method** means a method used for determining that a [Performance Solution](#) or [Deemed-to-Satisfy Solution](#) complies with the [Performance Requirements](#).

**Average recurrence interval** applied to rainfall, means the expected or average interval between exceedances for a 5 minute duration rainfall intensity.

**Blockage** means an obstruction within a [drainage](#) system.

**Climate zone** means an area defined in [Figure A1.1](#) and in [Table A1.1](#) for specific locations, having energy efficiency provisions based on a range of similar climatic characteristics.

**Figure A1.1 — CLIMATE ZONES FOR THERMAL DESIGN**



**Notes:**

1. This map can be viewed in enlargeable form on the ABCB web site at [www.abcb.gov.au](http://www.abcb.gov.au).
2. A Zone 4 area in South Australia, other than a council area, at an altitude greater than 300 m above the Australian Height Datum is to be considered as Zone 5.  
 These areas have been defined in an enlarged format on the following maps produced by the Department of Planning, Transport and Infrastructure:  
**Adelaide Hills Council Climate Zone Map**  
**Barossa Council Climate Zone Map**  
**Regional Council of Goyder Climate Zone Map**  
 These maps can be viewed on the Government of South Australia website at [www.sa.gov.au](http://www.sa.gov.au)
3. Locations in *climate zone 8* are in *alpine areas*.



**Table A1.1 CLIMATE ZONES FOR THERMAL DESIGN - VARIOUS LOCATIONS**

Location	Climate zone	Location	Climate zone	Location	Climate zone	Location	Climate zone
<b>Australian Capital Territory</b>				Canberra	7		
<b>New South Wales</b>							
Albury	4	Byron Bay	2	Lord Howe Island	2	Sydney West	6
Armidale	7	Cobar	4	Moree	4	Tamworth	4
Batemans Bay	6	Coffs Harbour	2	Newcastle	5	Thredbo	8
Bathurst	7	Dubbo	4	Nowra	6	Wagga Wagga	4
Bega	6	Goulburn	7	Orange	7	Williamtown	5
Bellingen Shire - Dorrigo Plateau	7	Grafton	2	Perisher Smiggins	8	Wollongong	5
Bellingen Shire - Valley & seaboard	2	Griffith	4	Port Macquarie	5	Yass	6
Bourke	4	Ivanhoe	4	Sydney East	5		
Broken Hill	4	Lismore	2				
<b>Northern Territory</b>							
Alice Springs	3	Elliot	3	Renner Springs	3		
Darwin	1	Katherine	1	Tennant Creek	3		
<b>Queensland</b>							
Birdsville	3	Cunnamulla	3	Maryborough	2	Toowoomba	5
Brisbane	2	Longreach	3	Mount Isa	3	Torrens Creek	3
Bundaberg	2	Gladstone	2	Normanton	1	Townsville	1
Cairns	1	Labrador	2	Rockhampton	2	Warwick	5
Cooktown	1	Mackay	2	Roma	3	Weipa	1
<b>South Australia</b>							
Adelaide	5	Kingscote	6	Marree	4	Port Lincoln	5
Bordertown	6	Leigh Creek	5	Mount Gambier	6	Renmark	5
Ceduna	5	Lobethal	6	Murray Bridge	6	Tarcoola	4
Cook	4	Loxton	5	Oodnadatta	4	Victor Harbour	6
Elliston	5	Naracoorte	6	Port Augusta	4	Whyalla	4
<b>Tasmania</b>							
Burnie	7	Flinders Island	7	Launceston	7	Rossarden	7
Bicheno	7	Hobart	7	New Norfolk	7	Smithton	7
Deloraine	7	Huonville	7	Oatlands	7	St Marys	7
Devonport	7	King Island	7	Orford	7	Zeehan	7

**Table A1.1 CLIMATE ZONES FOR THERMAL DESIGN - VARIOUS LOCATIONS— continued**

Location	Climate zone	Location	Climate zone	Location	Climate zone	Location	Climate zone
<b>Victoria</b>							
Anglesea	6	Bright	7	Horsham	6	Swan Hill	4
Ararat	7	Colac	6	Melbourne	6	Traralgon	6
Bairnsdale	6	Dandenong	6	Mildura	4	Wangaratta	7
Ballarat	7	Echuca	4	Portland	6	Warrnambool	6
Benalla	6	Geelong	6	Sale	6	Wodonga	6
Bendigo	6	Hamilton	7	Shepparton	4		
<b>Western Australia</b>							
Albany	6	Cocos Island	1	Kalgoorlie-Boulder	4	Port Hedland	1
Balladonia	4	Derby	1	Karratha	1	Wagin	4
Broome	1	Esperance	5	Meekatharra	4	Wyndham	1
Bunbury	5	Exmouth	1	Northam	4		
Carnarvon	3	Geraldton	5	Pemberton	6		
Christmas Island	1	Halls Creek	3	Perth	5		

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

**Deemed-to-Satisfy Solution** means a method of satisfying the *Deemed-to-Satisfy Provisions*.

**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.

**Explanatory Information:**

See also the Australian Drinking Water Quality Guidelines produced by the National Health and Medical Research Council.

**Equivalent** means equivalent to the level of health, safety and *amenity* provided by the *Deemed-to-Satisfy Provisions*.

(*Tas, Expert Judgement*)

**Expert Judgment** means the judgment of a person who has the qualifications and experience to determine whether a *Performance Solution* or a *Deemed-to-Satisfy Solution* complies with the *Performance Requirements*.

**Explanatory Information:**

The level of qualification and/or experience required to determine whether a *Performance Solution* complies with the *Performance Requirements* may differ depending on the degree of complexity and the requirements of the regulatory authority. Practitioners should seek advice from the authority having jurisdiction for clarification as to what will be accepted.

**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*.

*(Tas, Network Utility Operator)*

**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.

**Explanatory Information:**

A *Network Utility Operator* in most States and Territories is the water and sewerage authority licensed to supply water and receive sewage and/or stormwater. The authority operates or proposes to operate a network that undertakes the distribution of water for supply and undertakes to receive sewage and/or stormwater drainage. This authority may be a licensed utility, local government body or council.

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

*(Tas, On-site wastewater management system)*

**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 *Performance Solution* or a *Deemed-to-Satisfy Solution* must meet.

**Performance Solution (Alternative Solution)** means a method of complying with the *Performance Requirements* other than by a *Deemed-to-Satisfy Solution*.

**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—

- (a) *Performance Solution* ; or
- (b) *Deemed-to-Satisfy Solution*; or
- (c) 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.

*(Tas, Professional engineer)*

**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 authority having jurisdiction.

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

*(Tas, Recognised expert)*

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

**Registered Testing Authority** means—

- (a) an organisation registered by the National Association of Testing Authorities (NATA) to test in the relevant field; or
- (b) an organisation outside Australia registered by an authority recognised by NATA through a mutual recognition agreement; or
- (c) an organisation recognised as being a *Registered Testing Authority* under legislation at the time the test was undertaken.

**Renewable energy** means energy that is derived from sources that are regenerated, replenished, or for all practical purposes cannot be depleted and the energy sources include, but are not limited to, solar, wind, hydroelectric, wave action and geothermal.

**Required** means *required* to satisfy a *Performance Requirement* or a *Deemed-to-Satisfy Provision* of the PCA as appropriate.

**Small-scale Technology Certificate** means a certificate issued under the Commonwealth Government's Small-scale Renewable Energy Scheme.

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

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

**WaterMark Certification Scheme** means the ABCB scheme for certifying and authorising *plumbing* and *drainage* materials and *products*.

**WaterMark Licence** means a licence issued by a *WaterMark Conformity Assessment Body*.

**WaterMark Schedule of Excluded Products** means the list maintained by the *administering body* of materials and *products* excluded from the *WaterMark Certification Scheme*.

**WaterMark Schedule of Products** means the list maintained by the *administering body* of materials and *products* included in the *WaterMark Certification Scheme*, and the specifications to which the materials and *products* can be certified.

**Explanatory Information:**

The *WaterMark Schedule of Products* and the *WaterMark Schedule of Excluded Products* can be viewed on the ABCB website at [www.abcb.gov.au](http://www.abcb.gov.au).

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

## 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* or *drainage* 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* or *drainage* 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 A3.1** 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 A3.1** (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 A3.1**

- (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 A3.1**, 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 NCC**

The NCC overrules in any difference arising between it and any Standard, rule, specification or provision in a document listed in **Table A3.1**.

## **A1.5 Compliance with all Performance Requirements**

Subject to **A1.6**, *plumbing* and *drainage* systems must be so designed, constructed and installed that they comply with the relevant provisions of Section **A** and the *Performance Requirements* of this Volume.

## **A1.6 Application of the NCC within a particular State or Territory**

For application within a particular State or Territory, this Volume of the NCC 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) A reference to a building in the NCC is a reference to an entire building or part of a building, as the case requires.
- (b) A reference to a *plumbing* or *drainage* system, or *product* in the PCA is a reference to an entire installation, system or *product*, or part of an installation, system or *product*, as the case requires.
- (c) A reference in a *Performance Requirement* of the NCC to "the degree necessary" means that consideration of all the criteria referred to in the *Performance Requirement* will determine the outcome appropriate to the circumstances. These words have been inserted to indicate that in certain situations it may not be necessary to incorporate any specific measures to meet the *Performance Requirement*.
- (d) A reference to Class 1a, 1b, 7a, 7b, 9a, 9b, 9c, 10a, 10b and 10c is a reference to the separate classification.
- (e) A reference to—
  - (i) Class 1 — is a reference to a Class 1a and 1b; and
  - (ii) Class 7 — is a reference to a Class 7a and 7b; and
  - (iii) Class 9 — is a reference to a Class 9a, 9b and 9c; and

- (iv) Class 10 — is a reference to a Class 10a, 10b and 10c.

## A1.8 Explanatory information

- (a) These elements of the PCA are non-mandatory. They are used to provide additional guidance on the application of particular Parts and clauses and do not need to be followed to meet the requirements of the PCA.
- (b) Explanatory Information identified for cross-volume consideration is also provided under certain *Deemed-to-Satisfy Provisions* to identify Parts of NCC Volumes One and Two – the Building Code of Australia (BCA) which may be relevant where the *plumbing* or *drainage* work being undertaken—
- (i) may interfere with the integrity of a building element or system; or
  - (ii) is subject to the requirements of the BCA.
- (c) Explanatory Information for the *Performance Requirements* contains both Objectives and Functional Statements. An Objective means a statement contained in the NCC which is considered to reflect community expectations. Functional Statements are statements which describe how a *plumbing* or *drainage* system achieves the Objectives. It is the ABCB's intent that the Objectives and Functional Statements be used as an aid to the interpretation of the NCC and not for determining compliance with the NCC.
- (d) The ABCB gives no warranty or guarantee that the Explanatory Information is correct or complete. The ABCB shall not be liable for any loss howsoever caused whether due to negligence or otherwise arising from the use of or reliance on the Explanatory Information.
- (e) The ABCB recommends that anyone seeking to rely on the Explanatory Information obtain their own independent expert advice in relation to *plumbing* or *drainage* or related activities.

*Tas A1.801*

## PART A2

## ACCEPTANCE OF DESIGN AND CONSTRUCTION

### A2.0 Transitional provisions (WaterMark Certification Scheme)

A reference in **A2.1(b)(i)** to the *WaterMark Certification Scheme* is a reference to the *WaterMark Certification Scheme* including the provisions of **Part G1** of NCC 2015 Volume Three until such time as the publication by the *administering body* of scheme rules which replace those provisions.

### 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 NCC, using materials and *products* that are fit for the purpose for which they are intended.
- (b) For the purposes of **(a)**, a material or *product* is fit for purpose if it is—
  - (i) listed on the *WaterMark Schedule of Products*, certified and authorised in accordance with the *WaterMark Certification Scheme*; or
  - (ii) listed on the *WaterMark Schedule of Excluded Products*;and is supported by evidence of suitability provided in accordance with **A2.2**.

*Tas A2.1(c)*

- (c) \* \* \* \* \*

- (d) A material or *product* intended for use in contact with *drinking water* must comply with AS/NZS 4020, and be supported by evidence of suitability in accordance with **A2.2**.

*Tas A2.1(e), (f), (g), (h), (i)*



### Explanatory information

#### Fit for purpose

**A2.1(a)** requires that each *plumbing* or *drainage* installation meets the requirements of the NCC, and that all materials and *products* used are fit for their intended purpose. The clause only applies to materials and *products* within the scope of the requirements of Volume Three of the NCC.

**A2.1(b)** provides two means of establishing that a material or *product* is fit for purpose. These are (i) that the material or *product* is certified and authorised under the *WaterMark Certification Scheme*, or (ii) that it is an 'excluded product'. Excluded products may be any *product* deemed not to require certification under the *WaterMark Certification Scheme*.

**A2.1(d)** requires that, notwithstanding (b), where a material or *product* is to be used in contact with *drinking water*, it needs to pass the relevant test set out in AS/NZS 4020.

In any case, evidence must be provided to support a claim that the material or *product* is fit for purpose. The acceptable forms of evidence which can be used are provided at **A2.2**.

#### New or innovative products

Under the rules of the *WaterMark Certification Scheme*, any material or *product* which is new or innovative, and that is not listed on either the *WaterMark Schedule of Products* or the *WaterMark Schedule of Excluded Products*, needs to be assessed and, if required, certified and authorised in accordance with those rules prior to its use in a *plumbing* or *drainage* installation.

Details of the *WaterMark Certification Scheme*, including the scheme rules, the *WaterMark Schedule of Products* and the *WaterMark Schedule of Excluded Products* are explained in **Section G** and on the ABCB website at [www.abcb.gov.au](http://www.abcb.gov.au).

## A2.2 Evidence of suitability

- (a) Evidence to support that a material or *product* subject to **A2.1(b)(i)** has been certified and authorised must be in the form of a *WaterMark Licence*.
- (b) Evidence to support that any other material or *product*, or a 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:

### Tas A2.2(b)(i)

- (i) \* \* \* \* \*
- (ii) A report issued by a *Recognised Expert* or a *Registered Testing Authority* showing that the material, *product*, design, form of construction or 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 NCC; 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.

- (iv) Any other form of documentary evidence that correctly describes the properties and performance of the material, form of construction or installation and, as *required*, demonstrates its suitability for use in the *plumbing* or *drainage* installation.
- (c) Any copy of documentary evidence submitted must be a complete copy of the original report or document.

### **Explanatory information**

#### **Products subject to WaterMark certification**

**A2.2(a)** clarifies that the only acceptable evidence of suitability for materials and *products* subject to certification and authorisation under the *WaterMark Certification Scheme* is a **WaterMark Licence**. Refer to **Section G** for further explanatory information.

#### **Products not subject to WaterMark certification**

For any material or *product* not subject to certification and authorisation under the *WaterMark Certification Scheme*, the acceptable forms of evidence of suitability are provided in **A2.2(b)**. These are broad ranging, and the authority having jurisdiction must be satisfied that the evidence provided is suitable for the material or *product* being installed.

#### **Suitability of design, construction and installation**

For a design, form of construction or installation, evidence which can be used to support a claim that a *Performance Requirement* or a *Deemed-to-Satisfy Provision* has been met is also provided in **A2.2(b)**.

In **A2.2(b)**, the same evidence can be used to support materials and *products* as well as design, construction and installation because in both cases it is the *Performance Requirements* or *Deemed-to-Satisfy Provisions* of the PCA which need to be met.

**Note:** When determining which form of evidence will be used under **A2.2(b)**, it is important to consider the appropriateness of the evidence to the claim, as some evidence may be more suited to installations, and others to materials and *products*.

## PART A3 DOCUMENTS ADOPTED BY REFERENCE

### A3.1 Schedule of referenced documents

ACT, SA, Tas

The Standards and other documents listed in **Table A3.1** are referred to in the PCA.

**Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS**

Document No.	Date	Title	PCA Clause
<b>AS 1056</b> Part 1	1991	Storage water heaters General requirements Amdt 1 Amdt 2 Amdt 3 Amdt 4 Amdt 5	<b>B2.4</b>
<b>AS/NZS 1200</b>	2000	Pressure equipment	<b>E1.2</b>
<b>AS 1271</b>	2003	Safety valves, other valves, liquid level gauges, and other fittings for boilers and unfired pressure vessels Amdt 1	<b>E1.2</b>
<b>AS 1324</b> Part 1	2001	Air filters for use in general ventilation and air- conditioning Application, performance and construction	<b>E1.2</b>
<b>AS 1345</b>	1995	Identification of the contents of pipes, conduits and ducts	<b>E1.2</b>
<b>AS 1358</b>	2004	Bursting discs and bursting disc devices - Application, selection, installation Amdt 1	<b>E1.2</b>
<b>AS 1428</b> Part 1	2009	Design for access and mobility General requirements for access – New building work Amdt 1	<b>B1.3, B2.3, C1.3</b>
Part 1	2001	General requirements for access – New building work	<b>B1.3, B2.3, C1.3</b>
Part 2	1992	Enhanced and additional requirements – Buildings and facilities	<b>B1.3, B2.3, C1.3</b>
<b>AS/NZS 1546</b> Part 1	1998	On-site domestic wastewater treatment units Septic tanks	<b>C2.2, F1.2</b>

*Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS — continued*

Document No.	Date	Title	PCA Clause
Part 2	2001	Waterless composting toilets	<b>C2.2, F1.2</b>
Part 3	2001	Aerated wastewater treatment systems	<b>C2.2, F1.2</b>
<b>AS/NZS 1547</b>	2000	On-site domestic wastewater management	<b>C2.2, F1.2</b>
<b>AS/NZS 1571</b>	1995	Copper – Seamless tubes for air-conditioning and refrigeration	<b>E1.2</b>
<b>AS/NZS 1668</b>		The use of mechanical ventilation and air-conditioning in buildings	
Part 1	2015	Fire and smoke control in multi-compartment buildings	<b>E1.2</b>
<b>AS 1668</b>		The use of mechanical ventilation and air-conditioning in buildings	
Part 2	2012	Mechanical ventilation in buildings Amdt 1	<b>E1.2</b>
<b>AS 2118</b>		Automatic fire sprinkler systems	
Part 1	1999	General Requirements Amdt 1	<b>B4.2</b>
Part 4	2012	Sprinkler protection for accommodation buildings not exceeding four storeys in height	<b>B4.2</b>
Part 5	1995	Automatic fire sprinkler systems - Domestic	<b>B4.2</b>
Part 6	2012	Combined sprinkler and hydrant systems in multi-storey buildings	<b>B4.2</b>
Part 9	1995	Piping support and installation	<b>B4.2</b>
<b>AS 2419</b>		Fire hydrant installations	
Part 1	2005	System design, installation and commissioning Amdt 1	<b>B4.2</b>
<b>AS 2441</b>	2005	Installation of fire hose reels Amdt 1	<b>B4.2</b>
<b>AS/NZS 3500</b>		Plumbing and Drainage	
Part 0	2003	Glossary of terms	<b>A1.1</b>
Part 1	2015	Water services	<b>B1.2, B3.2, B4.2, E1.2</b>
Part 2	2015	Sanitary plumbing and drainage	<b>C1.2, C2.2, E1.2, F1.2, F2.2</b>
Part 3	2015	Storm water drainage	<b>D1.2, D2.2</b>
Part 4	2015	Heated water services	<b>B2.2, B2.4 E1.2</b>

*Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS — continued*

Document No.	Date	Title	PCA Clause
Part 5	2012	Housing installations	<b>B1.2, B2.2, B3.2, C1.2, C2.2, D1.2, D2.2, F1.2</b>
<b>AS/NZS 3666</b>		Air handling and water systems of buildings – Microbial Control	
Part 1	2011	Design, installation and commissioning	<b>E1.2</b>
Part 2	2011	Operation and maintenance	<b>E1.2</b>
<b>AS/NZS 4020</b>	2005	Testing of products in contact with drinking water	<b>A2.1,</b>
<b>AS 4041</b>	2006	Pressure Piping	<b>E1.2</b>
<b>AS 4118.2.1</b>	1995	Fire Sprinkler Systems - Piping - General Amdt 1	<b>B4.2</b>
<b>AS/NZS 4234</b>	2008	Heated water systems – Calculation of energy consumption Amdt 1 Amdt 2 Amdt 3	<b>BV2.2, B2.4</b>
<b>AS 4254</b>		Ductwork for air-handling systems in buildings	
Part 1	2012	Flexible Duct	<b>E1.2</b>
Part 2	2012	Rigid Duct	<b>E1.2</b>
<b>AS 4426</b>	1997	Thermal insulation of pipework, ductwork and equipment – selection, installation and finish	<b>E1.2</b>
<b>AS 4508</b>	1999	Thermal resistance of insulation for ductwork used in building air conditioning Amdt 1	<b>E1.2</b>
<b>AS 4552</b>	2005	Gas fired water heaters for hot water supply and/or central heating	<b>B2.4</b>
<b>AS 5601</b>	2004	Gas Installations	<b>E1.2</b>

## PART A4

## CLASSIFICATION OF BUILDINGS AND STRUCTURES

### A4.1 Principles of classification

- (a) The classification of a building or part of a building is determined by the purpose for which it is designed, constructed or adapted to be used.
- (b) Where a term in [A4.2](#) or [A4.3](#) appears *italicised* (i.e. 'carpark'), but is not defined in [A1.1](#), that term has the meaning that it has in BCA Volume One.

### A4.2 Classifications

Buildings are classified as follows:

**Class 1:** one or more buildings which in association constitute—

- (a) **Class 1a** — a single dwelling being—
  - (i) a detached house; or
  - (ii) one of a group of two or more attached dwellings, each being a building, separated by a *fire-resisting* wall, including a row house, terrace house, town house or villa unit; or
- (b) **Class 1b** —
  - (i) a boarding house, guest house, hostel or the like—
    - (A) with a total area of all floors not exceeding 300 m<sup>2</sup> measured over the enclosing walls of the Class 1b; and
    - (B) in which not more than 12 persons would ordinarily be resident; or
  - (ii) 4 or more single dwellings located on one allotment and used for short-term holiday accommodation,

which are not located above or below another dwelling or another Class of building other than a *private garage*.

**Class 2:** a building containing 2 or more *sole occupancy units* each being a separate dwelling.

**Class 3:** a residential building, other than a building of Class 1 or 2, which is a common place of long term or transient living for a number of unrelated persons, including—

- (a) a boarding house, guest house, hostel, lodging house or backpackers accommodation; or
- (b) a residential part of a hotel or motel; or
- (c) a residential part of a *school*; or
- (d) accommodation for the aged, children or people with disabilities; or
- (e) a residential part of a *health-care building* which accommodates members of staff; or
- (f) a residential part of a *detention centre*.

**Class 4:** a dwelling in a building that is Class 5, 6, 7, 8 or 9 if it is the only dwelling in the building.

**Class 5:** an office building used for professional or commercial purposes, excluding buildings of Class 6, 7, 8 or 9.

**Class 6:** a shop or other building for the sale of goods by retail or the supply of services direct to the public, including—

- (a) an eating room, café, restaurant, milk or soft drink bar; or
- (b) a dining room, bar area that is not an *assembly building*, shop or kiosk part of a hotel or motel; or
- (c) a hairdresser's or barber's shop, public laundry, or undertaker's establishment; or
- (d) a market or sale room, showroom, or *service station*.

**Class 7:** a building which is—

- (a) **Class 7a** — a *carpark*; or
- (b) **Class 7b** — for storage, or display of goods or produce for sale by wholesale.

**Class 8:** a laboratory, or a building in which a handicraft or process for the production, assembling, altering, repairing, packing, finishing, or cleaning of goods or produce is carried on for trade, sale, or gain.

**Class 9:** a building of a public nature—

- (a) **Class 9a** — a *health-care building*, including those parts of the building set aside as a laboratory; or
- (b) **Class 9b** — an *assembly building*, including a trade workshop, laboratory or the like in a primary or secondary *school*, but excluding any other parts of the building that are of another Class; or
- (c) **Class 9c** — an *aged care building*.

**Class 10:** a non-habitable building or structure—

- (a) **Class 10a** — a non-habitable building being a *private garage*, carport, shed, or the like; or
- (b) **Class 10b** — a structure being a fence, mast, antenna, retaining or freestanding wall, *swimming pool*, or the like; or
- (c) **Class 10c** — a *private bushfire shelter*.

### A4.3 Multiple classification

Each part of a building must be classified separately, and—

- (a)
  - (i) where parts have different purposes — if not more than 10% of the *floor area* of a *storey*, being the minor use, is used for a purpose which is a different classification, the classification applying to the major use may apply to the whole *storey*; and
  - (ii) the provisions of (i) do not apply when the minor use is a laboratory or a Class 2, 3 or 4 part; and
- (b) a plant room, machinery room, lift motor room, boiler room or the like must have the same classification as the part of the building in which it is situated; and
- (c) if a building has parts of different classification, each part must comply with all the relevant provisions for its classification.

#### **A4.4 Parts with more than one classification**

- (a) Notwithstanding [A4.3](#), a building or part of a building may have more than one classification applying to the whole building or to the whole of that part of the building.
- (b) If a building or part of a building has more than one classification applying to the whole building or part in accordance with [\(a\)](#), that building or part must comply with all the relevant provisions of the Plumbing Code of Australia for each classification.



SECTION **B**

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# **WATER SERVICES**

- B1 Cold Water Services**
- B2 Heated Water Services**
- B3 Non-Drinking Water Services**
- B4 Fire-Fighting Water Services**

## **SECTION B CONTENTS**

### **SECTION B WATER SERVICES**

#### **Part B1 COLD WATER SERVICES**

- B1.0 Scope
- Performance Requirements BP1.1 - BP1.4
- Verification Methods BV1
- B1.1 Deemed-to-Satisfy Provisions
- B1.2 General requirements
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#### **Part B2 HEATED WATER SERVICES**

- B2.0 Scope
- Performance Requirements BP2.1 - BP2.8
- Verification Methods BV2.1 - BV2.2
- B2.1 Deemed-to-Satisfy Provisions
- B2.2 General requirements
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- B2.5 Layout of taps
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#### **Part B3 NON-DRINKING WATER SERVICES**

- B3.0 Scope
- Performance Requirements BP3.1 - BP3.5
- Verification Methods BV3
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#### **Part B4 FIRE-FIGHTING WATER SERVICES**

- B4.0 Scope
- Performance Requirements BP4.1 - BP4.2
- Verification Methods BV4
- B4.1 Deemed-to-Satisfy Provisions
- B4.2 General requirements

## PART B1 COLD WATER SERVICES

*Tas B1.0*

### 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.

#### Explanatory information:

##### 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 *required* 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 access, as *required*, 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*.

**Explanatory information: Unintentional heating of cold water services**

Where installed in locations subjected to extreme summer temperatures (such as the roof space of a building), cold water services have the potential to become unintentionally heated. This can pose a hazard as the cold water supply may reach temperatures in excess of 45° Celsius, increasing the potential for scalding.

To reduce the likelihood of unintentional heating of cold water services, the following installation practices should be considered:

- (a) avoid long runs of pipework in locations exposed to solar heat gain; or
- (b) apply insulation, either directly to the pipework, or by using additional ceiling insulation material between the pipework and the solar heat source.

Avoidance of unintentional heating of cold water services in known areas of extreme summer temperatures may also assist in reducing water usage through drawing off of water which has become excessively heated.

### 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 suitable for their use.

### BP1.4 Materials and products

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

## VERIFICATION METHODS

### BV1

Compliance with **BP1.2** is verified either—

- (a) by calculation and certification 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*.

## PART B1 COLD WATER SERVICES

### *Deemed-to-Satisfy Provisions*

#### **B1.1 Deemed-to-Satisfy Provisions**

*Performance Requirements* **BP1.1** to **BP1.3** are satisfied by complying with **B1.2** to **B1.6**.

#### **B1.2 General requirements**

*NSW B1.2(a)*

*Qld B1.2(a)*

*SA B1.2(a)*

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with—
- (i) AS/NZS 3500.1; or
  - (ii) for a Class 1a or Class 10 building only, Section 2 of AS/NZS 3500.5; and the requirements of this Part.

- (b) \* \* \* \* \*

*Qld B1.2(c)*

- (c) The requirements of **(a)(ii)** do not apply to the main lines of a water service serving 20 or more Class 1a buildings on the same allotment.

*SA B1.2(d)*

*Tas B1.2(d), (e)*

*Vic B1.2(d), (e)*

#### **B1.3 Accessible fixtures and fittings**

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

- (a) AS 1428.1 (2001) and AS 1428.2 for all Class 9b and Class 10 public transport buildings; and
- (b) AS 1428.1 (2009) for all other buildings.

##### **Explanatory information: Cross-volume considerations**

Part F2 of NCC Volume One sets out the requirements for the design and construction of *accessible* sanitary facilities in Class 1b, 2 to 9, and 10a buildings.

#### **B1.4 Cross-connection control**

Where a property is served by a *non-drinking water* supply—

- (a) a backflow prevention device suitable for the degree of hazard and sized to suit the capacity of the *drinking water* service must be fitted to the *drinking water* service at—

*Deemed-to-Satisfy Provisions*

- (i) the meter; or
- (ii) the *point of connection*, where a meter is not installed; and
- (b) a low hazard backflow prevention device must be fitted to each external *drinking water* hose tap outlet.

## B1.5 Sanitary flushing

*Qld B1.5(a)*

- (a) A cistern or flushing valve used for the purpose of flushing a water closet pan must have a dual flushing mechanism that, when operated, discharges—
  - (i) for a 6/3 litre cistern—
    - (A) not less than 5.5 litres and not more than 6.5 litres for a full flush; and
    - (B) not less than 3.0 litres and not more than 3.5 litres for a reduced flush; and
  - (ii) for a 4.5/3 litre cistern—
    - (A) not less than 4.3 litres and not more than 4.7 litres for a full flush; and
    - (B) not less than 2.8 litres and not more than 3.2 litres for a reduced flush.
- (b) The volume of water discharged to flush a urinal must not exceed 2.5 litres for each—
  - (i) single urinal stall; or
  - (ii) 600 mm length of a continuous urinal wall, or part thereof.
- (c) Automatic or set-cycle cisterns must not be installed.

**Explanatory information:**

A programmed solenoid operated flushing system may be used if programmed to shut down during extended periods of non-occupancy of a building. Prior to installing this type of system further advice should be sought from the authority having jurisdiction. Where sensor control is used for urinal flushing, sensors should be located to avoid unnecessary 'nuisance' flushing triggered by pedestrian traffic.

## B1.6 Maximum flow rate for cold water outlets

- (a) A cold water outlet of a shower, basin, kitchen sink or laundry trough must have a maximum flow rate of not more than 9 litres per minute.
- (b) The requirements of (a) do not apply to a shower intended to provide rapid drenching of a person for emergency purposes, such as chemical removal.

**Explanatory information:**

**B1.6** applies to outlets which provide cold water only. The *Deemed-to-Satisfy Provisions* for outlets which deliver a combination of cold water and *heated water* are in **B2.6**.

*Deemed-to-Satisfy Provisions*

**Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to cold water services. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Excavations for pipework adjacent to a building and footings	B1 Structural Provisions	3.1.1 Earthworks
Termite management for attachments to buildings and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management
Penetrations for pipework through a vapour barrier	B1 Structural Provisions	3.2.2 Preparation
Pipework in timber bearers and joists of solid timber or engineered wood products	B1 Structural Provisions	3.4.0 Framing
Fittings, fixtures and pipework installations in steel framed construction	B1 Structural Provisions	3.4.2 Steel Framing
Penetrations through a fire-resisting wall or floor	C3 Protection of Openings	3.7.1 Fire Separation
Fixtures or fittings in a wet area	F1 Damp and Weatherproofing	3.8.1 Wet Areas and External Weatherproofing
Service pipework external to the building and penetrations through roof cladding in a bushfire prone area	G5 Construction in Bushfire Prone Areas	3.7.4 Bushfire Areas
Pipework sound insulation	F5 Sound Transmission and Insulation	3.8.6 Sound Insulation
Power supply to boiling and/or chilled water storage units	J6 Artificial Lighting and Power	Not applicable

## 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.



**Explanatory information:**

**OBJECTIVE**

**BO2**

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 *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
- (d) safeguard the environment; and
- (e) reduce greenhouse gas emissions; and
- (f) safeguard public and private infrastructure; and
- (g) 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 (f)

**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—

- (a) minimises any adverse impact on building occupants, the *Network Utility Operator's* infrastructure, property and the environment; and
- (b) facilitates the conservation of water.

**BF2.3**

To reduce greenhouse gas emissions, to the degree necessary, a *heated water* service is to—

- (a) be capable of efficiently using energy; and
- (b) obtain its heating energy from—
  - (i) a low greenhouse gas intensity energy source; or
  - (ii) an on-site *renewable energy* source; or
  - (iii) another process as reclaimed energy.

**Notes:**

The greenhouse gas intensity of energy sources vary. For example, natural gas has a low greenhouse gas intensity compared with electricity generated from coal.

For the purposes of **Functional Statement (b)**, the *renewable energy* source must be on-site (not GreenPower) and includes, but is not limited to solar, wind, hydroelectric, wave action and geothermal.

<b>PERFORMANCE REQUIREMENTS</b>
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### BP2.1 Heated water service water supply

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 *required* 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) \* \* \* \* \*
- (e) allow access, as *required*, 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 suitable for their use.

### BP2.7 Materials and Products

Materials and *products* used in *heated water* services must meet the requirements of **Part A2**.

Qld BP2.8

## BP2.8 Heated water service energy and water efficiency

A *heated water* service, including any associated distribution system and components must, to the degree necessary—

Vic BP2.8(a)

- (a) have features that facilitate the efficient use of energy appropriate to—
  - (i) the *heated water* service and its usage; and
  - (ii) the geographic location of the building; and
  - (iii) the location of the *heated water* service; and
  - (iv) the energy source; and

### Explanatory information:

**BP2.8(a)** permits the energy source of the *heated water* service to be considered. This means that the net energy obtained from *renewable energy* sources such as solar, geothermal, wind, and biofuels may be considered as 'free' energy in calculating the energy consumption. Similarly, heat reclaimed from another 'free' source such as a by-product from co-generation type processes as well as other industrial processes, which could otherwise be rejected from the building, could be considered as 'free' energy in calculating the energy consumption.

NSW BP2.8(b)

NT BP2.8(b)

Vic BP2.8(b)

- (b) obtain heating energy from—
  - (i) a source that has a greenhouse gas intensity that does not exceed 100 g CO<sub>2</sub> –e/MJ of thermal energy load; or
  - (ii) an on-site *renewable energy* source; or
  - (iii) another process as reclaimed energy; and

### Application:

**BP2.8(b)** only applies to a *heated water* service in new Class 1 and Class 10 buildings.

### Explanatory information:

1. The intent of **BP2.8(b)** is to constrain the use of a high greenhouse gas intensity source of energy. It does not prevent the use of electricity because the greenhouse gas intensity is related to the thermal load rather than the energy consumption which is covered by **BP2.8(a)**. **BP2.8(b)** also contains the qualification that it is to be applied 'to the degree necessary' allowing electricity to be used, even by low efficiency plant, where there are no reasonable alternatives.
2. For the purposes of **BP2.8(b)** the *renewable energy* must be on-site (not GreenPower) and includes, but is not limited to, solar, wind, hydroelectric, wave action, and geothermal.

- (c) have features that facilitate the efficient use of water.

**Explanatory information:**

Excessive 'dead water' draw-off, i.e. where cooled water from the supply pipe is drained off prior to delivery of *heated water*, can result in water and energy wastage.

To improve the efficiency of *heated water* systems, the design should consider factors such as the number of outlets, their purpose and expected typical usage, and the distance between the water heater and each of the outlets. The *heated water* unit should be positioned nearest to the most used outlets, or installed to provide consistent coverage of the building. Where this is not viable, the use of an additional unit or flow and return pipe loop may need to be considered.

SA BP2.801

## VERIFICATION METHODS

### BV2.1

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*.

NSW BV2.2

NT BV2.2

Qld BV2.2

Vic BV2.2

### BV2.2

- (a) Compliance with **BP2.8(b)** for a heater in a *heated water* supply system is verified when the annual greenhouse gas intensity of the water heater does not exceed 100 g CO<sub>2</sub>-e/MJ of thermal energy load determined in accordance with AS/NZS 4234.
- (b) The annual greenhouse gas intensity of the water heater in (a) is the sum of the annual greenhouse gas emissions from each energy source in g CO<sub>2</sub>-e divided by the annual thermal energy load of the water heater.
- (c) The annual greenhouse gas emissions from each energy source in (b) is the product of—
  - (i) the annual amount of energy consumed from that energy source; and
  - (ii) the emission factor of—
    - (A) if the energy source is electricity, 272 g CO<sub>2</sub>-e/MJ; or
    - (B) if the energy source is liquified petroleum gas, 65 g CO<sub>2</sub>-e/MJ; or
    - (C) if the energy source is natural gas, 61 g CO<sub>2</sub>-e/MJ; or

(D) if the energy source is wood or biomass, 4 g CO<sub>2</sub>-e/MJ.

**Explanatory information:**

In [BV2.2](#), the symbol "g CO<sub>2</sub>-e/MJ" means "grams of Carbon Dioxide equivalent per megajoule/s".

*SA BV2.201*

## PART B2 HEATED WATER SERVICES

### *Deemed-to-Satisfy Provisions*

#### **B2.1 Deemed-to-Satisfy Provisions**

*Performance Requirements* **BP2.1** to **BP2.6** and **BP2.8** are satisfied by complying with **B2.2** to **B2.6**.

#### **B2.2 General requirements**

*NSW B2.2(a)*

*Qld B2.2(a)*

*SA B2.2(a)*

*Vic B2.2(a)*

- (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; or
  - (ii) for a Class 1a or Class 10 building only, Section 3 of AS/NZS 3500.5; and the requirements of this Part.
- (b) \* \* \* \* \*
- (c) A solar *heated water* supply system for food preparation and sanitary purposes, where installed in a new building in *climate zones* 1, 2 or 3, is not *required* to comply with—
  - (i) Section 8 of AS/NZS 3500.4; or
  - (ii) for new Class 1a and Class 10 buildings, Section 3.33 of AS/NZS 3500.5.

#### **B2.3 Accessible fixtures and fittings**

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

- (a) AS 1428.1 (2001) and AS 1428.2 for all Class 9b and Class 10 public transport buildings; and
- (b) AS 1428.1 (2009) for all other buildings.

##### **Explanatory information: Cross-volume considerations**

Part F2 of NCC Volume One sets out the requirements for the design and construction of *accessible* sanitary facilities in Class 1b, 2 to 9, and 10a buildings.

*NSW B2.4*

*NT B2.4*

*Qld B2.4*

*SA B2.4*

*Deemed-to-Satisfy Provisions*

*Vic B2.4*

## **B2.4 Water heater in a heated water supply system**

In a new Class 1 or Class 10 building—

*Tas B2.4(a)*

- (a) a water heater in a *heated water* supply system must be—
  - (i) a solar heater complying with (b); or
  - (ii) a heat pump heater complying with (b); or
  - (iii) a gas water heater complying with (c); or
  - (iv) an electric resistance water heater only in the circumstances described in (d); or
  - (v) a wood fired thermosiphon water heater or direct fired water heater each complying with AS/NZS 3500.4; and
- (b) a solar heater and a heat pump heater must have—
  - (i) for a building with 1 or 2 bedrooms—
    - (A) at least 14 *Small-scale Technology Certificates* for the zone where it is being installed; or
    - (B) an energy saving of not less than 40% in accordance with AS/NZS 4234 for a "small" load system; and
  - (ii) for a building with 3 or 4 bedrooms—
    - (A) at least 22 *Small-scale Technology Certificates* for the zone where it is being installed; or
    - (B) an energy saving of not less than 60% in accordance with AS/NZS 4234 for a "medium" load system; and
  - (iii) for a building with more than 4 bedrooms—
    - (A) at least 28 *Small-scale Technology Certificates* for the zone where it is being installed; or
    - (B) an energy saving of not less than 60% in accordance with AS/NZS 4234 for a "large" load system; and

**Explanatory information:**

In colder climates the performance of some heat pumps may diminish.

- (c) a gas heater must be rated not less than 5 stars in accordance with AS 4552; and

*Tas B2.4(d)*

- (d) an electric resistance water heater with no storage or a *heated water* delivery of not more than 50 litres in accordance with AS 1056.1 may be installed when—
  - (i) the building has—
    - (A) not more than 1 bedroom; and
    - (B) not more than 1 electric resistance water heater installed; or
  - (ii) the building has—

*Deemed-to-Satisfy Provisions*

- (A) a water heater that complies with (b) or (c); and
- (B) not more than 1 electric resistance water heater installed; or
- (iii) the greenhouse gas emission intensity of the public electricity supply is low.

ACT B2.4(e), (f)

SA B2.401

## B2.5 Layout of taps

- (a) Where both a *heated water* tap and a cold water tap are installed, the *heated water* tap must be installed to the left of, or above, the cold water tap.
- (b) The requirements of (a) apply only where—
  - (i) each tap controls a separate outlet; or
  - (ii) both taps control a combined flow of water delivered through a single outlet.

## B2.6 Maximum flow rates for heated water outlets

- (a) A *heated water* outlet of a shower, basin, kitchen sink, or laundry trough must have a maximum flow rate of not more than 9 litres per minute.

**Explanatory information:**

A *heated water* outlet includes an outlet which delivers any combination of *heated water* and cold water.

- (b) The requirements of (a) do not apply to a shower intended to provide rapid drenching of a person for emergency purposes, such as chemical removal.



*Deemed-to-Satisfy Provisions*

**Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to *heated water* services. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Excavations for pipework adjacent to a building and footings	B1 Structural Provisions	3.1.1 Earthworks
Termite management for attachments to a building and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management
Penetrations for pipework through a vapour barrier	B1 Structural Provisions	3.2.2 Preparation
Pipework in timber bearers and joists of solid timber or engineered wood products	B1 Structural Provisions	3.4.0 Framing
Fittings, fixtures and pipework installations in steel framed construction	B1 Structural Provisions	3.4.2 Steel Framing
Penetrations through a fire-resisting wall or floor	C3 Protection of Openings	3.7.1 Fire Separation
Fixtures or fittings in a wet area	F1 Damp and Weatherproofing	3.8.1 Wet Areas and External Weatherproofing
Service pipework external to the building and penetrations through roof cladding in a bushfire prone area	G5 Construction in Bushfire Prone Areas	3.7.4 Bushfire Areas
Pipework sound insulation	F5 Sound Transmission and Insulation	3.8.6 Sound Insulation
Central heating pipework	J5 Air-conditioning and Ventilation Systems	3.12.5 Services
Energy consumption monitoring for water heaters	J8 Facilities for energy monitoring	Not Applicable

## 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.

#### Explanatory information:

##### 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 B3.3.
- (b) A *non-drinking water* service is not to have a cross connection with a *drinking water* service.

## BP3.2 Identification

Pipes, 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 *required* 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 access, as *required*, 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 suitable 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 METHODS

## 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 Provisions**

*Performance Requirements* **BP3.1** to **BP3.4** are satisfied by complying with **B3.2** to **B3.3**.

#### **B3.2 General requirements**

(a) \* \* \* \* \*

*NSW B3.2(b)*

*Qld B3.2(b)*

*Vic B3.2(b)*

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

(i) AS/NZS 3500.1; or

(ii) for a Class 1a or Class 10 building only, Section 2 of AS/NZS 3500.5;

and the requirements of this Part.

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

*Qld B3.201, Qld B3.202*

#### **B3.3 Distribution of non-drinking water**

The distribution of *non-drinking water* must be limited to the following uses:

- (a) Garden watering.
- (b) Toilet and urinal flushing.
- (c) Clothes washing.
- (d) Vehicle washing.
- (e) Path/wall washing.
- (f) Industrial purposes.
- (g) Fire-fighting.
- (h) Dust suppression.
- (i) Any other use authorised by the authority having jurisdiction.

*Qld B3.3(j), (k), (l)*

*Deemed-to-Satisfy Provisions*

**Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to *non-drinking water* services. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Excavations for pipework adjacent to a building and footings	B1 Structural Provisions	3.1.1 Earthworks
Termite management for attachments to a building and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management
Penetrations for pipework through a vapour barrier	B1 Structural Provisions	3.2.2 Preparation
Pipework in timber bearers and joists of solid timber or engineered wood products	B1 Structural Provisions	3.4.0 Framing
Fittings, fixtures and pipework installations in steel framed construction	B1 Structural Provisions	3.4.2 Steel Framing
Penetrations through a fire-resisting wall or floor	C3 Protection of Openings	3.7.1 Fire Separation
Fixtures or fittings in a wet area	F1 Damp and Weatherproofing	3.8.1 Wet Areas and External Weatherproofing
Service pipework external to the building and penetrations through roof cladding in a bushfire prone area	G5 Construction in Bushfire Prone Areas	3.7.4 Bushfire Areas
Pipework sound insulation	F5 Sound Transmission and Insulation	3.8.6 Sound Insulation

## PART B4 FIRE-FIGHTING WATER SERVICES

NSW B4

NT B4

Qld B4

### B4.0 Scope

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.

#### Explanatory information:

##### OBJECTIVE

##### BO4

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 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 *required* for the correct functioning of the equipment; and
- (c) avoids the likelihood of leakage or failure including uncontrolled discharges; and
- (d) provides access, as *required*, 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](#).

<b>VERIFICATION METHODS</b>
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### BV4

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

## PART B4 FIRE-FIGHTING WATER SERVICES

### *Deemed-to-Satisfy Provisions*

#### **B4.1 Deemed-to-Satisfy Provisions**

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

#### **B4.2 General requirements**

- (a) Fire-fighting water services for buildings and structures to which NCC Volume One applies must comply with the requirements of Part E1 of NCC Volume One.
- (b) The installation of a fire-fighting water service must be in accordance with AS/NZS 3500.1.

##### *Vic B4.2(c)*

- (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.



*Deemed-to-Satisfy Provisions*

**Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to fire-fighting water services. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Excavations for pipework adjacent to a building and footings	B1 Structural Provisions	3.1.1 Earthworks
Termite management for attachments to a building and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management
Penetrations for pipework through a vapour barrier	B1 Structural Provisions	3.2.2 Preparation
Pipework in timber bearers and joists of solid timber or engineered wood products	B1 Structural Provisions	3.4.0 Framing
Fittings, fixtures and pipework installations in steel framed construction	B1 Structural Provisions	3.4.2 Steel Framing
Penetrations through a fire-resisting wall or floor	C3 Protection of Openings	3.7.1 Fire Separation
Service pipework external to the building and penetrations through roof cladding in a bushfire prone area	G5 Construction in Bushfire Prone Areas	3.7.4 Bushfire Areas
Pipework sound insulation	F5 Sound Transmission and Insulation	3.8.6 Sound Insulation

SECTION

C

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# 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
- Performance Requirements CP1.1 - CP1.3
- Verification Methods CV1
- C1.1 Deemed-to-Satisfy Provisions
- C1.2 General requirements
- C1.3 Accessible fixtures and fittings

#### **Part C2    Sanitary Drainage Systems**

- C2.0 Scope
- Performance Requirements CP2.1 - CP2.3
- Verification Methods CV2
- C2.1 Deemed-to-Satisfy Provisions
- C2.2 General requirements

## 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 including from sanitary fixtures and appliances to an *approved disposal system*.

#### Explanatory information:

##### 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 STATEMENTS

##### CF1.1

Sanitary fixtures and sanitary appliances 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 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 access, as *required* for maintenance of mechanical components, operational controls and for clearing *blockages*; and

## SANITARY PLUMBING AND DRAINAGE SYSTEMS

- (e) avoid the likelihood of damage from superimposed loads, ground movement or root penetration; and
- (f) avoid the likelihood of ingress of surface water, subsurface water or stormwater into the system; and
- (g) provide for the effective and efficient use of water; and
- (h) provide ventilation, as *required* to avoid hydraulic load imbalance.

### Explanatory information: Non-flushing (waterless) urinals

Where a non-flushing (waterless) urinal is to be installed to a sanitary *plumbing* system comprising copper, copper alloy or other metallic piping, undiluted discharge transported through such pipework may increase the likelihood of corrosion.

Practitioners should also be aware that undiluted discharge, transported through pipework of any material, can cause build-up of Struvite (ammonium magnesium phosphate) inside pipework, potentially causing *blockage* within the sanitary *plumbing* system.

## CP1.2 People with a disability

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

## CP1.3 Materials and Products

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

## VERIFICATION METHODS

### 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*.

## PART C1      SANITARY PLUMBING SYSTEMS

### *Deemed-to-Satisfy Provisions*

#### **C1.1    Deemed-to-Satisfy Provisions**

*Performance Requirements* **CP1.1** and **CP1.2** are satisfied by complying with **C1.2** and **C1.3**.

#### **C1.2    General requirements**

*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—
- (i) AS/NZS 3500.2; or
  - (ii) for a Class 1a or Class 10 building only, Section 4 of AS/NZS 3500.5; and the requirements of this Part.
- (b) \* \* \* \* \*

#### **C1.3    Accessible fixtures and fittings**

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

- (a) AS 1428.1 (2001) and AS 1428.2 for all Class 9b and Class 10 public transport buildings; and
- (b) AS 1428.1 (2009) for all other buildings.

#### **Explanatory information: Cross-volume considerations**

Part F2 of NCC Volume One sets out the requirements for the design and construction of *accessible* sanitary facilities in Class 1b, 2 to 9, and 10a buildings.

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**SANITARY PLUMBING AND DRAINAGE SYSTEMS**

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*Deemed-to-Satisfy Provisions*

**Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to sanitary *plumbing* systems. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Termite management for attachments to a building and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management
Penetrations for pipework through a vapour barrier	B1 Structural Provisions	3.2.2 Preparation
Pipework in timber bearers and joists of solid timber or engineered wood products	B1 Structural Provisions	3.4.0 Framing
Fittings, fixtures and pipework installations in steel framed construction	B1 Structural Provisions	3.4.2 Steel Framing
Penetrations through a fire-resisting wall or floor	C3 Protection of Openings	3.7.1 Fire Separation
Fixtures or fittings in a wet area	F1 Damp and Weatherproofing	3.8.1 Wet Areas and External Weatherproofing
Service pipework external to the building and penetrations through roof cladding in a bushfire prone area	G5 Construction in Bushfire Prone Areas	3.7.4 Bushfire Areas
Pipework sound insulation	F5 Sound Transmission and Insulation	3.8.6 Sound Insulation

## 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 including from sanitary fixtures and appliances to an *approved disposal system*.

#### Explanatory information:

##### 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 STATEMENTS

##### CF2.1

Sanitary fixtures and sanitary appliances 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 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 access, as *required* 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



## SANITARY PLUMBING AND DRAINAGE SYSTEMS

- (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**.

*Tas CP2.201*

### CP2.3 Materials and Products

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

## VERIFICATION METHODS

### 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*.

## PART C2      SANITARY DRAINAGE SYSTEMS

### *Deemed-to-Satisfy Provisions*

#### **C2.1    Deemed-to-Satisfy Provisions**

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

#### **C2.2    General requirements**

*ACT C2.2(a)*

*NSW C2.2(a)*

*NT C2.2(a)*

*Qld C2.2(a)*

*Vic C2.2(a)*

- (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; or
  - (ii) for a Class 1a or Class 10 building, Section 4 of AS/NZS 3500.5;
- and the requirements of this Part.

*Qld C2.2(b)*

- (b) The requirements of **(a)(ii)** do not apply to the main line of a sanitary *drainage* system serving 20 or more Class 1a buildings on the same allotment.
- (c) 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(d), (e), (f), (g), (h)*

*Tas C2.2 (d), (e)*

*Vic C2.2(d), (e)*

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**SANITARY PLUMBING AND DRAINAGE SYSTEMS**

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*Deemed-to-Satisfy Provisions*

**Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to sanitary *drainage* systems. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Excavations for pipework adjacent to a building and footings	B1 Structural Provisions	3.1.1 Earthworks
Termite management for attachments to a building and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management
Penetrations for pipework through a vapour barrier	B1 Structural Provisions	3.2.2 Preparation
Pipework in timber bearers and joists of solid timber or engineered wood products	B1 Structural Provisions	3.4.0 Framing
Fittings, fixtures and pipework installations in steel framed construction	B1 Structural Provisions	3.4.2 Steel Framing
Penetrations through a fire-resisting wall or floor	C3 Protection of Openings	3.7.1 Fire Separation

SECTION **D**

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# STORMWATER DRAINAGE SYSTEMS

**D1      Roof Drainage Systems**

**D2      Surface and Subsurface Drainage Systems**

## **SECTION D CONTENTS**

### **SECTION D STORMWATER DRAINAGE SYSTEMS**

#### **Part D1    Roof Drainage Systems**

- D1.0 Scope
- Performance Requirements DP1.1 - DP1.5
- Verification Methods DV1
- D1.1 Deemed-to-Satisfy Provisions
- D1.2 General requirements

#### **Part D2    Surface and Subsurface Drainage Systems**

- D2.0 Scope
- Performance Requirements DP2.1 - DP2.4
- Verification Methods DV2
- D2.1 Deemed-to-Satisfy Provisions
- D2.2 General requirements

## PART D1 ROOF DRAINAGE SYSTEMS

ACT D1

NSW D1

NT D1

Qld D1

SA D1

### 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.

#### Explanatory information:

##### 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 STATEMENTS

##### 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 *required* 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 access, as *required* 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**.

<b>VERIFICATION METHODS</b>
-----------------------------

## 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 Provisions**

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

#### **D1.2 General requirements**

*Tas D1.2*

*Vic D1.2*

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

- (a) AS/NZS 3500.3; or
- (b) for a Class 1 or Class 10 building—
  - (i) Section 5 of AS/NZS 3500.5; or
  - (ii) acceptable construction practice 3.1.2 and 3.5.2 of NCC Volume Two.

##### **Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to roof *drainage* systems. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Service pipework external to the building and penetrations through roof cladding within a bushfire prone area	G5 Construction in Bushfire Prone Areas	3.7.4 Bushfire Areas
Termite management for attachments to a building and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management



## PART D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

ACT D2

NSW D2

NT D2

Qld D2

SA 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*.

#### Explanatory information:

##### 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;
- (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 STATEMENTS

##### 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 access, as *required* 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**.

<b>VERIFICATION METHODS</b>
-----------------------------

## 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*.

## PART D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

### *Deemed-to-Satisfy Provisions*

#### D2.1 Deemed-to-Satisfy Provisions

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

#### D2.2 General requirements

##### *Tas D2.2*

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

- (a) AS/NZS 3500.3; or
- (b) for a Class 1 or Class 10 building, Section 5 of AS/NZS 3500.5.

##### **Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to stormwater *plumbing* systems. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Excavations for pipework adjacent to a building and footings	B1 Structural Provisions	3.1.1 Earthworks
Termite management for attachments to a building and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management
Penetrations for pipework through a vapour barrier	B1 Structural Provisions	3.2.2 Preparation
Pipework in timber bearers and joists of solid timber or engineered wood products	B1 Structural Provisions	3.4.0 Framing
Fittings, fixtures and pipework installations in steel framed construction	B1 Structural Provisions	3.4.2 Steel Framing
Penetrations through a fire-resisting wall or floor	C3 Protection of Openings	3.7.1 Fire Separation

SECTION

E

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# 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
- Performance Requirements EP1.1 - EP1.2
- Verification Methods EV1
- E1.1 Deemed-to-Satisfy Provisions
- E1.2 General requirements

## PART E1 HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

ACT E1

NSW E1

NT E1

Qld E1

SA E1

### 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.

#### Explanatory information:

##### 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 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.

###### EF2.2

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.

<b>PERFORMANCE REQUIREMENTS</b>
---------------------------------

### 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 access, as *required* 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**.

<b>VERIFICATION METHODS</b>
-----------------------------

### 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 Provisions**

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

#### **E1.2 General requirements**

- (a) Mechanical ventilation and air-conditioning systems for buildings and structures to which NCC Volume One or Two applies must comply with the requirements of the relevant Parts of NCC Volume One or Two, as appropriate.
- (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/NZS 1668.1, AS 1668.2, AS/NZS 3500.1, AS/NZS 3500.2, AS/NZS 3500.4, AS 4254.1, AS 4254.2, 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 control must be carried out in accordance with AS/NZS 3666.1 and AS/NZS 3666.2 as appropriate.

*Vic E1.2(f), (g), (h)*



*Deemed-to-Satisfy Provisions*

**Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to mechanical ventilation and air-conditioning systems. These include, but may not be limited to, the following:

	<b>NCC Volume One Class 2 to 9 buildings</b>	<b>NCC Volume Two Class 1 and 10 buildings</b>
Termite management for attachments to a building and penetrations through a slab	B1 Structural Provisions	3.1.3 Termite Risk Management
Penetrations for pipework through a vapour barrier	B1 Structural Provisions	3.2.2 Preparation
Pipework in timber bearers and joists of solid timber or engineered wood products	B1 Structural Provisions	3.4.0 Framing
Fittings, fixtures and pipework installations in steel framed construction	B1 Structural Provisions	3.4.2 Steel Framing
Penetrations through a fire-resisting wall or floor	C3 Protection of Openings	3.7.1 Fire Separation
Service pipework external to the building and penetrations through roof cladding in a bushfire prone area	G5 Construction in Bushfire Prone Areas	3.7.4 Bushfire Areas
Pipework sound insulation	F5 Sound Transmission and Insulation	3.8.6 Sound Insulation
Central heating pipework	J5 Air-conditioning and Ventilation Systems	3.12.5 Services

SECTION **F**

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# **ON-SITE WASTEWATER SYSTEMS**

- F1      On-site Wastewater Management Systems**
- F2      On-site Liquid Trade Waste Systems**

## **SECTION F CONTENTS**

### **SECTION F ON-SITE WASTEWATER SYSTEMS**

#### **Part F1 On-site Wastewater Management Systems**

- F1.0 Scope
- Performance Requirements FP1.1 - FP1.6
- Verification Methods FV1
- F1.1 Deemed-to-Satisfy Provisions
- F1.2 General requirements

#### **Part F2 On-site Liquid Trade Waste Systems**

- F2.0 Scope
- Performance Requirements FP2.1 - FP2.5
- Verification Methods FV2
- F2.1 Deemed-to-Satisfy Provisions
- F2.2 General requirements

## PART F1 ON-SITE WASTEWATER MANAGEMENT SYSTEMS

ACT F1

NSW F1

NT F1

Qld 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*.

#### Explanatory information:

##### 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 STATEMENTS

##### 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 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 requirements of the authority having jurisdiction; and

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ON-SITE WASTEWATER SYSTEMS

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- (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 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 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 wastewater to sewers, as appropriate.

## FP1.2

Wastewater must be discharged according to the requirements and agreement of the 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 safe access, as *required* 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 *required* treatment and storage capacity for the volume of waste and frequency of disposal; and
- (b) with *required* size, strength and rigidity for the nature, flow rates, volume of wastes and/or waste products which must be processed; and
- (c) with *required* vehicle access for collection, if necessary; and
- (d) to avoid the likelihood of contamination of any *drinking water* supplies; and

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ON-SITE WASTEWATER SYSTEMS

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- (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 access, as *required* for maintenance; and
- (h) incorporate provisions, as *required* 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.

<b>VERIFICATION METHODS</b>
-----------------------------

**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*.

PART F1

ON-SITE WASTEWATER MANAGEMENT SYSTEMS

*Deemed-to-Satisfy Provisions*

**F1.1 Deemed-to-Satisfy Provisions**

*Performance Requirements* **FP1.1** to **FP1.5** are satisfied by complying with **F1.2**.

**F1.2 General requirements**

- (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—
  - (i) AS/NZS 3500.2; or
  - (ii) for a Class 1a or Class 10 building only, Section 4 of AS/NZS 3500.5; and the requirements of this Part.
- (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.

*Tas F1.2(g), (h)*

**Explanatory information: Cross-volume considerations**

NCC Volumes One and Two deal with a number of areas of on-site construction which are relevant to *on-site wastewater management systems*. These include, but may not be limited to, the following:

	NCC Volume One Class 2 to 9 buildings	NCC Volume Two Class 1 and 10 buildings
Excavations for pipework adjacent to a building and footings	B1 Structural Provisions	3.1.1 Earthworks



## PART F2

## ON-SITE LIQUID TRADE WASTE SYSTEMS

ACT F2

NSW F2

NT F2

Qld 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.

#### Explanatory information:

#### 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 authority having jurisdiction and/or particular requirements of the receiving *Network Utility Operator*, where applicable, are achieved.

<b>PERFORMANCE REQUIREMENTS</b>
---------------------------------

### 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 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 authority having jurisdiction and the receiving *Network Utility Operator*.

### FP2.3

FP2.3 amended by PCA 2016

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 safe access, as *required* 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 *required* treatment and storage capacity for the volume of waste and frequency of disposal; and
- (b) with *required* size, strength and rigidity for the nature, flow rates, volume of wastes, by-products and residues which must be processed; and
- (c) with *required* vehicle access for collection, if necessary; and
- (d) with *required* 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**.

<b>VERIFICATION METHODS</b>
-----------------------------

## 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 liquid trade waste systems; or
- (b) by satisfying the required criteria when tested in accordance with a specified test method endorsed by a *recognised certification body*.

## PART F2

## ON-SITE LIQUID TRADE WASTE SYSTEMS

### *Deemed-to-Satisfy Provisions*

#### **F2.1 Deemed-to-Satisfy Provisions**

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

#### **F2.2 General requirements**

- (a) Where pre-treatment facilities are *required*, they must comply with the requirements of the 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.
- (b) Where the written agreement of the 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*.

*Tas F2.2(c)*

- (c) Where pre-treatment facilities are not *required* by the 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.

*Tas F2.2(d), (e)*

#### **Explanatory information: Cross-volume considerations**

Part B1 of NCC Volume One sets out requirements relevant to the excavation of pipework adjacent to a building and footings for the purposes of installing liquid trade waste systems in Class 2 to 9 buildings.

SECTION

**G**

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# 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

**PART G1****CERTIFICATION AND AUTHORISATION**

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The provisions of **Part G1**, which existed in the 2015 edition, have been relocated to the [WaterMark Certification Scheme](#) set out on the ABCB website at [www.abcb.gov.au](http://www.abcb.gov.au), subject to the transitional provisions at **A2.0**. The reference to **Part G1** has been retained to avoid changing the current numbering from that of the 2015 edition, and to provide an explanation of the [WaterMark Certification Scheme](#) and its relationship to the NCC.

**Explanatory information:****What is WaterMark?**

The *WaterMark Certification Scheme* is a mandatory certification scheme for *plumbing* and *drainage products* to ensure that *plumbing* and *drainage* materials and *products* are fit for purpose and appropriately authorised for use in *plumbing* installations.

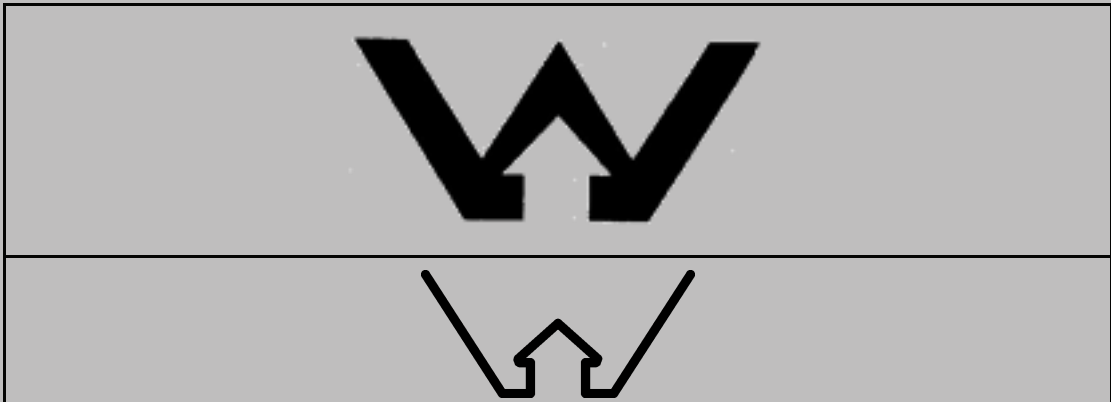
The NCC requires certain *plumbing* and *drainage* materials and *products* to be certified and authorised for use in a *plumbing* or *drainage* installation. These materials and *products* are to be certified through the *WaterMark Certification Scheme* and listed on the WaterMark Product Database.

The *WaterMark Certification Scheme* is governed by a series of documents (the Scheme Rules) that outline the requirements for evaluation and certification, risk assessment and the drafting of a WaterMark Technical Specification.

In order to achieve WaterMark Certification, the subject material or *product* needs to—

1. be tested by a *Registered Testing Authority*;
2. comply with an approved specification (either a relevant existing standard or an approved WaterMark Technical Specification);
3. be manufactured in accordance with an approved Quality Assurance Program; and
4. carry a warranty.

Materials and *products* complying fully with the applicable requirements of the *WaterMark Certification Scheme* are then eligible to be certified by a *WaterMark Conformity Assessment Body (WMCAB)* and listed on the WaterMark Product Database. Certified materials and *products* are identifiable by the WaterMark certification trade mark, shown below, which must be displayed on a material or *product* upon the granting of a *WaterMark Licence*.

**WaterMark certification trade mark****Materials and products that require WaterMark certification**

It is important to note that not all *plumbing* and *drainage* materials and *products* require WaterMark certification. All materials and products to be used in a *plumbing* and *drainage* installation require a risk evaluation. A comprehensive listing of predetermined materials and *product* types that require WaterMark certification is contained on the *WaterMark Schedule of Products*. Likewise, the *WaterMark Schedule of Excluded Products* lists predetermined materials and *products* that are not required to be certified under the *WaterMark Certification Scheme*.



# STATE AND TERRITORY APPENDICES - VARIATIONS AND ADDITIONS

**APPENDIX CONTENTS**

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**STATE AND TERRITORY APPENDICES - VARIATIONS AND ADDITIONS**

Commonwealth of Australia  
Australian Capital Territory  
New South Wales  
Northern Territory  
Queensland  
South Australia  
Tasmania  
Victoria  
Western Australia

# **COMMONWEALTH OF AUSTRALIA**

## **APPENDIX CONTENTS**

### **APPENDIX COMMONWEALTH OF AUSTRALIA**

#### **Commonwealth of Australia**

#### **Footnote: Other Legislation Affecting Buildings**

## Footnote: OTHER LEGISLATION AFFECTING BUILDINGS

In addition to any applicable provisions of this Code, there are a number of other legislative technical requirements and policies affecting the design, construction and/or performance of buildings 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. Aged Care Buildings

#### 1.1 Administering Agency

Department of Social Services

#### Relevant Legislation

Aged Care Act 1997

1999 Certification Assessment Instrument

### 2. Australian Capital Territory

#### 2.1 Administering Agency

Department of Finance

#### Relevant Legislation

Australian Capital Territory (Planning and Land Management) Act 1988

Parliament Act 1974

### 3. Child Care

#### 3.1 Administering Agency

Department of Education

#### Relevant Legislation

Child Care Benefit (Eligibility of Child Care Services for Approval and Continued Approval) Determination 2000

### 4. Christmas Island

#### 4.1 Administering Agency

Department of Infrastructure and Regional Development

#### Relevant Legislation

Casino Control Ordinance 1988

Casino Control Regulations 1988

Christmas Island Space Centre (APSC Proposal) Ordinance 2001

Christmas Island Space Centre (APSC Proposal) Regulations 2001

Gambling (Clubs) Ordinance 1978

Christmas Island Act 1958

## **5. Communications and Information Technology**

### **5.1 Administering Agency**

Department of Communications

#### **Relevant Legislation**

Australian Postal Corporation Act 1989

National Transmission Network Sale Act 1998

Telecommunications Act 1997

Telstra Corporation Act 1991

Telecommunications (Consumer Protection and Service Standards) Act 1999

## **6. Defence Buildings**

### **6.1 Administering Agency**

Department of Defence

#### **Relevant Legislation**

Defence Act 1903

#### **Relevant Regulations**

Defence (Areas Control) Regulations 1989

#### **Relevant Codes, Standards and Publications**

Manual of Fire Protection Engineering

Requirements for the Provision of Disabled Access and other Facilities for People with a disability in defence

Heating , Ventilation and Air Conditioning Policy

Microbial Control in Air Handling and Water Systems of Defence Buildings

Building Energy Performance Manual

Manual of Infrastructure Engineering - Electrical

Manual of Infrastructure Engineering - Bulk Fuel Installation Design

Defence Communications Cabling Standard

Defence Training Area Management Manual

Defence Safety Manual

Defence Security Manual

Defence Explosive Ordinance Publications

The defence Estate Quality Management System (<http://www.defence.gov.au/im/>) contains further requirements including the principles of development, zone planning, site selection, engineering requirements and environmental impact assessment and approval requirements.

## **7. Disability Discrimination**

### **7.1 Administering Agency**

Attorney-General's Department

#### **Relevant Legislation**

Disability (Access to Premises - Buildings) Standards 2010

Disability Discrimination Act 1992

Disability Standards for Accessible Public Transport 2002

## **8. Environment**

### **8.1 Administering Agency**

Department of the Environment

#### **Relevant Legislation**

Environmental Protection and Biodiversity Conservation Act 1999

### **8.2 Administering Agency**

Department of Industry

#### **Relevant Policy**

Energy Efficiency in Government Operations (2006)

## **9. Federal Airports**

### **9.1 Administering Agency**

Department of Infrastructure and Regional Development

#### **Relevant Legislation**

Airports Act 1996

Airports Regulations 1997

Airports (Building Control) Regulations 1996

Airports (Control of On-Airport Activities) Regulations 1997

Airports (Environmental Protection) Regulations 1997

Airports (Protection of Airspace) Regulations 1996

## **10. Jervis Bay Territory**

### **10.1 Administering Agency**

Department of Infrastructure and Regional Development

#### **Relevant Legislation**

Jervis Bay Territory Acceptance Act 1915

## **11. Occupational Health and Safety**

### **11.1 Administering Agency**

Department of Employment

**Relevant Legislation**

Work Health and Safety Act 2011

Work Health and Safety Regulations 2011

## **12. Australian Antarctic Territory**

### **12.1 Administering Agency**

Australian Antarctic Division of the Department of the Environment

**Relevant Legislation**

Antarctic Treaty (Environment Protection) Act 1980

Antarctic Treaty (Environment Protection) (Environmental Impact Assessment) Regulations 1993

Antarctic Treaty (Environment Protection) (Waste Management) Regulations 1994

Environment Protection and Biodiversity Conservation Act 1999

Environment Protection and Biodiversity Conservation Regulations 2000

## **13. Territory of Heard Island and McDonald Islands**

### **13.1 Administering Agency**

Australian Antarctic Division of the Department of the Environment

**Relevant Legislation**

Environment Protection and Management Ordinance 1987

Antarctic Treaty (Environment Protection) (Environmental Impact Assessment) Regulations 1993

Environment Protection and Biodiversity Conservation Act 1999

Heard Island and McDonald Islands Marine Reserve management plan in operation under the Environment Protection and Biodiversity Conservation Act 1999

Environment Protection and Biodiversity Conservation Regulations 2000

## **14. National or World Heritage Places**

### **14.1 Administering Agency**

Department of the Environment

**Relevant Legislation**

Environment Protection and Management Ordinance 1987

Antarctic Treaty (Environment Protection) (Environmental Impact Assessment) Regulations 1993

Environment Protection and Biodiversity Conservation Act 1999

Heard Island and McDonald Islands Marine Reserve management plan in operation under the Environment Protection and Biodiversity Conservation Act 1999

Environment Protection and Biodiversity Conservation Regulations 2000



## **15. National Parks**

### **15.1 Administering Agency**

Director of National Parks

#### **Relevant Legislation**

Commonwealth Reserve management plans in operation under the Environment Protection and Biodiversity Conservation Act 1999

Environment Protection and Biodiversity Conservation Act 1999

Environment Protection and Biodiversity Conservation Regulations 2000

## **16. Commonwealth funding for building work**

### **16.1 Administering Agency**

Department of Employment

#### **Relevant Legislation**

Fair Work (Building industry) Act 2012

Fair Work (Building industry) Regulations 2005

Fair Work (Building industry - Accreditation Scheme) Regulations 2005

Building Code 2013 (issued under Section 27 of the Fair Work (Building Industry) Act 2012)

## **17. Commonwealth buildings**

### **17.1 Administering Agency**

Department of Employment

#### **Relevant Legislation**

Fair Work (Building industry) Act 2012

Fair Work (Building industry) Regulations 2005

Fair Work (Building industry - Accreditation Scheme) Regulations 2005

Building Code 2013 (issued under Section 27 of the Fair Work (Building Industry) Act 2012)

# **AUSTRALIAN CAPITAL TERRITORY**

## APPENDIX CONTENTS

### APPENDIX AUSTRALIAN CAPITAL TERRITORY

#### Australian Capital Territory

#### **A GENERAL PROVISIONS**

ACT A1.1 Definitions

ACT A3.1 Schedule of referenced documents

#### **B WATER SERVICES**

ACT B2.4 Water heater in a heated water supply system

#### **C SANITARY PLUMBING AND DRAINAGE SYSTEMS**

ACT C2.2 General requirements

#### **D STORMWATER DRAINAGE SYSTEMS**

#### **E HEATING, VENTILATION AND AIR-CONDITIONING**

#### **F ON-SITE WASTEWATER SYSTEMS**

**Footnote: Other Legislation Affecting Buildings**

## 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 *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 *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.

### PART A3 DOCUMENTS ADOPTED BY REFERENCE

#### A3.1 Schedule of referenced documents

In Table A3.1, insert additional references as follows:

**ACT Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS**

Document No.	Title	PCA Clause
<b>AS 4013</b>	Domestic solid fuel burning appliances – method for determination of flue gas emission	<b>ACT A1.1</b>

## SECTION B WATER SERVICES

### PART B2 HEATED WATER SERVICES

After B2.4(d), insert ACT B2.4(e) and (f) as follows:

#### ACT B2.4 Water heater in a heated water supply system

- (e) a water heater determined by the Minister need not comply with (a) to (d) 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 (d); 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; and
- (f) a water heater need not comply with (a) to (e) 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) it is installed for use during construction of the *building* and is removed when the work is completed.

## SECTION C SANITARY PLUMBING AND DRAINAGE SYSTEMS

### PART C2 SANITARY DRAINAGE SYSTEMS

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

#### ACT C2.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary *drainage* system must be in accordance with the following:
  - (i) AS/NZS 3500.2 with the following variations and additions:
    - (A) Substitute clause 4.5.2 as follows:
 

4.5.2 A reflux valve cannot replace an overflow relief gully (ORG) at any time.
    - (B) After clause 4.7, insert clause 4.7A as follows:

4.7A Sewer manholes shall be installed at the following locations:

- (a) at the beginning and end of any line DN 150 or larger; and
- (b) at any change of direction on a line DN 150 or larger; and
- (c) at the junction of two pipes both of which are DN 150 or larger; and
- (d) at the confluence of three or more pipes where any of the pipes are DN 150 or larger; and at intervals of not more than 100 metres on any line that is DN 150 or larger.

(C) Substitute 14.2.3 as follows:

14.2.3

- (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.

(ii) The requirements of this Part.

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

- (d) 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.
- (e) 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.
- (f) 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 degrees 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.
- (g) All vertical jump ups on house *drainage* must be extended to ground level and finished with a removable inspection opening.
- (h) **Building over drains:**

When an extension, fully enclosed structure or the like passes over an existing drain, that part of the drain shall be tested for soundness as per section 15 of AS/NZS 3500.2, or

clause 4.47 of AS/NZS 3500.5. If the drain is found to be defective then it should be satisfactorily repaired or replaced.

## 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.

## 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.

### 1. Plumbing and Drainage

#### 1.1 Administering Agency

Chief Minister, Treasury and Economic Development Directorate

**Relevant Legislation**

Water and Sewerage Act 2000

**2. Building**

**2.1 Administering Agency**

Chief Minister, Treasury and Economic Development Directorate

**Relevant Legislation**

Building Act 2004

**3. Health**

**3.1 Administering Agency**

Health Directorate

**Relevant Legislation**

Health Act 1993

**4. Environment**

**4.1 Administering Agency**

Environment and Planning Directorate

**Relevant Legislation**

Environment Protection Act 1997

**5. Gas**

**5.1 Administering Agency**

Chief Minister, Treasury and Economic Development Directorate

**Relevant Legislation**

Gas Safety Act 2000

**6. Electrical**

**6.1 Administering Agency**

Chief Minister, Treasury and Economic Development Directorate

**Relevant Legislation**

Electricity Safety Act 1971



# **NEW SOUTH WALES**

## APPENDIX CONTENTS

### APPENDIX NEW SOUTH WALES

#### New South Wales

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NSW B3.2 General requirements

#### **C        SANITARY PLUMBING AND DRAINAGE SYSTEMS**

NSW C1.2 General requirements  
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#### **D        STORMWATER DRAINAGE SYSTEMS**

#### **E        HEATING, VENTILATION AND AIR-CONDITIONING**

#### **F        ON-SITE WASTEWATER SYSTEMS**

**Footnote: Other Legislation Affecting Buildings**

## SECTION B WATER SERVICES

### PART B1 COLD WATER SERVICES

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

#### NSW B1.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with the following:
  - (i) AS/NZS 3500.1 with the following additions:
    - (A) After clause 5.3.2(k) add (l) as follows:
      - (l) 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 clause 4.6.3.3 insert clause 4.7 as follows:

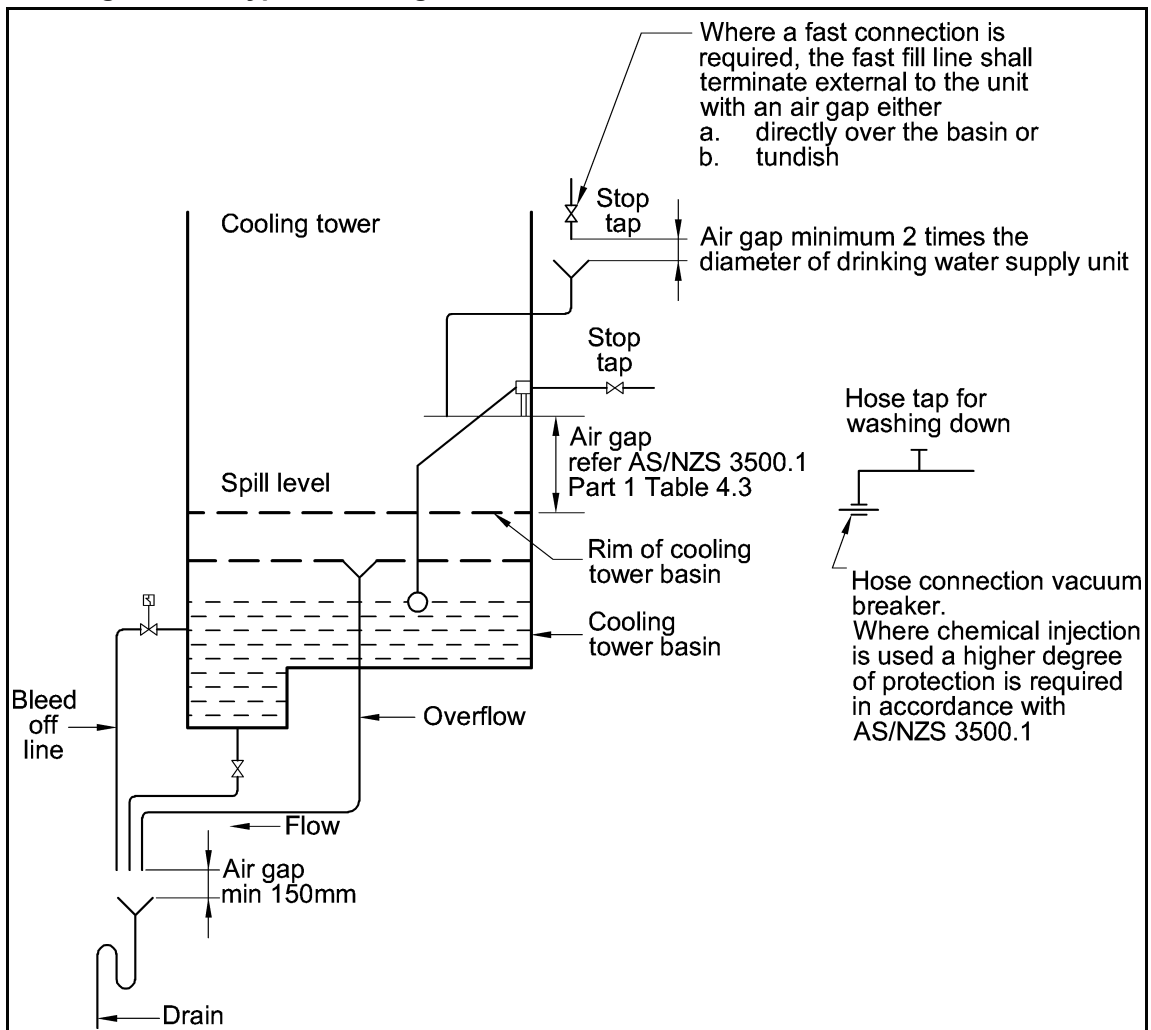
4.7 Water systems permanently attached to cooling towers

Backflow prevention shall be positioned so that —

      - (a) cooling tower air gap must be measured from the rim of the cooling tower basin; and
      - (b) if a drinking water service to the cooling tower passes through the basin, the service pipe must be provided with a double wall protection; and
      - (c) 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 clause 16.3.3(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.

(ii) The requirements of this Part.

## PART B2 HEATED WATER SERVICES

Delete BP2.8(b) and replace with NSW BP2.8(b) as follows:

<b>PERFORMANCE REQUIREMENTS</b>
---------------------------------

### NSW BP2.8

(b) \* \* \* \* \*

**Explanatory information:**

Compliance is not *required* with the national provisions of **BP2.8(b)** as the sources of energy for new Class 1 and 10 buildings are regulated under BASIX.

Delete BV2.2 and insert NSW BV2.2 as follows:

<b>VERIFICATION METHODS</b>
-----------------------------

### NSW BV2.2 \* \* \* \* \*

This clause has deliberately been left blank.

**Explanatory information:**

**BV2.2** does not apply in NSW as the sources of energy for new Class 1 and 10 buildings are regulated under BASIX.

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

### NSW B2.2 General requirements

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

Delete B2.4 and insert NSW B2.4 as follows:

### NSW B2.4 \* \* \* \* \*

This clause has deliberately been left blank.

**Explanatory information:**

Compliance is not *required* with the national provisions of **B2.4** as the sources of energy for new Class 1 and 10 buildings are regulated under BASIX.

## PART B3 NON-DRINKING WATER SERVICES

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

### NSW B3.2 General requirements

- (b) The design, construction, installation, replacement, repair, alteration and maintenance of a *non-drinking water* service must be in accordance with the following:
  - (i) AS/NZS 3500.1 with the following variations:
    - (A) All external taps are to comply with clause 9.3.2.3(d)(i) only;
    - (B) After clause 10.3(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.
  - (ii) The requirements of this Part.

## PART B4 FIRE-FIGHTING WATER SERVICES

Part B4 does not apply in New South Wales.

### Note:

This Part does not apply in New South Wales as fire-fighting water services are regulated under the Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000, which references the Building Code of Australia.

# 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 General requirements

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

## PART C2 SANITARY DRAINAGE SYSTEMS

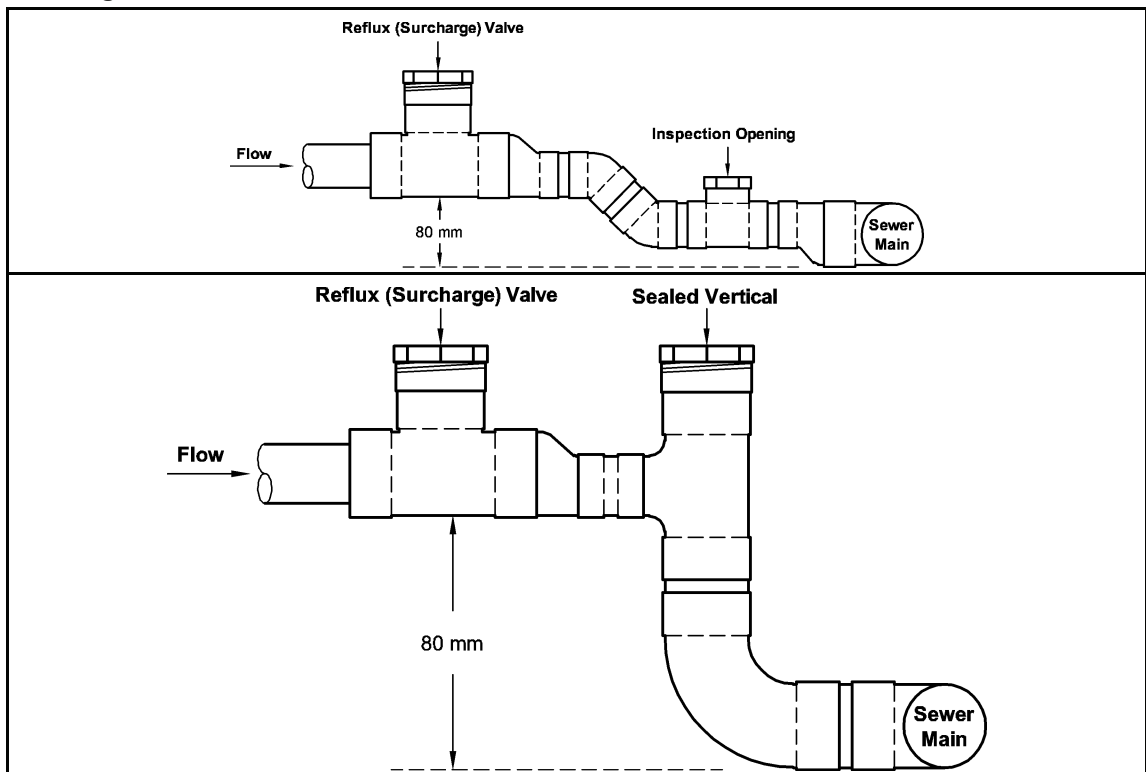
Delete C2.2(a) and insert NSW C2.2(a) as follows:

### NSW C2.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary *drainage* system must be in accordance with the following:
  - (i) AS/NZS 3500.2 with the following variations:
    - (A) \* \* \* \* \*

- (B) For clause 4.4.1 insert the following as the second paragraph:  
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) Substitute clause 4.5.3 as follows:  
4.5.3 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 Operator's* system it is connected to. See **NSW Figure C2.2 Reflux Valves**.

**NSW Figure C2.2 Reflux Valves**



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 12.7(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 Operator's* 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.
- (ii) The requirements of this Part.

## SECTION D STORMWATER DRAINAGE SYSTEMS

### PART D1 ROOF DRAINAGE SYSTEMS

In New South Wales roof *drainage* systems are regulated in:

- (a) the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000, which references the Building Code of Australia; and
- (b) the Local Government Act 1993 and the Local Government (General) Regulation 2005.

### PART D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

In New South Wales surface and subsurface *drainage* systems are regulated in:

- (a) the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000; and
- (b) the Local Government Act 1993 and the Local Government (General) Regulation 2005.

## SECTION E HEATING, VENTILATION AND AIR-CONDITIONING

### PART E1 HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

Part E1 does not apply in New South Wales.

**Note:**



This part does not apply in New South Wales as heating, ventilation and air-conditioning systems are regulated in:

- (a) the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000, which references the Building Code of Australia; and
- (b) the Public Health Act 2010 and the Public Health Regulation 2012.

## SECTION F ON-SITE WASTEWATER SYSTEMS

### PART F1 ON-SITE WASTE WATER MANAGEMENT SYSTEMS

Part F1 does not apply in New South Wales; *on-site wastewater management systems* are regulated under the Local Government Act 1993 and the Local Government (General) Regulation 2005.

The Plumbing and Drainage Act 2011 applies to the plumbing and drainage system as defined by that Act.

### PART F2 ON-SITE LIQUID TRADE WASTE SYSTEMS

In New South Wales, on-site liquid trade waste systems are not regulated under the Plumbing and Drainage Act 2011, this scope of work is administered and regulated under the following:

- (a) Local Government Act 1993 and Local Government (General) Regulation 2005.
- (b) Water Industry Competition Act (WICA) 2006.
- (c) Hunter Water Act 1991.
- (d) Sydney Water Act 1994.

The Plumbing and Drainage Act 2011 applies to all on-site *plumbing* and *drainage* systems as defined under Section 4 of the Act.

Where the sewer drains to a network utility such as a Council or County Council, Hunter Water, Sydney Water or a licensed private scheme approved by the Independent Pricing and Regulatory Tribunal, refer to their current Act in regards to administration requirements.

## Footnote: OTHER LEGISLATION AFFECTING BUILDINGS

### 1. Plumbing and Drainage

#### 1.1 Administering Agency

NSW Fair Trading

#### Relevant Legislation

Plumbing and Drainage Act 2011

Plumbing and Drainage Regulation 2012

#### Approval to Connect to Network Utility Operator's System

Refer to the *Network Utility Operator* for the current Act and Regulation.

Local Government Act 1993 and the Local Government (General) Regulation 2005

Hunter Water Act 1991

Sydney Water Act 1994

Water Industry Competition Act (WICA) 2006

## **2. Building**

### **2.1 Administering Agency**

Department of Planning and Environment

#### **Relevant Legislation**

Environmental Planning and Assessment Act 1979

Environmental Planning and Assessment Regulation 2000

## **3. Health**

### **3.1 Administering Agency**

NSW Ministry of Health

#### **Relevant Legislation**

Public Health Act 2010

Public Health Regulation 2012

## **4. Environment**

### **4.1 Administering Agency**

Office of Environment & Heritage

#### **Relevant Legislation**

Protection of the Environment Operations Act 1997

## **5. Gas**

### **5.1 Administering Agency**

Department of Industry, Skills and Regional Development (Resources and Energy)

#### **Relevant Legislation**

Gas Supply Act 1996

Gas Supply (Safety and Network Management) Regulation 2013

### **5.2 Administering Agency**

NSW Fair Trading

#### **Relevant Legislation**

Gas Supply (Consumer Safety) Regulation 2012

## **6. Electrical**

### **6.1 Administering Agency**

NSW Fair Trading

#### **Relevant Legislation**

Electricity (Consumer Safety) Act 2004

Electricity (Consumer Safety) Regulation 2015

# **NORTHERN TERRITORY**

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APPENDIX NORTHERN TERRITORY

Northern Territory

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Verification Methods NT BV2.2  
NT B2.4 \* \* \* \* \*

**C        SANITARY PLUMBING AND DRAINAGE SYSTEMS**

NT C2.2 General requirements

**D        STORMWATER DRAINAGE SYSTEMS**

**E        HEATING, VENTILATION AND AIR-CONDITIONING**

**F        ON-SITE WASTEWATER SYSTEMS**

**SECTION B     WATER SERVICES**

**PART B2        HEATED WATER SERVICES**

Delete BP2.8(b) and insert NT BP2.8(b) as follows:

**PERFORMANCE REQUIREMENTS**

**NT BP2.8**

(b)     \* \* \* \* \*

Delete BV2.2 and insert NT BV2.2 as follows:

**VERIFICATION METHODS**

**NT BV2.2 \* \* \* \* \***

This clause has deliberately been left blank.

Delete B2.4 and insert NT B2.4 as follows:

**DEEMED-TO-SATISFY PROVISIONS**

**NT B2.4 \* \* \* \* \***

The clause has deliberately been left blank.

**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 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary *drainage* system must be in accordance with the following:
- (i) AS/NZS 3500.2 with the following variations:
- (A) Substitute clause 4.6.6.6 as follows:
- 4.6.6.6 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) Substitute clause 4.6.6.7 as follows:
- 4.6.6.7 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 with the following variations:
- (A) Substitute clause 4.36.6.6 as follows:
- 4.36.6.6 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) Substitute clause 4.36.6.7 as follows:
- 4.36.6.7 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.
- (iii) The requirements of this Part.

## 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.

### PART F2 ON-SITE LIQUID TRADE WASTE SYSTEMS

Part F2 does not apply in the Northern Territory.



# **QUEENSLAND**

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### APPENDIX QUEENSLAND

#### Queensland

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#### **D STORMWATER DRAINAGE SYSTEMS**

#### **E HEATING, VENTILATION AND AIR-CONDITIONING**

#### **F ON-SITE WASTEWATER SYSTEMS**

## SECTION B WATER SERVICES

### PART B1 COLD WATER SERVICES

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

#### Qld B1.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with AS/NZS 3500.1 and the requirements of this Part.
- (c) \* \* \* \* \*

Delete B1.5(a) and insert Qld B1.5(a) as follows:

#### Qld B1.5 Sanitary flushing

- (a) \* \* \* \* \*

### PART B2 HEATED WATER SERVICES

Delete BP2.8 and insert Qld BP2.8 as follows:

<b>PERFORMANCE REQUIREMENTS</b>
---------------------------------

#### Qld BP2.8 \* \* \* \* \*

This clause has deliberately been left blank.
---

Delete BV2.2 and insert Qld BV2.2 as follows:

<b>VERIFICATION METHODS</b>
-----------------------------

#### Qld BV2.2 \* \* \* \* \*

This clause has deliberately been left blank.
---

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

#### Qld B2.2 General requirements

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

Delete B2.4 and insert Qld B2.4 as follows:

**Qld B2.4 \* \* \* \* \***

This clause has deliberately been left blank.

## **PART B3      NON-DRINKING WATER SERVICES**

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

### **Qld B3.2 General requirements**

- (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 and the requirements of this Part.

After B3.2(c) insert Qld B3.201 as follows:

### **Qld B3.201 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 BOD<sub>5</sub> less than or equal to 10 g/m<sup>3</sup> with no sample greater than 20 g/m<sup>3</sup>.
- (b) 90% of the samples taken over the test period must have total suspended solids less than or equal to 10 g/m<sup>3</sup> with no sample greater than 20 g/m<sup>3</sup>.
- (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/m<sup>3</sup> and less than 2.0 g/m<sup>3</sup> 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 B3.201 insert Qld B3.202 as follows:

### **Qld B3.202 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 the guideline published by the former Queensland

Water Commission 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.

After B3.3(i) insert Qld B3.3(j), (k) and (l) as follows:

### **Qld B3.3 Distribution of non-drinking water**

- (j) manual bucketing of greywater for garden irrigation; and
- (k) connection of flexible hose to laundry for garden irrigation; and
- (l) use of certified greywater diversion devices (with Local Government approval).

## **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 General requirements**

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

## **PART C2 SANITARY DRAINAGE SYSTEMS**

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

### **Qld C2.2 General requirements**

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary *drainage* system must be in accordance with AS/NZS 3500.2 and the requirements of this Part.
- (b) \* \* \* \* \*

## 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.

# **SOUTH AUSTRALIA**

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### APPENDIX SOUTH AUSTRALIA

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**Footnote: Other Legislation Affecting Buildings**



## SECTION A GENERAL PROVISIONS

### PART A1 INTERPRETATION

#### SA A1.1 Definitions

Insert definition for *rated hot water delivery* as follows:

**Rated hot water delivery** means rated hot water delivery as specified in AS 1056.1.

Insert definition for *sole-occupancy unit* as follows:

**Sole-occupancy unit** means a room or other part of a building for occupation by one or joint owner, lessee, tenant or other occupier, to the exclusion of any other owner, lessee, tenant or other occupier and includes a dwelling.

### PART A3 DOCUMENTS ADOPTED BY REFERENCE

#### SA A3.1 Schedule of referenced documents

In Table A3.1, insert additional references as follows:

##### SA Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS

Document No.	Date	Title	PCA Clause
AS/NZS 1260	2009	PVC-U pipes and fittings for drain, waste, and vent applications Amdt 1	SA C1.2

## SECTION B WATER SERVICES

### PART B1 COLD WATER SERVICES

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

#### SA B1.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of cold water services must be in accordance with the following:
- (i) AS/NZS 3500.1 with the following additions:
- (A) After 16.4, insert clause 16.4.1 as follows:
- 16.4.1 A reduction of the hazard ratings listed in table 16.1 may be permitted following a risk assessment of the design and installation of the rainwater tank and other environmental factors in accordance with clause 16.4.2; and
- (B) After 16.4.1, insert clause 16.4.2 as follows:
- 16.4.2 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 may be used in lieu of a

testable device for containment and zone protection where it has been determined by risk assessment that—

- (a) the risk to tank rainwater quality from air pollution is low; and
- (b) 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
- (c) 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
- (d) 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—
  - (i) location and topography; and
  - (ii) structural integrity of the tank including installation factors such as bedding, embedment, compaction and geotechnical specifications; and
  - (iii) watertightness of tank including all penetrations, connections, access covers and joints; and
  - (iv) ingress of vermin through the overflow e.g. by provision of a reflux valve, self sealing valve, trap check valve; and
  - (v) the risk assessment results must be submitted to authority having jurisdiction; or

(ii) AS/NZS 3500.5 Section 6 with the following additions;

(A) After 6.4 insert clause 6.4.1 as follows:

6.4.1 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 may be used in lieu of a testable device for containment and zone protection where it has been determined by risk assessment that—

- (a) the risk to tank rainwater quality from air pollution is low; and
- (b) 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
- (c) 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

- (d) 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—
  - (i) location and topography; and
  - (ii) structural integrity of the tank including installation factors such as bedding, embedment, compaction and geotechnical specifications; and
  - (iii) watertightness of tank including all penetrations, connections, access covers and joints; and
  - (iv) ingress of vermin through the overflow e.g. by provision of a reflux valve, self sealing valve, trap check valve; and
  - (v) the risk assessment results must be submitted to authority having jurisdiction.

(iii) The requirements of this Part.

- (d) 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 50 m<sup>2</sup>. 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

After BP2.8 insert SA BP2.801 as follows:

### PERFORMANCE REQUIREMENTS

#### SA BP2.801

Heating for a *heated water* service that only serves a single *sole-occupancy unit* in a new Class 2 building must, to the degree necessary, obtain energy from a source that has a greenhouse gas emission profile not exceeding 300 grams of carbon dioxide equivalent per megajoule of *heated water*.

After BV2.2 insert SA BV2.201 as follows:

<b>VERIFICATION METHODS</b>
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## SA BV2.201

- (a) Compliance with *Performance Requirement SA BP2.801* for a heater in a *heated water* service is verified when the annual greenhouse gas intensity of the of the water heater does not exceed 300 g CO<sub>2</sub> -e/MJ of thermal energy load determined in accordance with AS/NZS 4234.
- (b) The greenhouse gas intensity of the water heater in (a) is the sum of the annual greenhouse gas emissions from each energy source in g CO<sub>2</sub> -e divided by the annual thermal energy load of the water heater.
- (c) The greenhouse gas emissions from each energy source in (b) is the product of—
  - (i) the annual amount of energy consumed from that energy source; and
  - (ii) the emission factor of—
    - (A) if the energy source is electricity, 272 g CO<sub>2</sub> -e/MJ; or
    - (B) if the energy source is liquified petroleum gas, 65 g CO<sub>2</sub> -e/MJ; or
    - (C) if the energy source is natural gas, 61 g CO<sub>2</sub> -e/MJ; or
    - (D) if the energy source is wood or biomass, 4 g CO<sub>2</sub> -e/MJ.

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

## SA B2.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a *heated water* service must be in accordance with the following:
  - (i) AS/NZS 3500.4 with the following variations:
    - (A) After clause 1.9.2(b) insert (c), (d), (e) and (f) as follows:
      - (c) Heated water services in buildings constructed after 19 October 1995 shall have temperature control in accordance with items (a) and (b).
      - (d) All new solar water installations (including solar heater replacements) shall be in accordance with items (a) and (b).
      - (e) 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 be in accordance with items (a) and (b).
      - (f) Where a water heater is replaced, a temperature control device is required where such a device was in place prior to the installation of the replaced water heater. The device must meet the requirements of items (a) and (b).

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.

- (B) Substitute clause 5.8(c) as follows:

- 5.8(c) All new or replacement unvented storage water heaters shall be fitted with new temperature/pressure relief and expansion control valves as shown in Figure 5.7.
- (C) Substitute clause 5.11.2.1 as follows:
  - 5.11.2.1 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
- (D) Substitute clause 5.11.3(e) as follows:
  - 5.11.3(e) All drain lines shall discharge separately over a gully, tundish or other visible approved outlet.
- (ii) Section 3 of AS/NZS 3500.5 with the following variations:
  - (A) After clause 3.2.2 insert 3.2.2.1 as follows:
    - 3.2.2.1 The requirements of Clause 3.2.2 apply to the following:
      - (a) Heated water services in buildings constructed after 19 October 1995.
      - (b) All new solar water heater installations (including solar water replacements).
      - (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.
      - (d) Where a water heater is replaced, a temperature control device is required where such a device was in place prior to the installation of the replaced water heater.

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.

- (B) Substitute clause 3.19(c)(i) as follows:
  - (c)(i) All new or replacement unvented storage water heaters shall be fitted with new temperature/pressure relief and expansion control valves as shown in Figure 5.7.
- (C) Substitute clause 3.21.2(a) and (b) 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.
- (iii) The requirements of this Part.

Delete B2.4(b) and (d) and insert SA B2.4(b) and (d) as follows:

### **SA B2.4 Water heater in a hot water supply system**

- (b) A solar water heater or heat pump water heater must have the following performance:

- (i) A electric boosted solar *heated water* service or heat pump *heated water* service (air source or solar boosted) with a single tank and a volume of 400 litres or more and not more than 700 litres—
  - (A) at least 38 *Small-scale Technology Certificates* in zone 3; or
  - (B) at least 36 *Small-scale Technology Certificates* in zone 4.
- (ii) An electric boosted solar *heated water* service or heat pump *heated water* service (air source or solar boosted) with a single tank and a volume more than 220 litres and not more than 400 litres—
  - (A) at least 27 *Small-scale Technology Certificates* in zone 3; or
  - (B) at least 26 *Small-scale Technology Certificates* in zone 4.
- (iii) An electric boosted solar *heated water* service or heat pump *heated water* service (air source or solar boosted) with a single tank a volume of not more than 220 litres—
  - (A) at least 17 *Small-scale Technology Certificates* in zone 3; or
  - (B) at least 16 *Small-scale Technology Certificates* in zone 4.
- (iv) A natural gas or LPG boosted solar *heated water* service with a total tank volume of not more than 700 litres and at least 1 or more *Small-scale Technology Certificates* in any zone.
- (v) A wood combustion boosted solar water heater, with no additional heating mechanism, and a total tank volume of not more than 700 litres.

**Explanatory information:**

1. The zones referred to **SA B2.4(b)** are the climate zones used in Figure A1 of AS/NZS 4234 for identifying load conditions for *heated water* services.
2. In **SA B2.4(b)(i)** to **(v)** above, a *heated water* service that meets either the requirements in **(A)**, the requirements in **(B)**, or both, may be installed regardless of the actual zone in which the *heated water* service is to be installed.

- (d) An electric resistance water heater may be installed when—
  - (i) the building has—
    - (A) a water heater that complies with **(b)** or **(c)**; and
    - (B) not more than 1 electric resistance water heater is installed; and
  - (ii) the electric resistance water heater—
    - (A) has no storage capacity or a *rated hot water delivery* of not more than 50 litres; and
    - (B) it does not supply *heated water* to more than 1 room; and
    - (C) it does not supply *heated water* to a bath or shower.

### SA B2.401 Complying heated water services

A water heater in a *heated water* service that only serves a single, new, Class 2 *sole-occupancy unit* must be one of the following:

- (a) An electric *heated water* service with a *rated hot water delivery*, if applicable, of 700 litres or less.

- (b) A natural gas or LPG *heated water* service (instantaneous, continuous flow or storage) that is rated at not less than 2.5 stars in accordance with AS 4552, and a tank volume, if applicable, of 700 litres or less.
- (c) A solar *heated water* service (electric, natural gas or LPG boosted) or heat pump *heated water* service (air source or solar boosted), with a total tank volume of 700 litres or less, that is eligible for any number of *Small-scale Technology Certificates*.
- (d) A wood combustion *heated water* service, with no additional heating mechanisms, with a total tank volume of 700 litres or less.
- (e) A wood combustion boosted solar *heated water* service, with no additional heating mechanisms, with a total tank volume of 700 litres or less.

## 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 General requirements

- (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 variations and additions:
    - (A) After clause 4.7.1(h) insert (i) as follows:
      - (i) Inspection openings indicated in 4.7.1(b), (d) and (e) shall be raised to finished surface level. All other inspection openings need not be raised provided they are not below paved, concreted or similar finished surfaces.
    - (B) Substitute clause 2.4.1(a) as follows:
      - (a) Bends in pipes shall have a throat radius complying with Table 5.6 and Figure B6 of AS/NZS 1260 (2009) and shall be free from wrinkling and flattening.
    - (C) Substitute clause 5.3(b), (c), (e) and (f) as follows:
      - (b) under all inspection junctions to a minimum thickness of 100 mm and continued up vertically to the centre of the inspection junction fitting.
      - (c) under all bends greater than DN 65 where a riser from the drain is brought to the finished surface level.
      - (e) for sweep junctions, beneath the junction to a minimum thickness of 100 mm and continued up vertically to the centre of the junction fitting where the riser from the sweep junction fitting is brought to finished surface level.
      - (f) for 45° junctions, beneath the junction to a minimum thickness of 100 mm and continued up vertically to the underside of the bend fitted to the junction fitting where the riser from the 45° junction is brought to finished surface level.
    - (D) After clause 12.9 insert additional clause 12.10 as follows:

## 12.10 Identification of pumped discharge pipes and rising mains

- (a) Buried pumped discharge pipes and rising mains shall be placed in a sleeve or continually spirally wrapped. The sleeving or spiral wrapping shall be identified for the full length with the following statement: "sewer rising main" or "pumped discharge pipe" in accordance with AS 1345.
  - (b) Above ground pumped discharge pipes and rising mains shall be identified in accordance with AS 1345. Identification tape (label) with the wording "sewer rising main" or "pumped discharge pipe" shall be installed in a visible position running longitudinally, and fastened to the pumped discharge pipe or rising main at not more than 3 m intervals.
- (E) After clause 13.9(b) delete the following:
- Where a bath trap is not accessible, the bath shall discharge untrapped to a floor waste gully (FWG) in accordance with Table 4.6.7.2 and Appendix D.

- (F) After clause 13.27.2 insert additional clause 13.28 as follows:

### 13.28 Trade Waste Discharges

All trade waste pre-treatment devices shall connect to the sewerage system via a disconnector gully.

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

- (A) After clause 4.21.1(h) insert (i) as follows:
  - (i) Inspection openings indicated in 4.21.1(b), (d) and (e) shall be raised to finished surface level. All other inspection openings need not be raised provided they are not below paved, concreted or similar finished surfaces; and
- (B) Substitute clause 4.4.1(a) as follows:
  - (a) Bends in pipes shall have a throat radius complying with AS/NZS 1260 (2009) Table 5.6 and Figure B6 and shall be free from wrinkling and flattening.
- (C) Substitute clause 4.29(b), (c), (e) and (f) as follows:
  - (b) under all inspection junctions to a minimum thickness of 100 mm and continued up vertically to the centre of the inspection opening.
  - (c) under all bends greater than DN 65 where a riser from the drain is brought to the finished surface level.
  - (e) for sweep junctions, beneath the junction to a minimum thickness of 100 mm and continued up vertically to the centre of the junction fitting where the riser from the sweep junction fitting is brought to finished surface level.
  - (f) for 45° junctions, beneath the junction to a minimum thickness of 100 mm and continued up vertically to the underside of the bend fitted to the junction fitting where the riser from the 45° junction is brought to finished surface level.
- (D) After clause 4.37.2.2(b) delete the sentence:



Where a bath trap is not accessible, the bath shall discharge, untrapped, to a floor waste gully (FWG), in accordance with Table 4.36.8.2 and Table 4.37.1.2.

- (E) After clause 4.39.4 insert additional clause 4.39.5 as follows:

4.39.5 Identification of pumped discharge pipes and rising mains

- (a) Buried pumped discharge pipes and rising mains shall be placed in a sleeve or continually spirally wrapped. The sleeving or spiral wrapping shall be identified for the full length with the following statement: "sewer rising main" or "pumped discharge pipe" in accordance with AS 1345.
- (b) Above ground pumped discharge pipes and rising mains shall be identified in accordance with AS 1345. Identification tape (label) with the wording "sewer rising main" or "pumped discharge pipe" shall be installed in a visible position running longitudinally, and fastened to the pumped discharge pipe or rising main at not more than 3 m intervals.

## 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.

## 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.

### 1. Plumbing and Drainage

#### 1.1 Administering Agency

Office of the Technical Regulator, Department of State Development

**Relevant Legislation**

Water Industry Act 2012

Water Industry Regulations 2012

**2. Building**

**2.1 Administering Agency**

Department of Planning, Transport and Infrastructure

**Relevant Legislation**

Development Act 1993

Development Regulations 2008

**3. Health**

**3.1 Administering Agency**

Health SA

**Relevant Legislation**

South Australian Health Act 2011

South Australian Public Health (Wastewater) Regulations 2013

Onsite Wastewater Systems Code 2013

Guidelines for the Control of Legionella 2013

Public and Environmental Health (Legionella) Regulations 2008

**4. Environment**

**4.1 Administering Agency**

Environmental Protection Authority

**Relevant Legislation**

Environment Protection Act 1993

Environmental Protection Regulations 2009

**5. Gas**

**5.1 Administering Agency**

Office of Technical Regulator, Department of State Development

**Relevant Legislation**

Gas Act 1997

Gas Regulations 2012

AS/NZS 5601 Gas Installations

AS 3814 Industrial and Commercial Gas Fired Appliances

AS/NZS 1596 The Storage and Handling of LP Gas

Energy Products (Safety and Efficiency) Act 2000

Energy Products (Safety and Efficiency) Regulations 2012

## **6. Electrical**

### **6.1 Administering Agency**

Office of Technical Regulator, Department of State Development

#### **Relevant Legislation**

Electricity Act 1996

Electricity (General) Regulations 2012

Energy Products (Safety and Efficiency) Act 2000

Energy Products (Safety and Efficiency) Regulations 2012

AS/NZS 3000 Wiring Rules

# TASMANIA

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### APPENDIX TASMANIA

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#### **C SANITARY PLUMBING AND DRAINAGE**

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Tas G102.4 General requirements

**Footnote: Other Legislation Affecting Buildings**

## SECTION A GENERAL PROVISIONS

### PART A1 INTERPRETATION

#### Tas A1.1 Definitions

Insert definition for *accreditation* as follows:

**Accreditation** means in respect of an *on-site wastewater management system*, the process of accreditation by the Minister.

Insert definition for *certificate of accreditation* as follows:

**Certificate of Accreditation** means a certificate issued under **Tas Part G102** by the Minister stating that a *plumbing* or *drainage* system meets the *Performance Requirements* of the relevant Parts of the PCA.

Replace definition of *Expert Judgement* and the explanatory information as follows:

**Expert Judgement** means the judgement of a person who has the qualifications and expertise to determine whether a *Plumbing or Drainage Solution* complies with the *Performance Requirements*.

**Explanatory information:**

The level of qualification and/or experience required to determine whether a *Plumbing or Drainage Solution* complies with the *Performance Requirements* may differ depending on the degree of complexity and the requirements of the *Building Act 2000*. Practitioners should seek advice from the *Permit Authority* as to what will be accepted.

Replace definition of *Network Utility Operator* and the explanatory information as follows:

**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.

**Explanatory information:**

A *Network Utility Operator* is the water and sewerage authority licensed to supply water and supply water and receive sewage and/or stormwater in Tasmania. The authority operates or proposes to operate a network that undertakes the distribution of water for supply and undertakes to receive sewage and/or stormwater drainage. This authority may be a licensed water and sewerage authority for water and sewerage, or the relevant council, for on-site waste water management and stormwater systems.

Replace definition of *on-site wastewater management system* as follows:

**On-site wastewater management system** means on-site wastewater management system as defined by the *Building Act 2000*.

Insert definition of *Permit Authority* as follows:

**Permit Authority** means a permit authority as defined by the *Building Act 2000*.

Replace definition of *professional engineer* as follows:

**Professional engineer** means a person who is an engineer accredited under the *Building Act 2000* in the relevant discipline who has appropriate experience and competence in the relevant field.

Replace definition of *recognised expert* as follows:

**Recognised expert** means a person with qualifications and expertise in the area of *plumbing* and *drainage* in question, as determined by the Director of Building Control.

Insert definition for *sanitary appliance* as follows:

**Sanitary appliance** means an appliance which is intended to be used for *sanitation*, but which is not a *sanitary fixture*. Included are machines for washing dishes, glasses and washing clothes and the like.

Insert definition for *sanitary fixture* as follows:

**Sanitary fixture** means a fixture which is intended to be used for *sanitation*.

Insert definition for *sanitation* as follows:

**Sanitation** means the activities of washing or excretion carried out in a manner or condition such that the effect on health is minimised, with regard to dirt and infection.

Insert definition for *sewerage system* as follows:

**Sewerage system** means a sewerage system as defined in the Plumbing Regulations.

Insert definition for *unique plumbing product* as follows:

**Unique plumbing product** means a *plumbing* or *drainage* product that is—

- (a) a prototype; or
- (b) made on-site; or
- (c) purpose built and the only one of its type; or
- (d) imported from outside Australia for a one-off use; or
- (e) determined by the Director of Building Control to be a *unique plumbing product*.

After A1.8 insert Tas A1.801 as follows:

### **Tas A1.801 Advisory information**

The Director of Building Control may issue written advice to deal with arising issues such as interpretation of codes, standards and regulations.

## **PART A2 ACCEPTANCE OF DESIGN AND CONSTRUCTION**

Delete A2.1(c) and insert Tas A2.1(c); and after A2.1(d) insert Tas A2.1(e) to (i) as follows:

### **Tas A2.1 Suitability of Materials and Products**

- (c) *Product* certification and authorisation must comply with the procedures set out in the *WaterMark Certification Scheme* (see ABCB website for details), **Tas Part G101** or **Tas Part G102** (as appropriate).
- (e) Any new or innovative material or *product* must be assessed, certified and authorised, if required, in accordance with the *WaterMark Certification Scheme* (see ABCB website for details), **Tas Part G101** or **Tas Part G102** (as appropriate) prior to their use in a *plumbing* or *drainage* installation.



- (f) A material or *product* excluded from certification under the Plumbing Code of Australia is authorised for use in a *plumbing* or *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 **Tas 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 expert* as complying with the relevant Australian Standards for the specific application in accordance with **Tas A2.2**.
- (h) A material or *product* used in a stormwater installation is authorised for use if it is certified by a *recognised expert* as complying with Section 2 of AS/NZS 3500.3 in accordance with **Tas A2.2**.
- (i) A prefabricated or constructed on-site cold water storage tank used in a *drinking water* supply system is authorised for use if evidence of compliance with **Tas Part B101** in accordance with **Tas A2.2** is given.

Delete A2.2(b)(i) and insert Tas A2.2(b)(i) as follows:

### Tas A2.2 Evidence of Suitability

- (b)
- (i) Meeting the requirements of **Tas Part G101** or **Tas Part G102** (as appropriate).

## PART A3 DOCUMENTS ADOPTED BY REFERENCE

Amend Table A3.1 as follows:

**Tas Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS**

Document No.	Date	Title	PCA Clause
<b>AS/NZS 1546</b>		On-site domestic wastewater treatment units	
Part 1	2008	Septic tanks	<b>C2.2, F1.2,</b> <b>Tas G101 V4,</b> <b>Tas G101 V5,</b> <b>Tas G101.4</b>
Part 2	2008	Waterless composting toilets	<b>C2.2, F1.2</b>
Part 3	2008	Aerated wastewater treatment systems	<b>C2.2, F1.2</b>
<b>AS/NZS 1547</b>	2012	On-site domestic wastewater management	<b>C2.2, F1.2</b>
<b>AS 2070</b>	1999	Plastics materials for food contact use	<b>Tas B101.3</b>
<b>AS/NZS 2179</b>		Specifications for rainwater goods, accessories and fasteners	
Part 1	2014	Metal shape or sheet rainwater goods, and metal accessories and fasteners	<b>Tas B101.3</b>
<b>AS/NZS 3500</b>		Plumbing and drainage	

*Tas Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS — continued*

Document No.	Date	Title	PCA Clause
Part 1	2015	Water services	<b>B1.2, Tas B101.3, B3.2, B4.2, E1.2</b>
Part 3	2015	Stormwater drainage	<b>A2.1, Tas B101.3, D1.2, D2.2</b>
<b>AS 3600</b>	2009	Concrete structures	<b>Tas B101.3</b>
<b>AS 3735</b>	2001	Concrete structures retaining liquids	<b>Tas B101.3</b>
<b>AS/NZS 4020</b>	2005	Testing of products in contact with drinking water	<b>A2.1, Tas B101.3,</b>
<b>AS/NZS 4130</b>	2009	Polyethylene (PE) pipes for pressure applications	<b>Tas B101.3</b>
<b>AS/NZS 4766</b>	2006	Polyethylene storage tanks for water and chemicals	<b>Tas B101.3</b>
<b>ATS 5200.026</b>	2004	Technical Specification for plumbing and drainage products: Cold water storage tanks	<b>Tas B101.3</b>
The following references are informative only			
<b>HB 230</b>	2008	Rainwater tank design and installation handbook	<b>Tas B101.3</b>
<b>enHealth</b>	2010	Guidance on the use of rainwater tanks	<b>Tas B101.3</b>
<b>TasWater</b>	2015	TasWater Boundary Backflow Containment Requirements	<b>Tas B1.2</b>

## SECTION B WATER SERVICES

### PART B1 COLD WATER SERVICES

Delete B1.0 and insert Tas B1.0 as follows:

#### Tas 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. For the avoidance of doubt, the *point of connection* includes any tanks used for the collection, storage and supply of *drinking water*.

After B1.2(c) insert Tas B1.2(d) and (e) as follows:

#### Tas B1.2 General Requirements

- (d) Cold water tanks forming part of a *drinking water* supply must comply with **Tas Part B101**.
- (e) Backflow prevention for boundary containment must comply with the TasWater Boundary Backflow Containment Selection Requirements.

## TAS PART B101 COLD WATER STORAGE TANKS

### Tas B101.1 Scope

This Part is an addition to the *Deemed-to-Satisfy Provisions* of **Part B1**. It sets out the requirements for pre-fabricated and constructed on-site cold water storage tanks used in a *drinking water* supply system.

### Tas B101.2 Application

This Part applies to tanks including rainwater tanks connected to the roof *plumbing* system, or a tank supplied from a nearby stream, bore or well used in *drinking water* services or *drinking water* supply in reticulated or non-reticulated areas.

Installation of cold water storage tanks used to supply water to a *drinking water* service must comply with this Part. For connection of cold water tanks where reticulated supply is available refer to Sections 8 and 16 of AS/NZS 3500.1 and Clause 2.16 of AS/NZS 3500.5 (as appropriate).

### Tas B101.3 Cold water storage tanks

Cold water storage tanks and their installation must comply with the relevant requirements of the following documents:

AS	
2070	Plastics materials for food contact use
3600	Concrete structures
3735	Concrete structures retaining liquids
AS/NZS	
2179.1	Specifications for rainwater goods, accessories and fasteners – Metal shape or sheet rainwater goods, and metal accessories and fasteners
3500	Plumbing and drainage
3500.1	Water services
3500.3	Stormwater drainage
4020	Testing of products in contact with drinking water
4130	Polyethylene (PE) pipes for pressure applications
4766	Polyethylene storage tanks for water and chemicals
ABCB	
Procedures for the Certification of Plumbing and Drainage Products	
ATS	
5200.026	Part 026: Cold water storage tanks
The followings references are for information only:	
HB 230	Rainwater Tank Design and Installation Handbook
enHealth	Guidance on the use of rainwater tanks

## Tas B101.4 Materials

- (a) Materials and *products* in contact with water to be used in a *drinking water* supply must comply with AS/NZS 4020. Linings and coatings must comply with AS/NZS 4020 at a surface area to volume ratio not greater than that specified in the conditions of use. Materials and *products* used in manufacture of tanks must be selected to ensure fitness for their intended purpose. Tanks must be selected from the relevant Standards listed in this Part. Factors to be taken into account include but are not limited to:
- (i) the nature and source of the water;
  - (ii) the risk of corrosion and tank contamination;
  - (iii) the nature of the environment;
  - (iv) the physical and chemical characteristics of the materials and *products*;
  - (v) compatibility of materials and *products*; and
  - (vi) accessibility for monitoring and maintenance.

### Explanatory information:

Information on some of the above items may be obtainable from the manufacturer or supplier of the *product* or materials.

- (b) **Plastics**  
Plastic tanks must comply with AS/NZS 4766.
- (c) **Waterstops, joint fillers and sealants**  
Sealants used in the manufacture of tanks must be certified under the *WaterMark Certification Scheme* to AS/NZS 4020.
- (d) **Solders**  
Solders used in the manufacture of tanks must be certified under the *WaterMark Certification Scheme* to AS/NZS 4020. Soft solder must comply with AS 1834.1 and for roof *drainage* components used for the conveyance of *drinking water*, be lead free.
- (e) **Stainless steel**  
Stainless steel sheet must be manufactured from alloy 304 or 316 complying with ASTM A240/A240M.
- (f) **Dezincification resistant (DR) copper alloys**  
Where dezincification resistant copper alloys are specified, they must comply with AS 2345.
- (g) **Steel sheet**  
Hot-dipped zinc-coated or aluminium/zinc-coated sheet steel must comply with AS 1397 and have an internal lining or coating certified to AS/NZS 4020.
- (h) **Concrete tanks**  
Concrete tanks must comply with AS 3735 or AS 3600.
- (i) **Tank linings**  
Tank linings must comply with AS/NZS 4020.

## Tas B101.5 Marking of pre-fabricated tanks

In addition to the marking requirements set out in clause 8.9 of AS/NZS 3500.1 all tanks must be permanently marked with the following:

- (a) Manufacturer's name, brand or trademark.
- (b) The Standard which the tank is manufactured to.
- (c) The date of manufacture.

## Tas B101.6 Sludge valves

A sludge valve must be fitted when the capacity of the tank exceeds 500 L. The minimum size of the valve must be not less than half the outlet pipe size nor less than DN 40.

## Tas B101.7 Collection

### Explanatory information:

Rainwater for drinking purposes should not be collected from recently painted roofs (until after the first few rainfalls), timber roofs preserved with chemicals, roofs coated with lead flashings, lead-based paints or tar-based coatings, or parts of roofs near flues from solid fuel heaters. Rainwater for *drinking water* purposes may be collected from roof types other than those identified above provided the roof and associated gutters are kept clean of leaves, animal remains, dust and other debris. Gutters must be kept clean by installing screens or leaf diverters between the roof and the water tank. The system should incorporate a 'first flush system' or other diversion system that will prevent the first flush of water from entering the tank.

## Tas B101.8 Openings in tanks

All openings to tanks must be sealed so that insects, small animals, birds and sunlight cannot enter tanks to minimise the growth of algae and to prevent unauthorised access.

## Tas B101.9 Maintenance

### Explanatory information:

Tanks should be regularly maintained by cleaning out accumulated sludge from the base every 2 - 3 years. For detailed advice on desludging and maintaining tanks refer to the enHealth Guide – Guidance on the use of rainwater tanks; or HB 230 Rainwater tank design and installation handbook.

## Tas B101.10 Commissioning

Before using the water from a tank for the first time the tank must be cleaned and disinfected (See Appendix I of AS/NZS 3500.1).

### Explanatory information:

For ongoing maintenance of water quality one or more of the following water quality treatment methods should be adopted:

**Chlorinating:** To commission the tank sufficient chlorine should be added to provide a free chlorine residual of 0.5 mg/L after 30 minutes. To satisfy chlorinating requirements an initial dose of 5 mg/L of chlorine may be necessary. For every kL of water in the tank, add either: 40 mL of liquid pool chlorine (sodium hypochlorite - 12.5% available chlorine); or 8 grams of granular pool chlorine (calcium hypochlorite - 65% available chlorine). To calculate the tank volume in kL for a cylindrical tank the volume in of water in kL =  $D \times D \times H \times 0.785$ . Where D = diameter of the tank, and H = depth of water in the tank in metres. To verify this calculation, compare this volume with the maximum capacity of the tank. The chlorine residual may be tested with a swimming pool test kit or dip strips. Water after chlorinating should not be used for 24 hours to enable any harmful microorganisms to be killed off.

**Filtration:** If filters are used in [drinking water](#) installations they are to be certified to the relevant Australian Standard under the [WaterMark Certification Scheme](#) and should be maintained by following the manufacturer's maintenance instructions.

**Ultraviolet Disinfection:** Filtration may be required to address water turbidity to enable adequate UV disinfection. Ultraviolet treatment is affected by the levels of turbidity, organic content from suspended solids, pH, hardness and UV transmissivity of the water. The intensity of the UV light and the build-up of suspended solids on the quartz tube affect the disinfection performance. Regular monitoring of the quartz tubes is critical. Lamps also need to be replaced regularly in accordance with the manufacturer's instructions.

## Tas B101.11 Warranty

The manufacturer's warranty must contain the following statement: **This tank has been manufactured for the storage of drinking water and all materials used are suitable for contact with drinking water.**

## PART B2 HEATED WATER SERVICES

Delete B2.4(a) and (d) and insert Tas B2.4(a) and (d) as follows:

### Tas B2.4 Water heater in a heated water supply system

- (a) A water heater in a [heated water](#) supply system must be—
  - (i) a solar water heater complying with [\(b\)](#); or
  - (ii) a heat pump water heater complying with [\(b\)](#); or
  - (iii) a gas water heater complying with [\(c\)](#); or
  - (iv) an electric resistance water heater complying with AS/NZS 3500.4; or
  - (v) a wood-fired thermosiphon water heater or direct-fired water heater complying with AS/NZS 3500.4.
- (d) \* \* \* \* \*

## SECTION C SANITARY PLUMBING AND DRAINAGE

After Part C1, insert Tas Part C101 as follows:

### Tas PART C101 NON-FLUSHING SANITARY FIXTURES

#### Tas C101.1 Scope

This Part is an addition to **Part C1** and sets out the requirements for the installation of non-flushing *sanitary fixtures*.

#### Tas C101.2 Installation requirements

- (a) The fixture is to be an authorised fixture or certified under the *WaterMark Certification Scheme*, as appropriate.
- (b) The fixture is to be installed in accordance with **Tas F2.102** of the Building Code of Australia Volume One; or **Part 3.8.3.4** of the Building Code of Australia Volume Two, as appropriate.

### PART C2 SANITARY DRAINAGE SYSTEMS

After CP2.2 insert Tas CP2.201 as follows:

<b>PERFORMANCE REQUIREMENTS</b>
---------------------------------

#### Tas CP2.201 On-site wastewater management systems

Where an *on-site wastewater management system* is installed in a premises and a *point of connection* to a *Network Utility Operator's sewerage system* is available, the *on-site wastewater management system* must be connected to the *Network Utility Operator's sewerage system*.

After C2.2(c) insert Tas C2.2(d) and (e) as follows:

#### Tas C2.2 General requirements

- (d) A design and installation method for conveying sewage to an *approved disposal system* and for avoiding the likelihood of foul air entering a building must comply with **Tas F101**, using *products* authorised under the *WaterMark Certification Scheme* or **Tas G101** (as appropriate).
- (e) A design and installation method for disposing of sewage using a non-flushing *sanitary fixture*, and for avoiding the likelihood of foul air entering a building must comply with **Tas C101**, using *products* authorised under the *WaterMark Certification Scheme* or **Tas G101** (as appropriate).

## SECTION D STORMWATER DRAINAGE SYSTEMS

### PART D1 ROOF DRAINAGE SYSTEMS

Delete D1.2 and insert Tas D1.2 as follows:

#### Tas D1.2 General requirements

The design, construction, installation, replacement, repair, alteration and maintenance of a roof *drainage* system must in accordance with AS/NZS 3500.3 or for Class 1 and 10 buildings, comply with Section 5 of AS/NZS 3500.5 or the acceptable construction practice of Part 3.5.2 of the Building Code of Australia Volume Two.

### PART D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

Delete D2.2 and insert Tas D2.2 as follows:

#### Tas D2.2 General requirements

The design, construction, installation, replacement, repair, alteration and maintenance of a surface and subsurface *drainage* system must in accordance with AS/NZS 3500.3 or for Class 1 and 10 buildings, comply with Section 5 of AS/NZS 3500.5 or the acceptable construction practice of Part 3.1.2 of the Building Code of Australia Volume Two.

## SECTION F ON-SITE WASTEWATER SYSTEMS

### PART F1 ON-SITE WASTEWATER MANAGEMENT SYSTEMS

After F1.2(f) insert Tas F1.2(g) and (h) as follows:

#### Tas F1.2 General requirements

- (g) An *on-site wastewater management system* must be designed and constructed in accordance with a *Certificate of Accreditation* issued under **Tas G102**.
- (h) The installation of an *on-site wastewater management system* must comply with the additional installation requirements set out in **Tas F101**.

### TAS PART F101 ON-SITE WASTEWATER MANAGEMENT SYSTEMS - ADDITIONAL REQUIREMENTS

#### Tas F101.1 Scope

This Part is an addition to **Part F1** and sets out the requirements for the connection of water flushed *sanitary fixtures* and *sanitary appliances* to an *on-site wastewater management system* other than a *sewerage system*. It also sets out the installation requirements for *on-site wastewater management systems*.

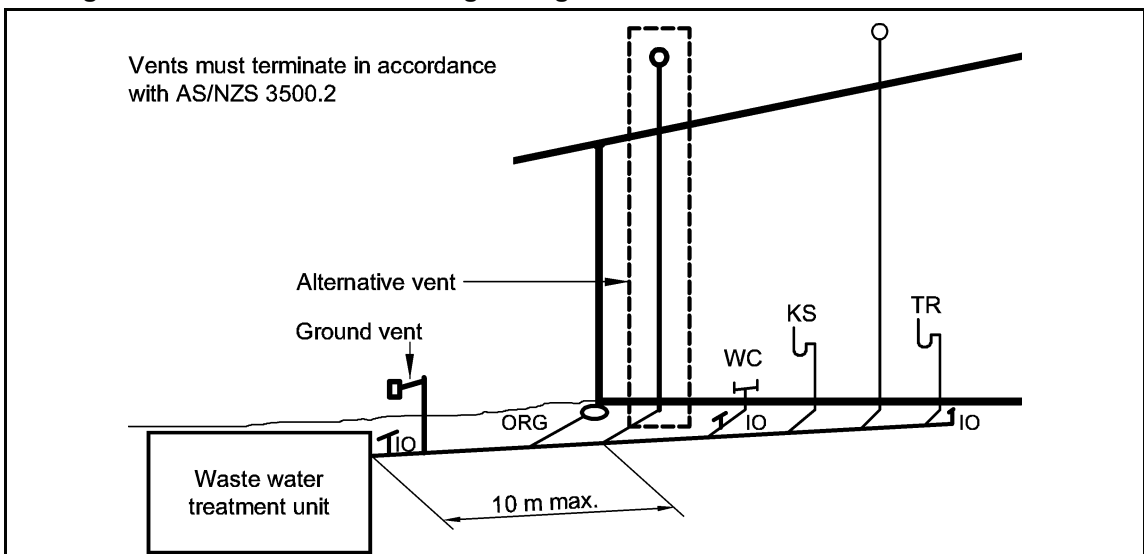
#### Tas F101.2 Installation requirements

- (a) Installation must be in accordance with **Tas Figure F101.2** and in accordance with **Parts C1** and **C2** for pipework and venting arrangements.



- (b) An overflow relief gully must be installed and positioned so as to provide protection against surcharge of waste into a building.
- (c) An alternative to the ground vent may be used by extending a vent to terminate as if an upstream vent, with the vent connection between the last *sanitary fixture* or *sanitary appliance* and the *on-site wastewater management system*.
- (d) Inspection openings must be located at the inlet to an *on-site wastewater management system* treatment unit and the *point of connection* to the land application system and must terminate as close as practicable to the underside of an approved inspection opening cover installed at the finished surface level.
- (e) Access openings providing access for desludging or maintenance of *on-site wastewater management system* treatment units must terminate at or above finished surface level.

**Tas Figure F101.2 Alternative venting arrangements**



## PART F2 ON-SITE LIQUID TRADE WASTE SYSTEMS

Delete F2.2(c) and insert Tas F2.2(c), (d) and (e) as follows:

### Tas F2.2 General requirements

- (c) Where pre-treatment facilities are not required by the *Network Utility Operator* or the permit authority, **FP2.3** or **FP2.4** must comply with AS/NZS 3500.2 and **Tas F201** and **Tas F202** as appropriate.
- (d) If a *Network Utility Operator* accepts the discharge of a liquid trade waste to their *sewerage system* after pre-treatment—
  - (i) the pre-treatment equipment or system is deemed to satisfy the *Performance Requirements* of **FP2.1** – **FP2.4**, if the equipment or system is capable of discharging liquid trade waste at a quality set under a Consent to Discharge issued for that equipment or system by the *Network Utility Operator*; and
  - (ii) that part of the installation used to convey the liquid trade waste after treatment must comply with AS/NZS 3500.2, **Tas F201**, **Tas F202**, and the *Network Utility Operator's* Guidelines, insofar as the provisions relate to the system.

- (e) The use of a *product* or system must comply with the details described in **Tas F201** and **Tas F202** insofar as they relate to the *product* or system installed in systems not connected to the *Network Utility Operator's* infrastructure.
- (f) The use of a *product* or system must comply with the details described in **Tas F201**, **Tas F202** and the *Network Utility Operator's* Guidelines, insofar as they relate to the *product* or system installed in systems connected to the *Network Utility Operator's* infrastructure.

## TAS PART F201 ROOFING OF LIQUID TRADE WASTE GENERATION AREAS

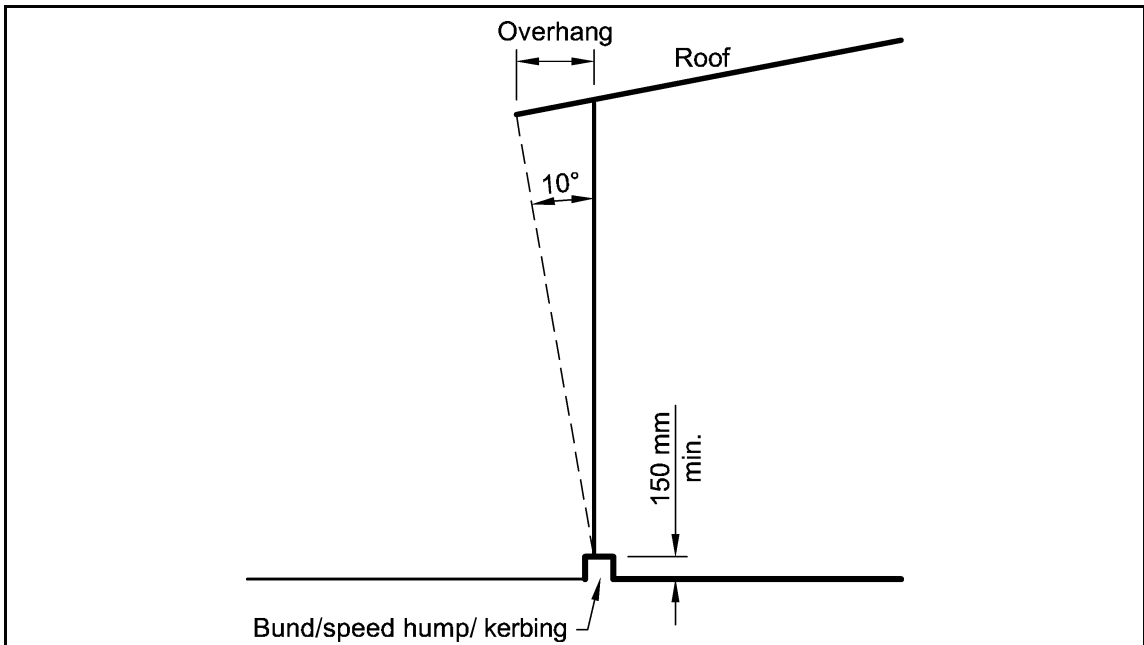
### Tas F201.1 Scope

- (a) This Part is an addition to **Part F2** and sets out the requirements for the roofing of liquid trade waste generation areas to prevent ingress of stormwater to an *approved disposal system* other than a *sewerage system*.
- (b) Roofing requirements for systems connected to the *Network Utility Operator's* sewerage system must as a minimum comply with **Tas Figure F201.2**.

### Tas F201.2 Installation requirements

- (a) When a liquid trade waste generating process does not fully occur within a building, suitable roofing must be installed to prevent the ingress of stormwater to the disposal system. For a structure where one or more sides are open to the weather, not less than 10 degrees from the vertical overhang of the roofing must be provided.
- (b) To ensure that surface water cannot flow onto the liquid trade waste generating process area a bund or other feature (speed hump) at least 150 mm high around the area must be installed. On the upper side of the area, stormwater drains alone are not adequate as stormwater flows will often bridge over the grate and enter the process area. The overall surface water flow across the site is to be considered and the height of the bund or other feature must be increased where the calculated stormwater flow will enter the process area.
- (c) This design is likely to allow wind driven rainwater to enter under the roof in extreme storm conditions. The roof must overhang by an amount not less than that shown in **Tas Figure F201.2**

Tas Figure F201.2 Roofing of liquid trade waste generation areas



## TAS PART F202 LIQUID TRADE WASTE PRODUCTS

### Tas F202.1 Scope

This Part is an addition to **Part F2** and depicts low risk trade waste *products* and installations connected to an *approved disposal system* other than a *sewerage system*.

### Tas F202.2 Application

- (a) This Part applies to trade waste installations not connected to a *Network Utility Operator's* system.
- (b) Trade waste *products* or installations depicted in **Tas Section F** are considered low risk and may be used if they are installed in accordance with the details shown therein and the following.
- (c) Low risk liquid trade wastes can be described as those water-borne discharges other than sewage that are classified by the permit authority, as being low risk from causing harm to the environment and *on-site wastewater management systems*. These discharges must

be trapped and partially treated before being permitted to enter the *on-site wastewater management system*.

**Explanatory information:**

Examples of low risk liquid trade wastes are discharges from—

1. food preparation in take-away shops, restaurants, hotels, motels and the like;
2. laboratories in education institutions such as schools and universities; or
3. service stations, vehicle detailing and washing.

It is the role of the permit authority to determine whether the trade waste discharge is high risk or low risk when installed in areas outside the jurisdiction of the *Network Utility Operator*.

### Tas F202.3 General installation requirements

(a) **Location**

Low risk trade waste appliances must be located as close as practicable to the fixtures and floor waste gullies served whether installed internally or externally and may be above or below ground. Portable appliances may only be installed above ground.

(b) **Covers**

Trade waste appliances must be fitted with covers which can withstand vehicular or pedestrian traffic or other loads likely to be imposed on them and be readily removable by one person.

(c) **Materials**

Trade waste appliances must be constructed of materials suitable for the nature of the liquid wastes likely to be discharged through the appliance.

(d) **Ventilation**

Where airtight covers are fitted, trade waste appliances must be vented with either a DN 50 or DN 80 vent (refer to relevant figure). Outlet ventilation is to be provided by either a—

- (i) DN 100 riser from a disconnector gully outside a building (refer clause 4.6.2 AS/NZS 3500.2); or
- (ii) DN 50 vent from a disconnector gully at the outlet of a non-portable appliance inside a building (refer clause 4.6.5 AS/NZS 3500.2); or
- (iii) DN 50 vent from a DN 80 trap riser at the outlet of a portable appliance, inside a building (refer clause 4.6.5 AS/NZS 3500.2).

Trade waste appliance vents and outlet vents may be combined inside a building (refer clause 6.8.3 AS/NZS 3500.2).

(e) **Connections**

Unless otherwise permitted by the permit authority, the *plumbing* and *drainage* installation upstream of the low risk trade waste appliance must comply with AS/NZS 3500.2 and be compatible to the nature of the waste.

A trap must be fitted to the outlet pipe of every appliance and sized as follows:

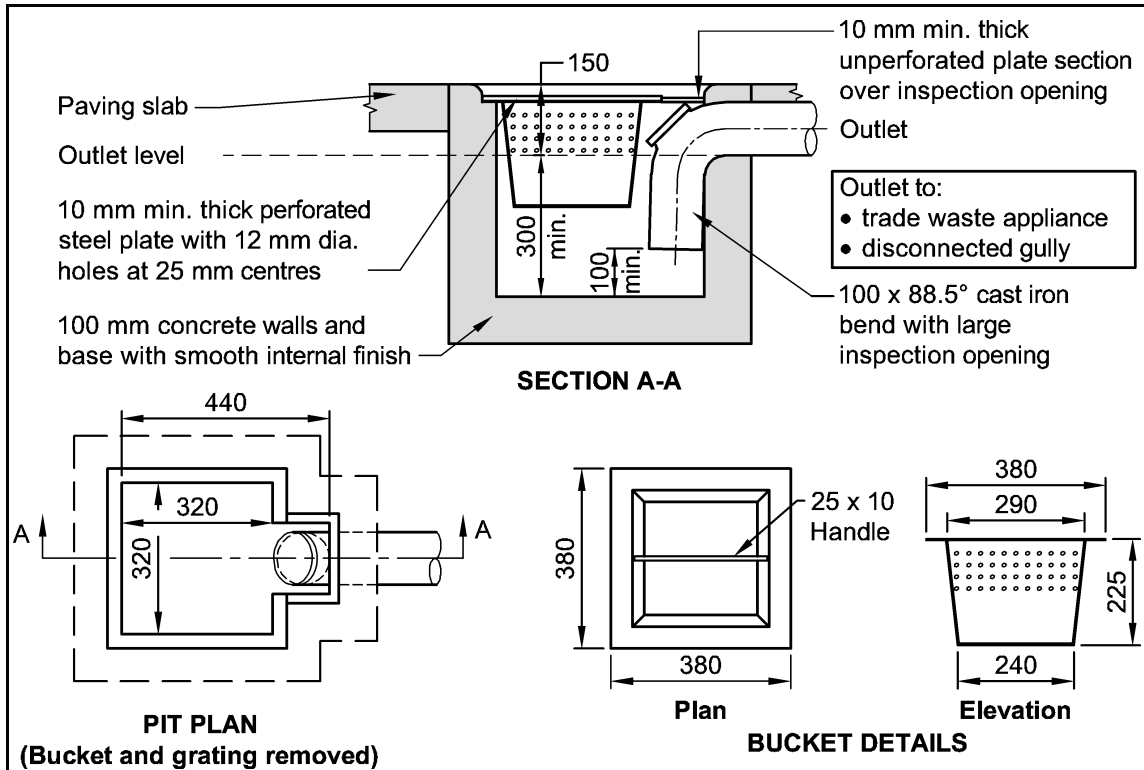
- (i) DN 50 minimum for a portable appliance with hydraulic loading up to 5 fixture units.

- (ii) DN 80 minimum for a portable appliance with hydraulic loading greater than 5 fixture units
- (iii) DN 100 minimum for all other appliances.

## Tas F202.4 Installation diagrams and notes

The low risk trade waste products and installations depicted below may be used if they are installed in accordance with the diagrams and notes shown.

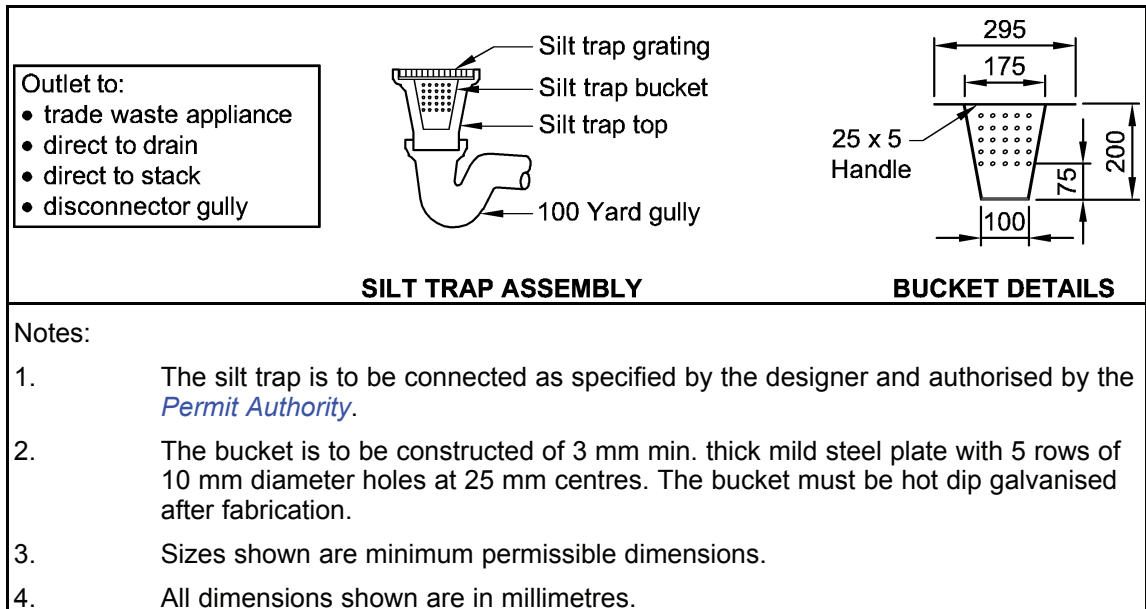
**Tas Figure F202.4a Typical silt pit**



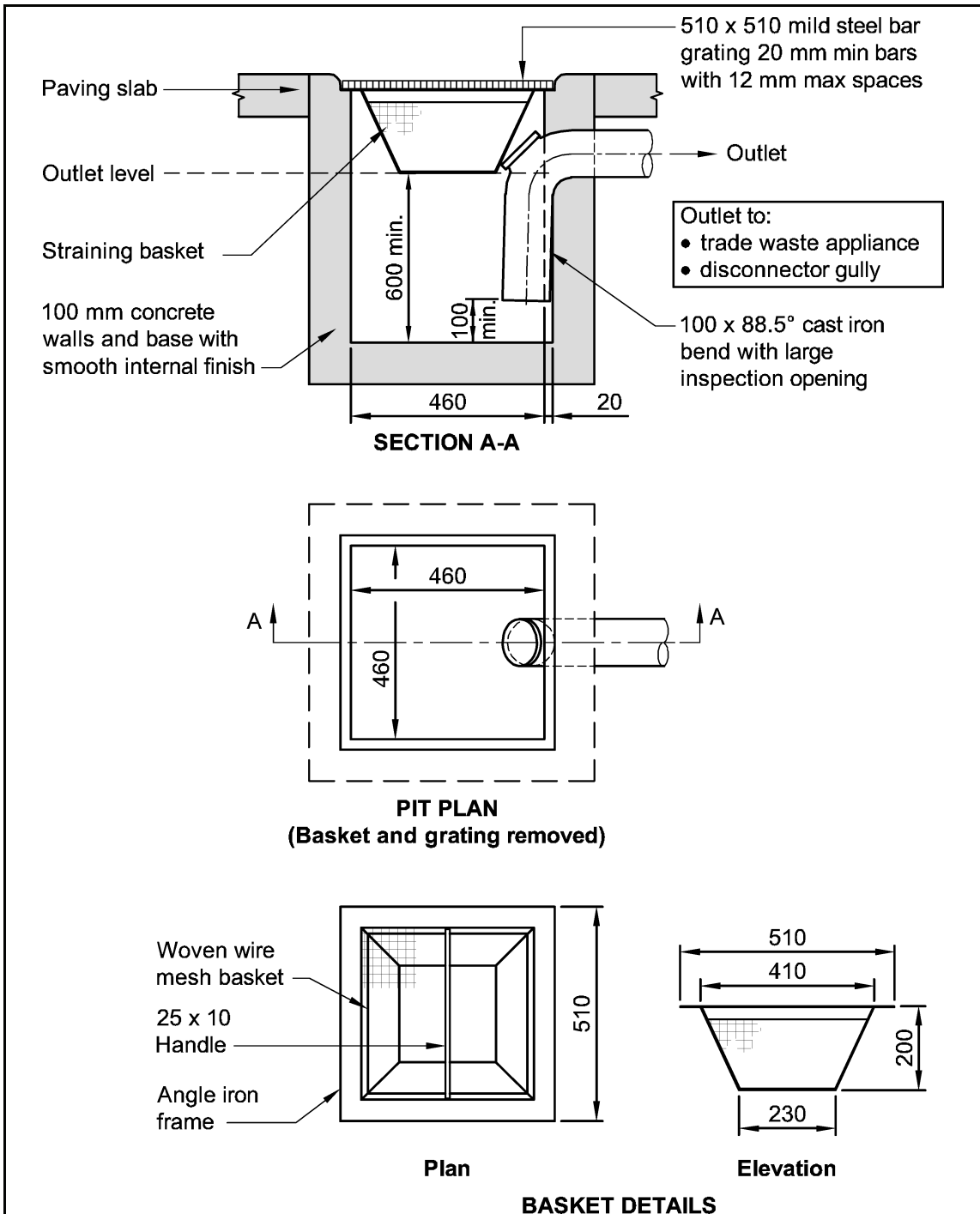
**Notes:**

- The silt pit is to be connected as specified by the designer and authorised by the [Permit Authority](#).
- The bucket is to be constructed of 3 mm min. thick mild steel plate with 4 rows of 10 mm diameter holes at 25 mm centres. The bucket must be hot dip galvanised after fabrication.
- Sizes shown are minimum permissible dimensions.
- All dimensions shown are in millimetres.

Tas Figure F202.4b Typical silt trap



Tas Figure F202.4c Typical straining pit



Notes:

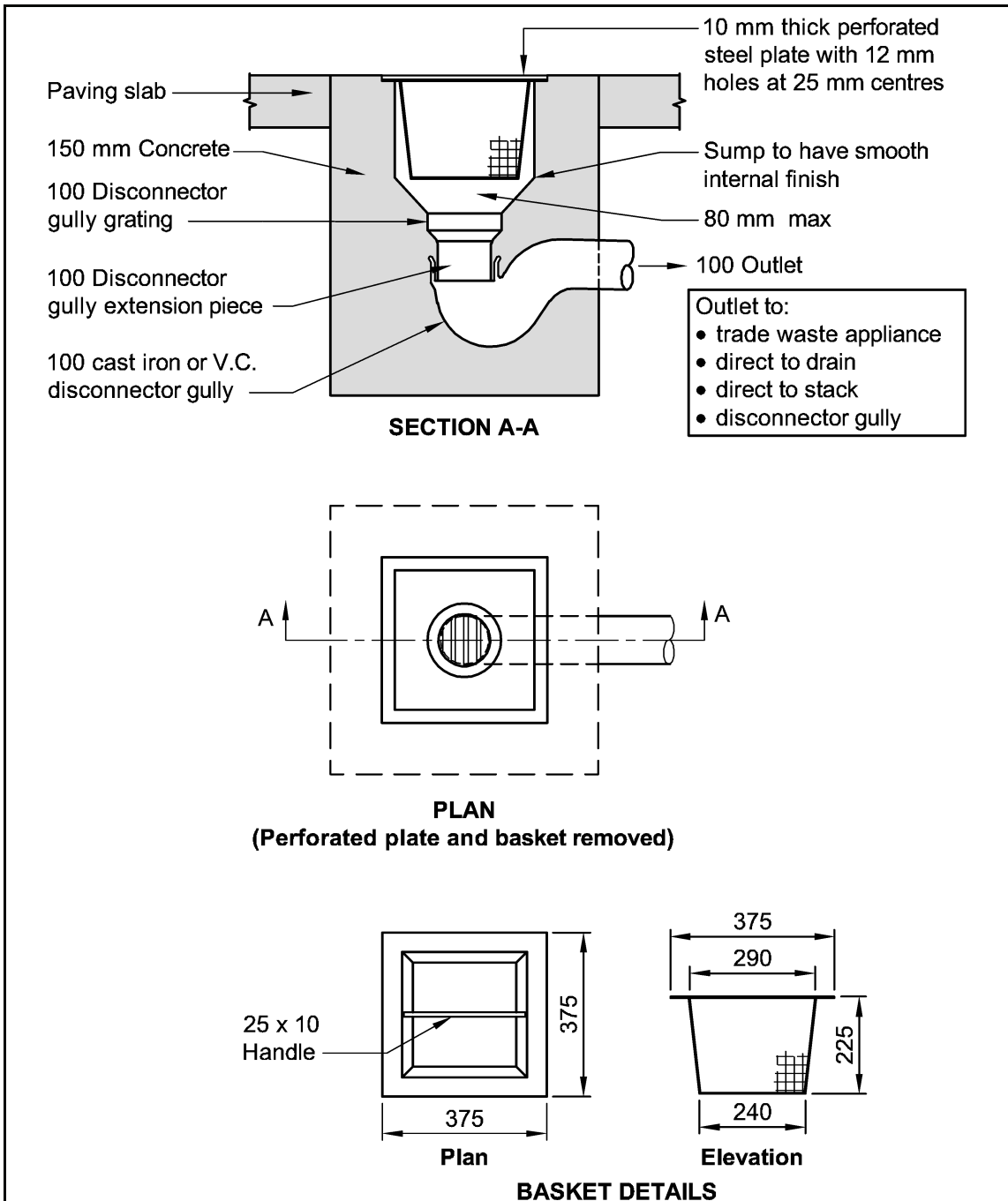
1. The straining pit is to be connected as specified by the designer and authorised by the [Permit Authority](#).

*Tas Figure F202.4c Typical straining pit— continued*

- |    |   |
|----|---|
| 2. | The basket is to be constructed of 2.5 mm min. diameter mild steel wire woven to give 7 mm aperture widths on a 32 x 32 x 3 mm angle iron frame with mitred corners. The top is to be welded from angle iron frame. The basket is to be hot dip galvanised after manufacture. Alternatively the basket may be constructed from 3 mm min. mild steel plate with 6 mm diameter holes at 12 mm centres over the entire area of the basket. The basket is to be hot dip galvanised after manufacture. |
| 3. | All dimensions are in millimetres.  |



Tas Figure F202.4d Typical straining trap



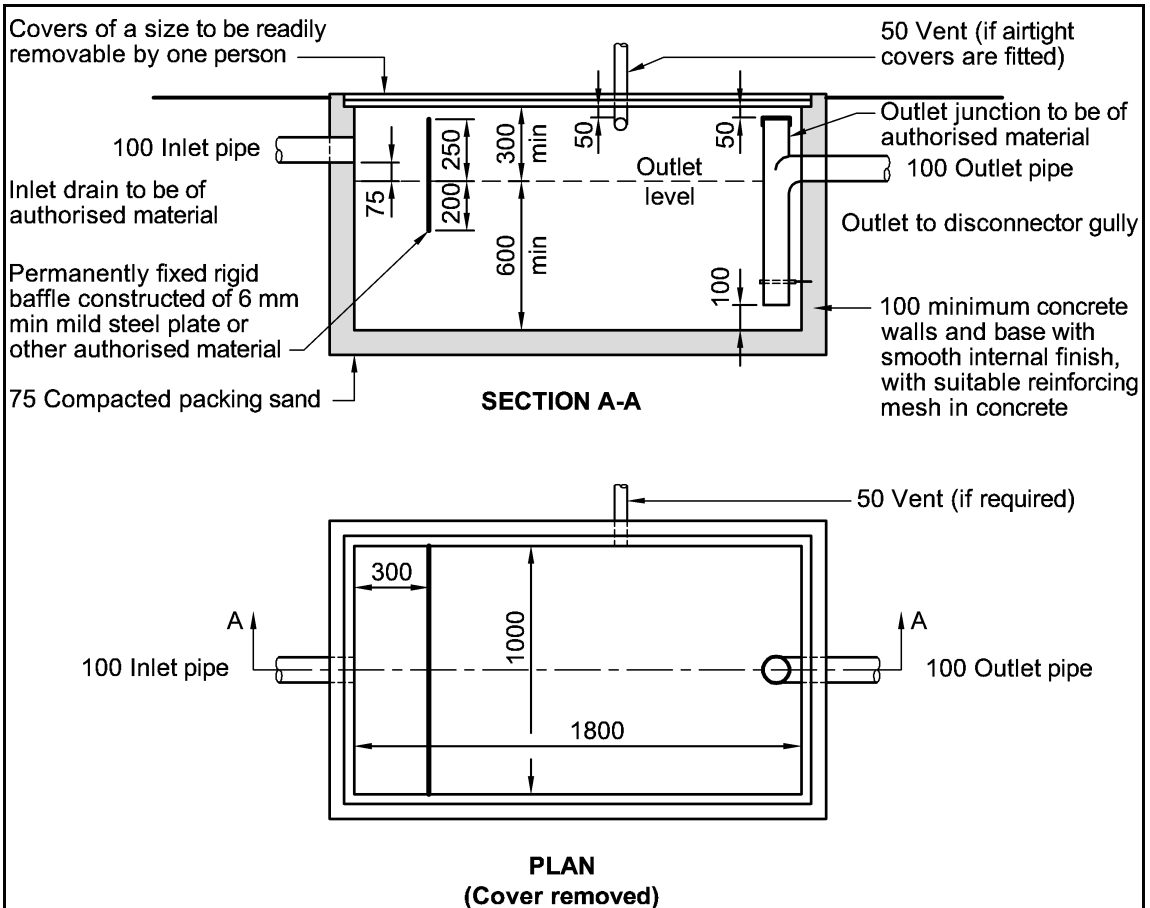
Notes:

1. The straining trap is to be connected as specified by the designer and authorised by the [Permit Authority](#).

Tas Figure F202.4d Typical straining trap— continued

2. The basket is to be constructed of 2.5 mm min. diameter mild steel wire woven to give 7 mm aperture widths on a 32 x 32 x 3 mm angle iron frame with mitred corners. The top is to be welded from angle iron frame.
3. The basket is to be hot dip galvanised after manufacture. Alternatively the basket may be constructed from 3 mm min. mild steel plate with 6 mm diameter holes at 12 mm centres over the entire area of the basket. The basket is to be hot dip galvanised after manufacture.
4. Straining traps to be used in installations connected to the *Network Utility Operator's* sewerage system must comply with the requirements of the *Network Utility Operator's* Guidelines for pre-treatment device requirements.
5. All dimensions are in millimetres.

Tas Figure F202.4e Typical grease interceptor appliance (for above or below ground installation)



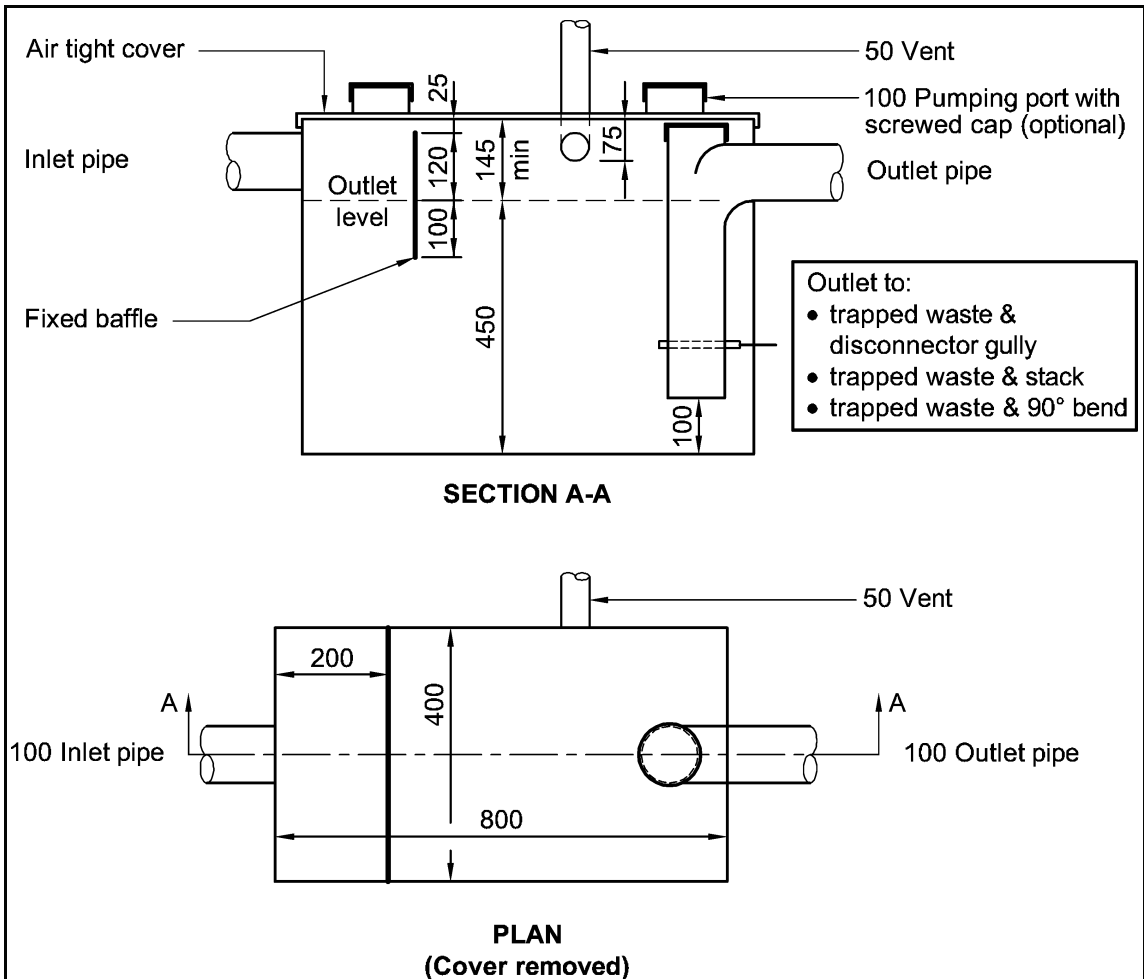
Notes:

1. The capacity of the grease interceptor appliance below the outlet is to be as specified in the design and authorised by the *Permit Authority*. The capacity of the interceptor shown is 1080 litres.

*Tas Figure F202.4e Typical grease interceptor appliance (for above or below ground installation)— continued*

2. Where not specified, the capacity below the outlet is to be equivalent to the maximum hourly discharge provided that the minimum capacity below the outlet is not less than 250 litres.
3. As the contents of the unit may become slightly acidic, it is recommended that the internal concrete surfaces below outlet level be provided with an acidic resistant lining.
4. If installed above ground the grease interceptor appliance may be constructed using other authorised materials provided adequate structural support for the grease interceptor appliance is provided.
5. The grease interceptor appliance is to be located in a position so as to provide ready access for maintenance and inspection purposes.
6. Where a grease interceptor appliance is to be installed outside a building, consideration should be given to fitting airtight covers, venting the chamber and providing a screwed cap and DN 50 vent to the disconnector gully.
7. All dimensions are in millimetres.

**Tas Figure F202.4f Typical portable grease interceptor appliance (for above ground installation)**



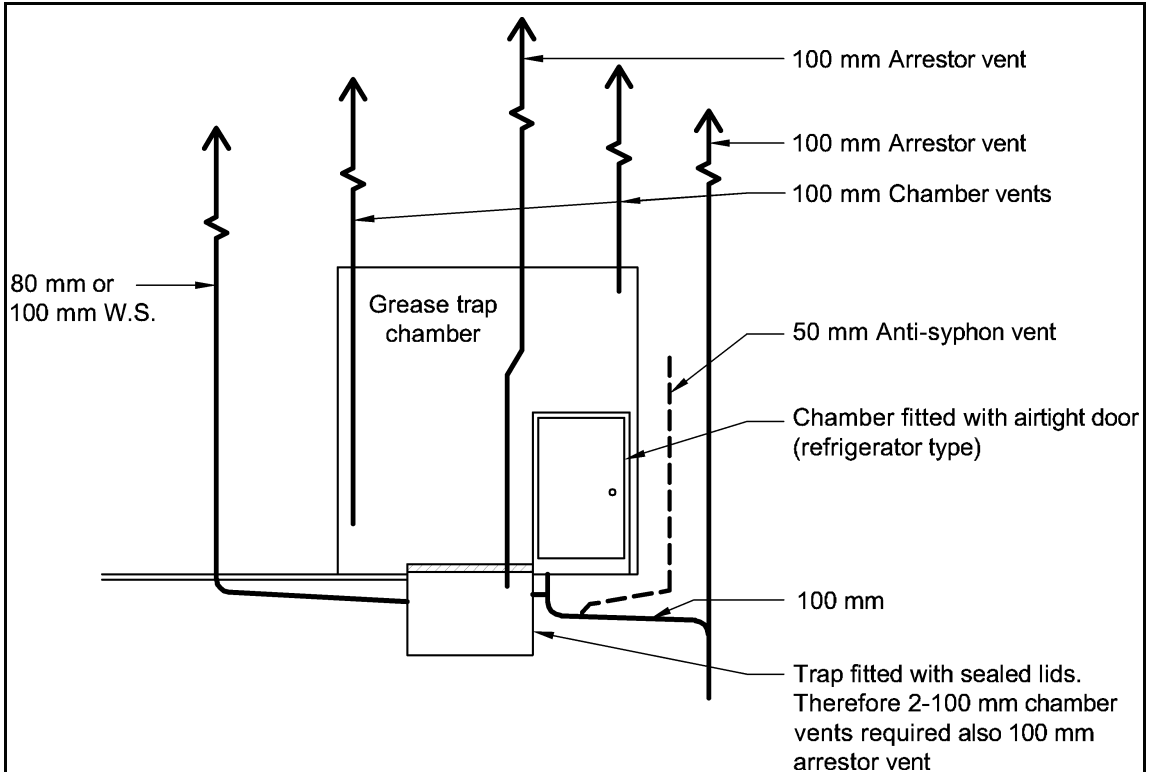
**Notes:**

1. The capacity of the grease interceptor appliance below the outlet is to be as specified in the design and authorised by the [Permit Authority](#). The capacity of the interceptor shown is 162 litres.
2. Where not specified, the capacity below the outlet is to be equivalent to the maximum hourly discharge provided that the minimum capacity below the outlet is not less than 100 litres.
3. The interceptor and baffle is to be constructed of 6 mm unplasticised polyvinyl chloride (PVC-U); 0.79 mm min. galvanised sheet steel; 0.63 mm min. sheet copper or 316 grade stainless steel, all welded construction, or other authorised material.
4. Airtight cover(s) (using lever clips) to be provided to the grease interceptor appliance and the vent is to be extended to open air in accordance with clause 6.8.3 of AS/NZS 3500.2.

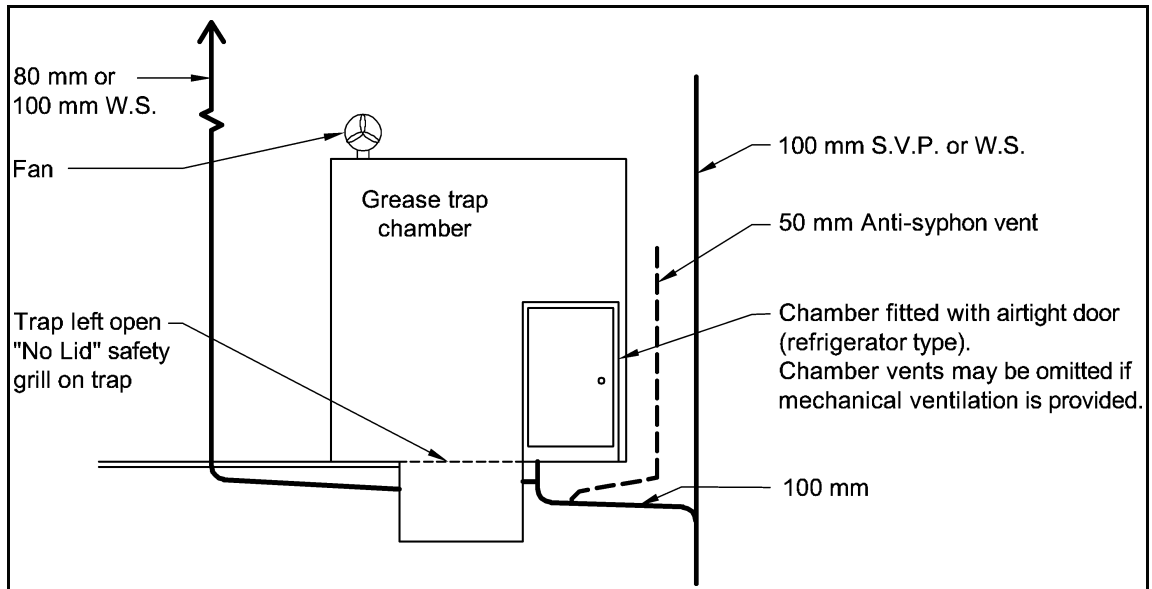
Tas Figure F202.4f Typical portable grease interceptor appliance (for above ground installation)— continued

5. The grease interceptor appliance is to be located in a position so as to provide ready access for maintenance and inspection purposes.
6. If the grease interceptor appliance is to be installed externally it is to be protected from direct sunlight.
7. All dimensions are in millimetres.

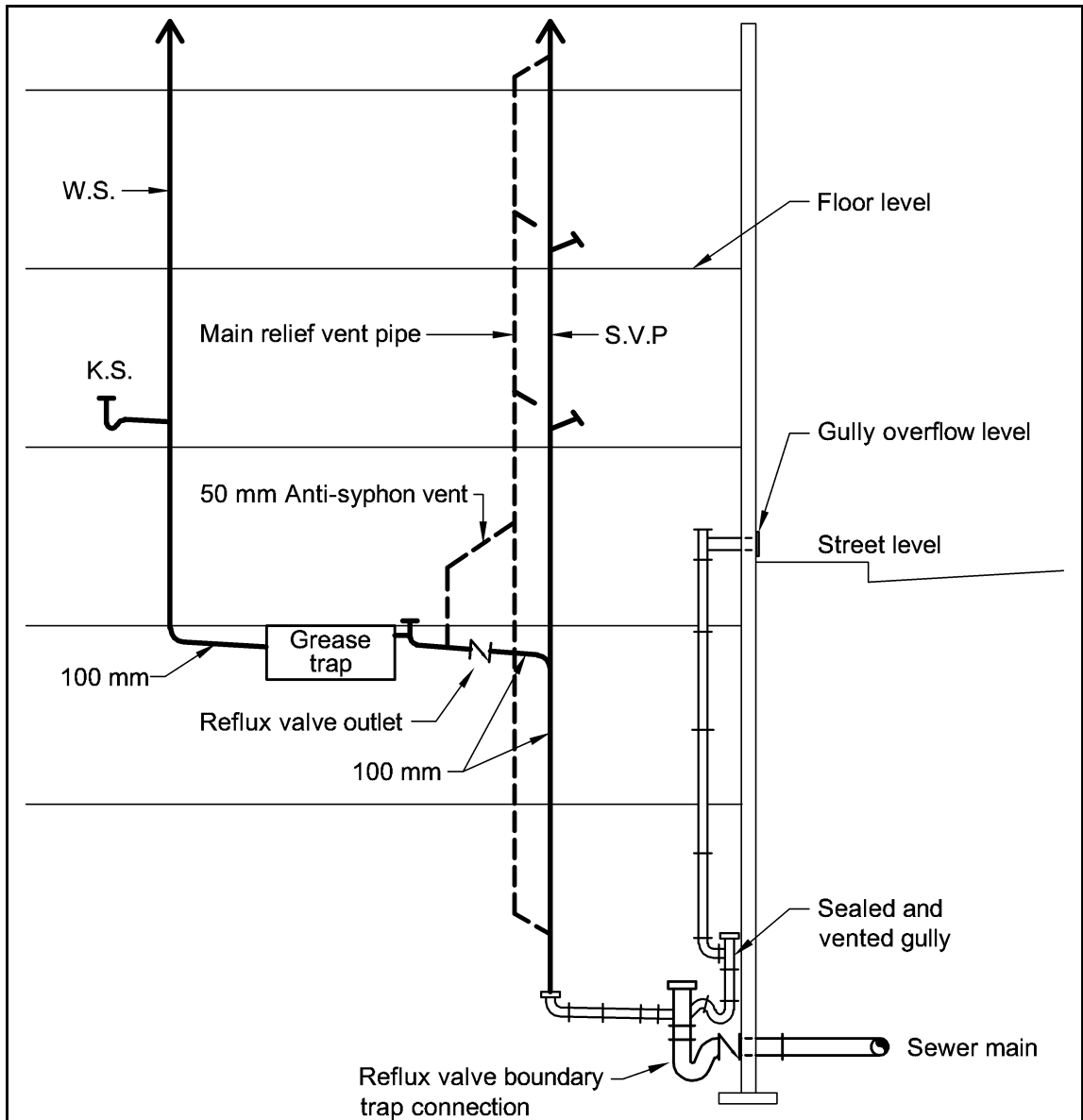
Tas Figure F202.4g Venting of grease trap chambers



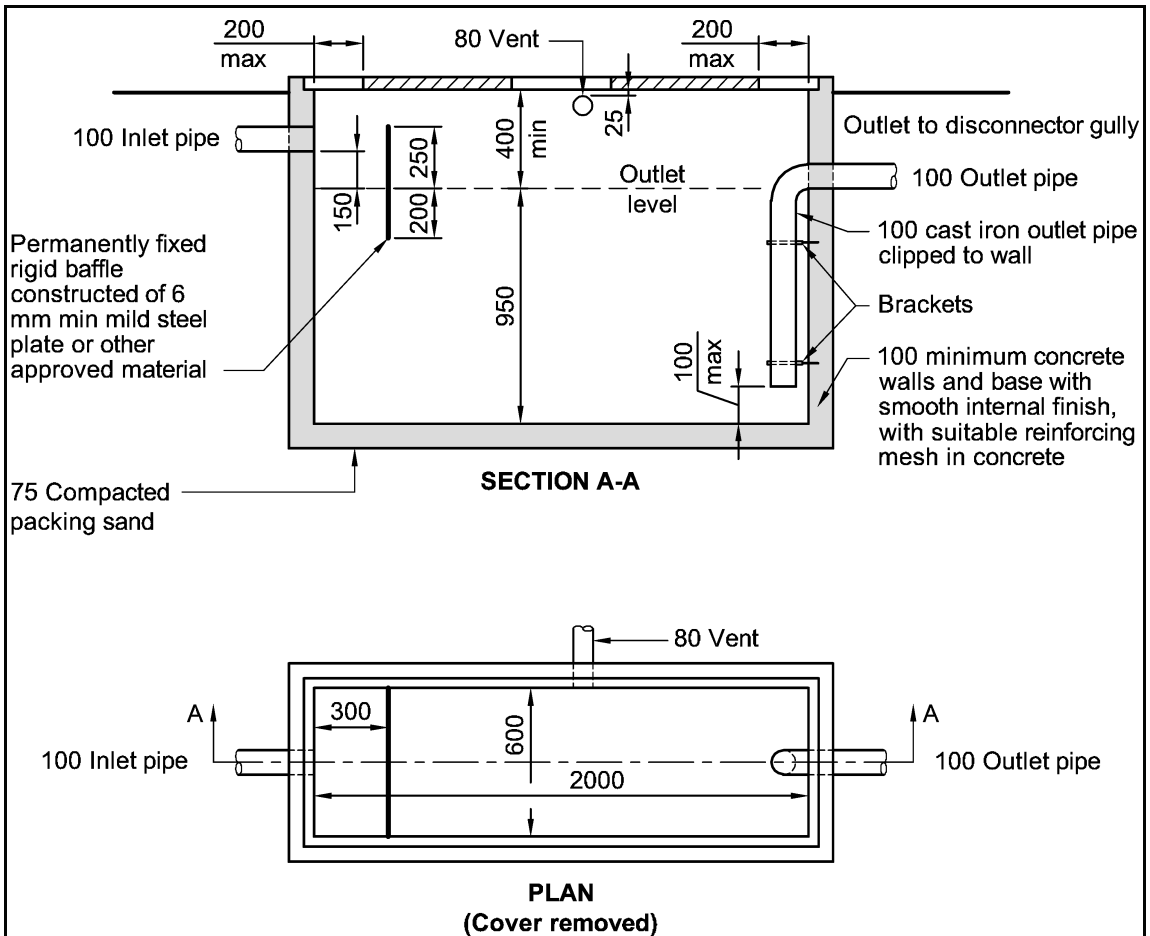
Tas Figure F202.4h Alternative (mechanical) venting of grease trap chambers



Tas Figure F202.4i Grease trap installation within multi-storey building



Tas Figure F202.4j Typical oil and petrol interceptor



Notes:

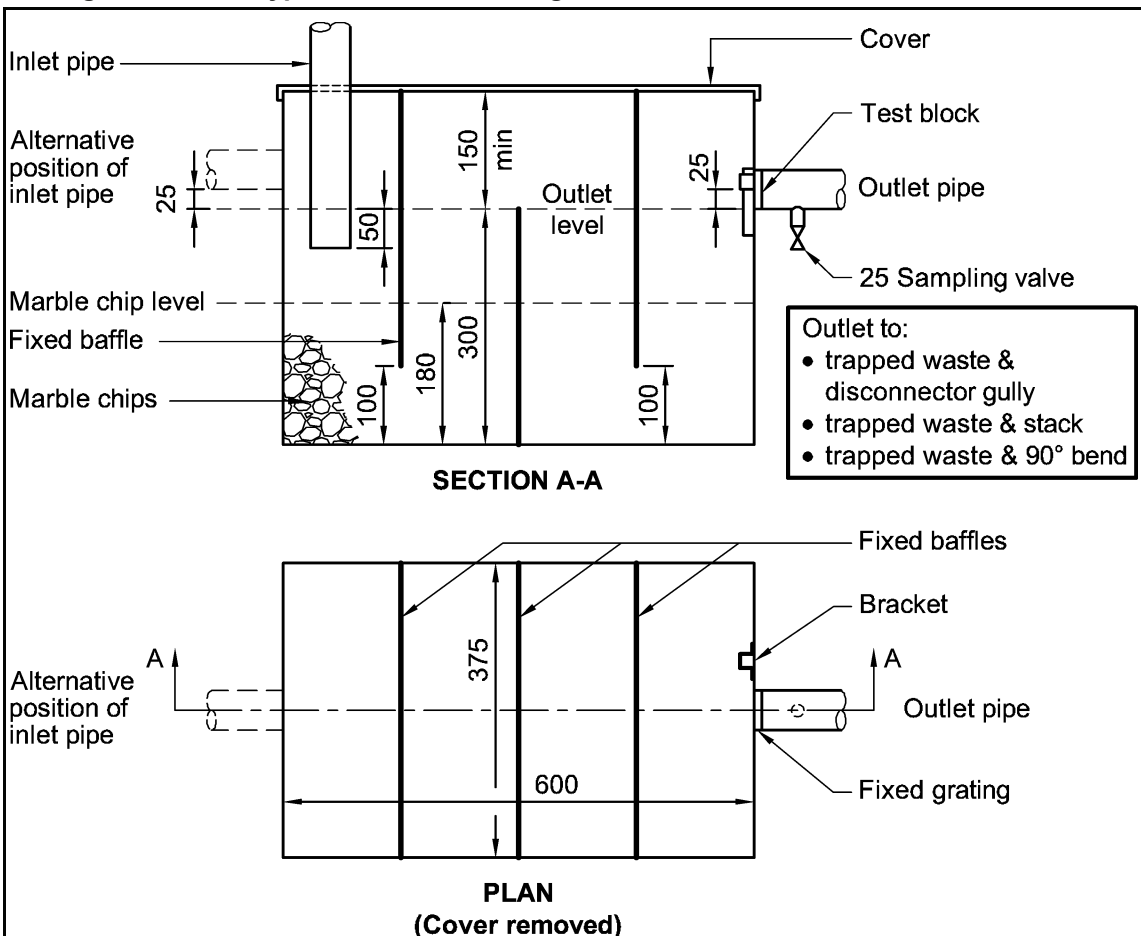
1. The capacity of the interceptor appliance below the outlet is to be as specified in the design and authorised by the [Permit Authority](#). The capacity of the interceptor shown is 1140 litres.
2. Where not specified the capacity below the outlet is to be not less than 1140 litres.
3. Airtight covers are required and are to be of a suitable size and be readily removable by one person. A 600 mm x 600 mm or 600 mm diameter cover is required over the inlet and outlet of the pit.
4. Where subject to traffic loadings, suitable covers capable of withstanding such loads are to be provided.
5. The vent is to be extended to the open air in accordance with clause 6.8.3 of AS/NZS 3500.2.
6. The DN 100 cast iron pipe outlet fitting is to be manufactured in one piece.
7. PVC-U shall not be used for the construction, connecting or venting of this unit.



Tas Figure F202.4j Typical oil and petrol interceptor— continued

8. This interceptor may accumulate quantities of explosive and/or flammable materials and therefore care is to be exercised in the maintenance and general use of the interceptor.
9. The interceptor is to be located in a position so as to provide ready access for maintenance and inspection purposes.
10. Oil and petrol interceptors and/or treatment devices connected to the [Network Utility Operator's](#) sewerage system must comply with the requirements of the [Network Utility Operator's](#) Guidelines for pre-treatment device requirements.
11. All dimensions are in millimetres.

Tas Figure F202.4k Typical acid neutralising tank



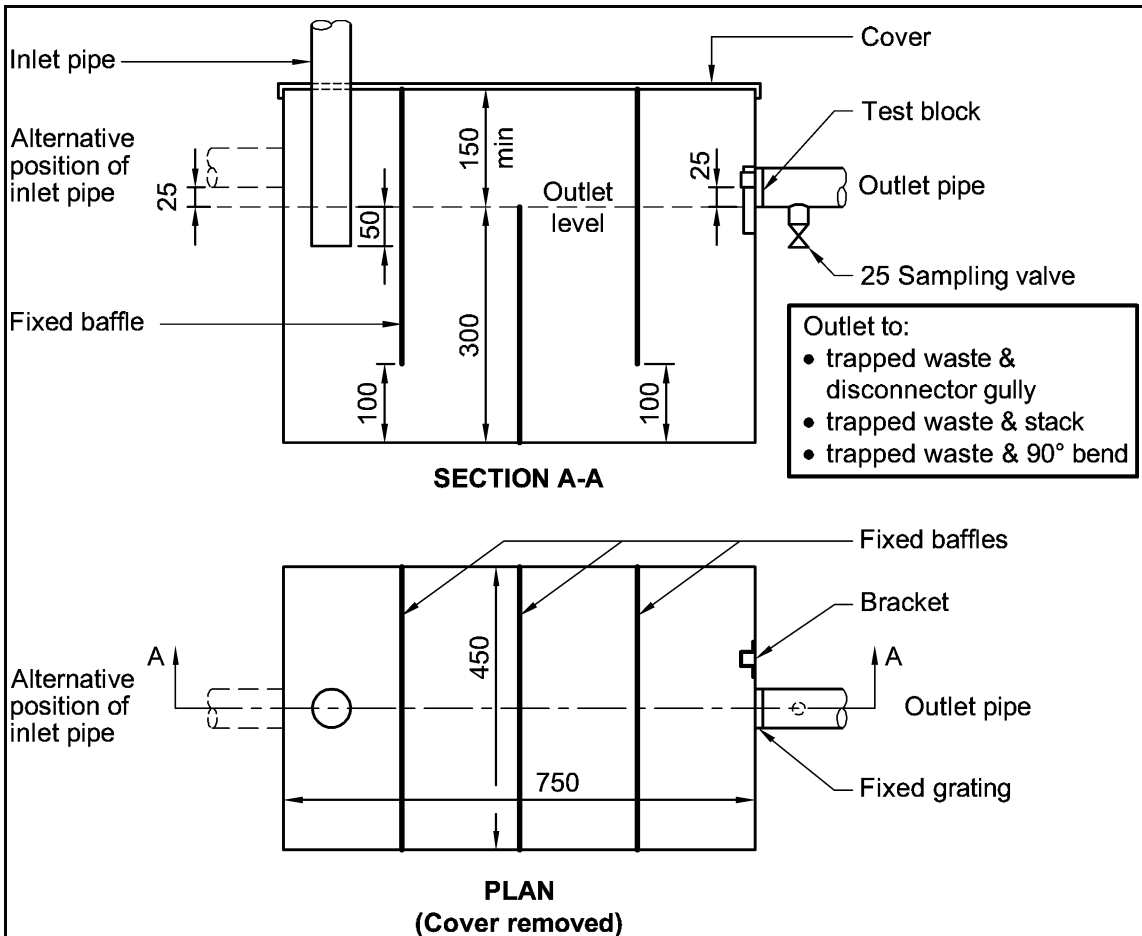
Notes:

1. The capacity of the tank below the invert level of the outlet pipe is to be as specified by the designer and authorised by the [Permit Authority](#). The capacity of the tank shown above is the minimum requirement of 27 litres between the marble chip level and the outlet level.

*Tas Figure F202.4k Typical acid neutralising tank— continued*

2. The tank and fixed baffles are to be constructed of 6 mm min. unplasticised polyvinyl chloride (PVC-U) sheet; 0.63 mm min. acid resistant stainless steel all welded construction; or other authorised acid and alkali resistant material and construction methods.
3. The diameter of the outlet pipe is to be at least one size larger than the inlet pipe (i.e. DN 65 inlet – DN 80 outlet). Where the diameter of the inlet pipe is DN 100, the diameter of the outlet may be DN 100.
4. The three baffles are to be equally spaced through the tank length.
5. The 32 x 32 x 25 mm deep PVC-U test block bracket is to be fitted as close as practicable to the outlet.
6. The 150 x 25 x 25 mm cement mortar test block is to be supplied and fitted to the satisfaction of the [Permit Authority](#).
7. The size of the marble chips are to be within the range of 40 mm to 60 mm.
8. The tank is to be located in a position so as to provide ready access for the fitting of the cement mortar test block, obtaining samples from the sampling valve, replacement of the marble chips and for ongoing maintenance purposes.
9. Where the unit is to be located below ground level:
  - a. The unit is to be surrounded with 100 mm min. thick concrete walls and base.
  - b. The DN 25 sampling valve is to be omitted.
  - c. The outlet level is to be no greater than 600 mm below surface level.
  - d. The outlet pipe diameter is to be not less than DN 100.
  - e. The outlet is to be connected to a disconnector gully fitted with a loose fitting grate or screwed cap.
10. All dimensions are in millimetres.

Tas Figure F202.4I Typical mixing tank



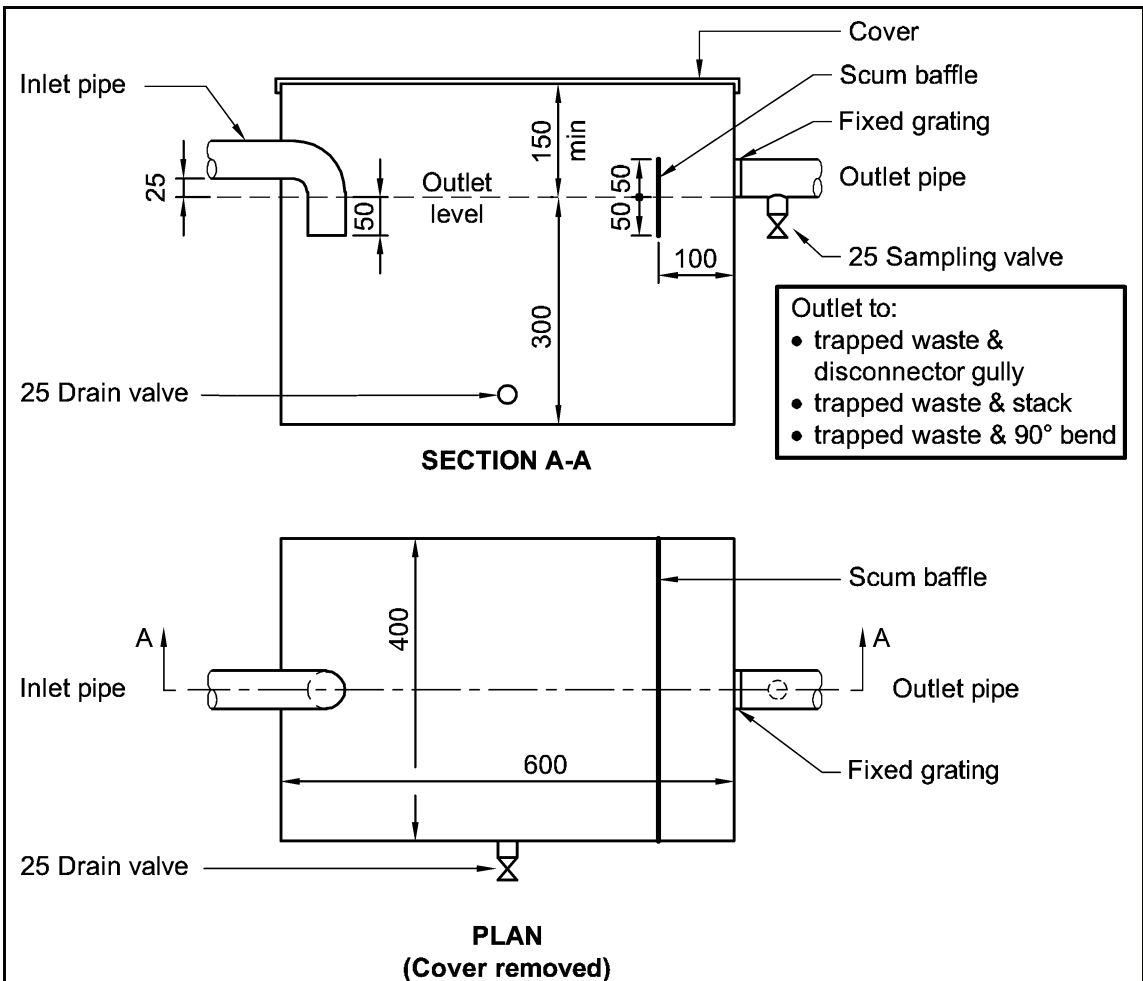
Notes:

1. The capacity of the tank below the invert level of the outlet pipe is to be as specified by the designer and authorised by the [Permit Authority](#). The capacity of the tank shown above is the minimum requirement of 100 litres.
2. The tank and baffles are to be constructed of 6 mm min. unplasticised polyvinyl chloride (PVC-U) sheet; 0.63 mm min. acid resistant stainless steel all welded construction; or other authorised acid and alkali resistant material and construction methods.
3. The diameter of the outlet pipe is to be at least one size larger than the inlet pipe (i.e. DN 65 inlet – DN 80 outlet). Where the diameter of the inlet pipe is DN 100, the diameter of the outlet may be DN 100.
4. The three baffles are to be equally spaced through the tank length.
5. The 32 x 32 x 25 mm deep PVC-U test block bracket is to be fitted as close as practicable to the outlet.
6. The 150 x 25 x 25 mm cement mortar test block is to be supplied and fitted by the water authority's authorised officer.

Tas Figure F202.4l Typical mixing tank— continued

7. Consideration should be given to the provision of adequate structural support for the tank.
8. The tank is to be located in a position so as to provide ready access for the fitting of the cement mortar test block, obtaining samples from the sampling valve, replacement of the marble chips and for ongoing maintenance purposes.
9. Where the unit is to be located below ground level:
  - a. The unit is to be surrounded with 100 mm min. thick concrete walls and base.
  - b. The DN 25 sampling valve is to be omitted.
  - c. The outlet level is to be no greater than 600 mm below surface level.
  - d. The outlet pipe diameter is to be not less than DN 100.
  - e. The outlet is to be connected to a disconnector gully fitted with a loose fitting grate or screwed cap.
10. All dimensions are in millimetres.

Tas Figure F202.4m Typical settling tank



Tas Figure F202.4m Typical settling tank— continued

Notes:

1. The capacity of the tank below the invert level of the outlet pipe is to be as specified by the designer and authorised by the *Permit Authority*. The capacity of the tank shown above is the minimum requirement of 72 litres.
2. The tank and baffles are to be constructed of 6 mm min. unplasticised polyvinyl chloride (PVC-U) sheet; 0.79 mm min. galvanised steel sheet; 0.63 mm min. or 316 grade stainless steel all welded construction; or other authorised acid and alkali resistant material and construction methods.
3. The diameter of the outlet pipe is to be at least one size larger than the inlet pipe (i.e. DN 65 inlet – DN 80 outlet). Where the diameter of the inlet pipe is DN 100, the diameter of the outlet may be DN 100.
4. The tank is to be located in a position so as to provide ready access for obtaining samples from the sampling valve and for ongoing maintenance purposes.
5. Where the unit is to located below ground level:
  - a. The unit is to be surrounded with 100 mm min. thick concrete walls and base.
  - b. The DN 25 sampling valve is to be omitted.
  - c. The outlet level is to be no greater than 600 mm below surface level.
  - d. The outlet pipe diameter is to be not less than DN 100.
  - e. The outlet is to be connected to a disconnector gully fitted with a loose fitting grate or screwed cap.
10. All dimensions are in millimetres.

## SECTION G MATERIALS AND PRODUCTS CERTIFICATION AND AUTHORISATION

### TAS PART G101 CERTIFICATION AND AUTHORISATION – ADDITIONAL REQUIREMENTS

#### Tas G101.1 Scope

This Part specifies the requirements that a *plumbing* and *drainage product* must meet to enable its use in a *plumbing* or *drainage* installation in Tasmania. A *plumbing* or *drainage* installation includes—

- (a) water *plumbing*;
- (b) roof *plumbing*;
- (c) sanitary *plumbing*;
- (d) heating, ventilation and air-conditioning *plumbing*;
- (e) *drainage* systems; and
- (f) *on-site wastewater management systems* including on-site liquid trade waste installations.

## Tas G101.2 Application

This Part applies to *plumbing* and *drainage products* used in new installations, alterations, additions and repairs and maintenance to existing installations.

### PERFORMANCE REQUIREMENTS

#### Tas G101 P1

*Plumbing* and *drainage* materials and *products* must—

- (a) be durable and fit for their intended purpose; and
- (b) meet the *Performance Requirements* of the relevant Parts of the PCA; and
- (c) be authorised.

### VERIFICATION METHODS

#### Tas G101 V1

Sanitary *plumbing* and *drainage products* may be verified as meeting the *Performance Requirements* of **Tas G101 P1** if it is certified under the *WaterMark Certification Scheme* (see ABCB website for details).

#### Tas G101 V2

A *product* for use in a stormwater installation may be verified as meeting the *Performance Requirements* of **Tas G101 P1** if it complies with the requirements of Section 2 of AS/NZS 3500.3.

#### Tas G101 V3

A *product* not covered by **Tas G101 V1** or **V2** may be authorised for use in Tasmania under **Tas G101.5**.

#### Tas G101 V4

A septic tank may be verified as meeting the *Performance Requirements* of **Tas G101 P1** if it complies with AS/NZS 1546.1.

#### Tas G101 V5

A holding tank or collection well for use in a *plumbing* or *drainage* installation may be verified as meeting the *Performance Requirements* of **Tas G101 P1** if it complies with AS/NZS 1546.1.

## Tas G101.3 Deemed-to-Satisfy Provisions

The *Performance Requirements* of **Tas G101 P1** are satisfied by complying with **Tas G101.4**.

## Tas G101.4 General requirements

- (a) A material or *product* used in a *plumbing* or *drainage* installation must be certified and authorised under the *WaterMark Certification Scheme* (see ABCB website for details), where specified under **A2.1**.
- (b) A *unique plumbing product* satisfies the *Performance Requirements* of **Tas G101 P1** if authorised by the Minister or a permit authority having jurisdiction authorises the use of a *unique plumbing product* under a plumbing permit or special plumbing permit under the *Building Act 2000* and independent third party certification in accordance with Section 266 of the *Building Act 2000* has been obtained.
- (c) A *unique plumbing product* which is a septic tank must be constructed in accordance with AS/NZS 1546.1 and be independently certified by third party certification in accordance with Section 266 of the *Building Act 2000*.
- (d) *Products* included on a list published by the Tasmanian Government for the purpose of this Part satisfy the *Performance Requirements* of **Tas G101 P1**.

## Tas G101.5 State Authorisation

### (a) Scope

This section applies to materials and *products* for use in water *plumbing*, roof *plumbing*, sanitary *plumbing* and *drainage* systems, *on-site wastewater management systems*, including on-site trade waste installations, and heating, ventilation and air-conditioning *plumbing*.

### (b) Application

This section covers *products* not covered by **A2.1(b)(i)**. This section may override the *WaterMark Certification Scheme* (see ABCB website for details) in certain cases.

### (c) Authorisation

A *plumbing product* is authorised for use in a *plumbing* installation in Tasmania if it has been authorised by the Minister or in the case of a *unique plumbing product*, either by the Minister or the relevant permit authority.

## TAS PART G102 ON-SITE WASTEWATER MANAGEMENT SYSTEM ACCREDITATION

### Tas G102.1 Scope

This Part sets out the requirements for the accreditation of *on-site wastewater management systems* to enable their installation and use in a *plumbing* installation.

### Tas G102.2 Application

This Part applies to all *on-site wastewater management systems* except for systems—

- (a) exempted under the *Tasmania Plumbing Regulations*; or
- (b) under the jurisdiction of the *Environmental Management and Pollution Control Act 1993*; or
- (c) which forms part of a water and sewerage authority's infrastructure.

## PERFORMANCE REQUIREMENTS

### Tas G102 P1

An *on-site wastewater management system* must—

- (a) be durable and fit for purpose;
- (b) meet the *Performance Requirements* of the PCA; and
- (c) be issued with a *Certificate of Accreditation* under this Part.

## VERIFICATION METHODS

### Tas G102 V1

An *on-site wastewater management system* may be verified as meeting the *Performance Requirements* of this Part if it has been issued with a *Certificate of Accreditation*.

### Tas G102 V2

An *on-site wastewater management system* is deemed to satisfy the *Performance Requirements* of this Part if a *Certificate of Accreditation* for the system has been issued.

### Tas G102.3 Deemed-to-Satisfy Provisions

The *Performance Requirements* of **Tas G102 P1** are satisfied by complying with **Tas G102.4**.

### Tas G102.4 General requirements

An *on-site wastewater management system* used in a *plumbing* installation must be issued with a *Certificate of Accreditation*.

## Footnote: OTHER LEGISLATION AFFECTING BUILDINGS

All legislative technical requirements affecting the design, construction or performance of *plumbing* installations are consolidated into the *Building Act 2000* and other legislative instruments under that Act by the adoption of all Parts of the National Construction Code.



# VICTORIA

## APPENDIX CONTENTS

### APPENDIX VICTORIA

#### Victoria

#### **B WATER SERVICES**

Vic B1.2 General requirements  
Performance Requirements Vic BP2.8  
Verification Methods Vic BV2.2  
Vic B2.2 General requirements  
Vic B2.4  
Vic B3.2 General requirements  
Vic B4.2 General requirements

#### **C SANITARY PLUMBING AND DRAINAGE SYSTEMS**

Vic C1.2 General requirements  
Performance Requirements Vic CP2.2  
Vic C2.2 General requirements

#### **VIC PART C201 REQUIREMENTS FOR DRAINAGE WORK**

Vic C201.1 Requirements for low risk on-site liquid trade waste management practices

#### **D STORMWATER DRAINAGE SYSTEMS**

Vic D1.2 General requirements

#### **E HEATING, VENTILATION AND AIR-CONDITIONING**

Vic E1.1 General requirements

**Footnote: Other Legislation Affecting Buildings**

## SECTION B WATER SERVICES

### PART B1 COLD WATER SERVICES

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

#### Vic B1.2 General requirements

- (d) *Drinking water* that is not intentionally heated must be delivered at a temperature of less than 40 degrees Celsius.
- (e) A hose tap must be provided in men's public toilets adjacent to the urinals.

### PART B2 HEATED WATER SERVICES

Delete BP2.8 and insert Vic BP2.8(a) and (b) as follows:

#### PERFORMANCE REQUIREMENTS

#### Vic BP2.8

- (a) A solar water heater system installed in a new Class 1 building must comply with the Plumbing Regulations 2008.
- (b) \* \* \* \* \*

Delete BV2.2 and insert Vic BV2.2 as follows:

#### VERIFICATION METHODS

#### Vic BV2.2

This *Verification Method* is deleted.

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

#### Vic B2.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a *heated water* service must be in accordance with the following:
  - (i) AS/NZS 3500.4 including the following additions:
    - (A) Insert after 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 after clause 4.3.2.4:

#### 4.3.2.4A Heated Water Service

The provisions of clause 5.2.8 of AS/NZS 3500.1 apply to heated water reticulation; or

- (ii) For a Class 1a or 10 building only, Section 3 of AS/NZS 3500.5 including the following addition:

Insert at the end of clause 3.2.2:

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.

- (iii) The requirements of this Part.

Delete B2.4 and insert Vic B2.4 as follows:

### **Vic B2.4**

A solar water heater system installed in a new Class 1 building must comply with the *Plumbing Regulations 2008*.

## **PART B3 NON-DRINKING WATER SERVICES**

Delete B3.2(b) and replace with Vic B3.2(b) as follows:

### **Vic B3.2 General Requirements**

- (b) The design, construction, installation, replacement, repair, alteration and maintenance of a *non-drinking water* service must be in accordance with—
  - (i) AS/NZS 3500.1; or
  - (ii) for a Class 1a or Class 10 building only, Section 2 of AS/NZS 3500.5; and the requirements of this Part, subject to the following:
  - (iii) From AS/NZS 3500.1, substitute the text of clauses 9.3.2.3(b) and (d) as follows:
    - (b) be of a type that has a removable handle;
    - (d) they shall have a non-standard inlet connecting thread and a standard hose connection outlet.
  - (iv) From AS/NZS 3500.5, substitute the text of clauses 2.17.5.3(b) and (d) as follows:
    - (b) be of a type that has a removable handle;
    - (d) they shall have a non-standard inlet connecting thread and a standard hose connection outlet.

## **PART B4 FIRE-FIGHTING WATER SERVICES**

Delete B4.2(c) and insert Vic B4.2(c) as follows:

### **Vic B4.2 General requirements**

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

- (ii) in the case of a Class 2, 3, 4, 9a or 9c building, substitute for the whole of Clause 5.7.10 in AS 2118.1: 2006, as issued, published or remade from time to time, with the following:

5.7.10 Covered balconies

Covered balconies shall be sprinkler protected.

## SECTION C SANITARY PLUMBING AND DRAINAGE SYSTEMS

### PART C1 SANITARY PLUMBING SYSTEMS

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

#### Vic C1.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary *plumbing* system must be in accordance with the following:
- (i) AS/NZS 3500.2, including the following variations and additions:
- (A) After clause 13.9(b), delete the following: Where a bath trap is not accessible, the bath shall discharge untrapped to a floor waste gully (FWG) in accordance with Table 4.6.7.2 and Appendix C.
- (B) After clause 15.1, insert 15.1(A) as follows:
- 15.1(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 in accordance with clause 15.3; and
- (C) Substitute clause 15.3.3 as follows:
- 15.3.3 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 in accordance with clause 15.3.2 over the minimum test duration specified in Table 15.3.2.
- (ii) Section 4 of AS/NZS 3500.5 including the following variations and additions:
- (A) After clause 4.37.2.2(b), delete the following:
- Where a bath trap is not accessible, the bath shall discharge untrapped to a floor waste gully (FWG) in accordance with Table 4.36.8.2 and Table 4.37.1.2 (see end of Section 4); and
- (B) After clause 4.47.1, insert 4.47.1(A) as follows:
- 4.47.1(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 in accordance with clause 4.47.3; and
- (C) Substitute clause 4.47.3.3 as follows:
- 4.47.3.3 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 in accordance with clause 4.47.3.2 over the minimum test duration specified in Table 4.47.3.3.

- (iii) The requirements of this Part.

## PART C2 SANITARY DRAINAGE SYSTEMS

Delete CP2.2 and insert 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 insert Vic C2.2(a) as follows:

### Vic C2.2 General requirements

- (a) The design, construction, installation, replacement, repair, alteration and maintenance of a sanitary *drainage* system must be in accordance with the following:
  - (i) AS/NZS 3500.2, including the following variations and additions:
    - (A) Substitute clause 5.3(c) as follows:  
5.3(c) under all bends greater than DN 65 forming risers from the drain.
    - (B) After clause 15.1, insert 15.1(A) as follows:  
15.1(A) 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 in accordance with—
        - (i) a water test in accordance with clause 15.2; or
        - (ii) an air test in accordance with clause 15.3; or
        - (iii) a vacuum test in accordance with clause 15.4; or
      - (b) in cases other than in (a), testing may be carried out by way of—
        - (i) an air test in accordance with clause 15.3; or
        - (ii) a vacuum test in accordance with clause 15.4.
    - (C) After clause 5.4.2(c)(iv) of AS/NZS 3500.2, insert (d) as follows:  
(d) Free running sand capable of passing through a 2 mm mesh sieve, and does not contain clay, organic or any other deleterious materials, shall only be used in permeable soil conditions where ground water or surface water entering the trench does not disturb the sand.
  - (ii) AS/NZS 3500.5 including the following variations and additions:
    - (A) Substitute clause 4.29(c) as follows:  
4.29(c) under all bends greater than DN 65 forming risers from the drain.
    - (B) After clause 4.47.1, insert 4.47.1(A) as follows:  
4.47.1(A) 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 in accordance with—
  - (i) a water test in accordance with clause 4.47.2; or
  - (ii) an air test in accordance with clause 4.47.3; or
  - (iii) a vacuum test in accordance with clause 4.47.4; or
- (b) in cases other than in (a), testing may be carried out by way of—
  - (i) an air test in accordance with clause 4.47.3; or
  - (ii) a vacuum test in accordance with clause 4.47.4.

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

- (d) 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.
- (e) Discharge pipes measuring DN 50 or smaller must not be installed in a below ground sanitary *drainage* system, except for discharge pipes connected to floor waste gullies.

## Vic PART C201 REQUIREMENTS FOR DRAINAGE WORK

### Vic C201.1 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 DN 32, DN 50 or DN 80 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 DN 100 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 DN 50 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 DN 50 sized vent off a DN 80 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 DN 50; or
  - (ii) if of the portable type receiving a hydraulic loading of more than 5 fixture units, be a minimum size of DN 80; or
  - (iii) in cases other than that in (i) or (ii), be a minimum size of DN 100; 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 and insert Vic D1.2 as follows:

#### Vic D1.2 General requirements

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 General requirements

- (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 13.21 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

Gas Safety Act 1997

# **WESTERN AUSTRALIA**

## **APPENDIX CONTENTS**

### **APPENDIX WESTERN AUSTRALIA**

**Footnote: Other Legislation Affecting Buildings**

## Footnote: OTHER LEGISLATION AFFECTING BUILDINGS

In addition to any applicable provisions of the *Plumbers Licensing and Plumbing Standards Regulations 2000*, *Plumbers Licensing Act 1995*, the *Building Act 2004* and this code, there are a number of other legislative technical requirements affecting the design, construction, installation, replacement, repair, alteration and maintenance of a plumbing system that practitioners may need to be aware of, including, but not limited to, the following list. Additional legislative instruments such as regulation, codes and standards may exist under the legislation listed.

### 1. Planning

#### 1.1 Administering Agency

Western Australian Planning Commission

#### Relevant Legislation

Planning and Development Act 2005

### 2. Building

#### 2.1 Administering Agency

Building Commission

#### Relevant Legislation

Building Act 2010

### 3. Health

#### 3.1 Administering Agency

Department of Health

#### Relevant Legislation

Health Act 1911

### 4. Child Care

#### 4.1 Administering Agency

Department of Communities

#### Relevant Legislation

Child Care Services Act 2006

### 5. Gas Installations

#### 5.1 Administering Agency

Energy Safety

#### Relevant Legislation

Gas Standards Act 1972

## **6. Environment**

### **6.1 Administering Agency**

Environment Protection Authority

#### **Relevant Legislation**

Environment Protection Act 1986

## **7. Electrical Installations**

### **7.1 Administering Agency**

Energy Safety

#### **Relevant Legislation**

Electricity Act 1945

## **8. Water Resource**

### **8.1 Administering Agency**

Department of Water

#### **Relevant Legislation**

Water Services Act 2012

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# HISTORY OF PCA ADOPTION

## CONTENTS

### HISTORY OF PCA ADOPTION

#### History of PCA Adoption

- 1.0 Adoption of PCA 2011
- 2.0 Adoption of PCA 2012
- 3.0 Adoption of PCA 2013
- 4.0 Adoption of PCA 2014
- 5.0 Adoption of PCA 2015
- 6.0 Adoption of PCA 2016

## HISTORY OF ADOPTION

### 1.0 Adoption of PCA 2011

The 2011 edition of the PCA was adopted by the Commonwealth, States and Territories as set out in [Table 1.0](#).

**Table 1.0 History of adoption of PCA 2011**

Administration	Adoption Date
Australian Government	1 May 2011
Australian Capital Territory	1 May 2011
New South Wales	Not adopted
Northern Territory	Not adopted
Queensland	5 May 2011
South Australia	11 July 2011
Tasmania	1 May 2011
Victoria	1 May 2011
Western Australia	Not adopted

### 2.0 Adoption of PCA 2012

The 2012 edition of the PCA was adopted by the Commonwealth, States and Territories as set out in [Table 2.0](#).

**Table 2.0 History of adoption of PCA 2012**

Administration	Adoption Date
Australian Government	1 May 2012
Australian Capital Territory	Not adopted
New South Wales	1 July 2012
Northern Territory	3 August 2012
Queensland	1 May 2012
South Australia	1 May 2012
Tasmania	1 May 2012
Victoria	1 May 2012
Western Australia	Not adopted

### 3.0 Adoption of PCA 2013

The 2013 edition of the PCA was adopted by the Commonwealth, States and Territories as set out in [Table 3.0](#).



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**HISTORY OF PCA ADOPTION**

**Table 3.0 History of adoption of PCA 2013**

<b>Administration</b>	<b>Adoption Date</b>
Australian Government	1 May 2013
Australian Capital Territory	1 September 2013
New South Wales	1 May 2013
Northern Territory	1 May 2013
Queensland	1 May 2013
South Australia	1 May 2013
Tasmania	1 May 2013
Victoria	1 May 2013
Western Australia	Not adopted

#### **4.0 Adoption of PCA 2014**

The 2014 edition of the PCA was adopted by the Commonwealth, States and Territories as set out in [Table 4.0](#).

**Table 4.0 History of adoption of PCA 2014**

<b>Administration</b>	<b>Adoption Date</b>
Australian Government	1 May 2014
Australian Capital Territory	1 May 2014
New South Wales	1 May 2014
Northern Territory	1 May 2014
Queensland	1 May 2014
South Australia	1 May 2014
Tasmania	1 May 2014
Victoria	1 May 2014
Western Australia	Not adopted

#### **5.0 Adoption of PCA 2015**

The 2015 edition of the PCA was adopted by the Commonwealth, States and Territories as set out in [Table 5.0](#).

**Table 5.0 History of adoption of PCA 2015**

<b>Administration</b>	<b>Adoption Date</b>
Australian Government	1 May 2015
Australian Capital Territory	1 May 2015
New South Wales	1 May 2015
Northern Territory	1 May 2015

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**HISTORY OF PCA ADOPTION**

*Table 5.0 History of adoption of PCA 2015 — continued*

Administration	Adoption Date
Queensland	1 May 2015
South Australia	1 May 2015
Tasmania	1 May 2015
Victoria	1 May 2015
Western Australia	1 May 2015

## 6.0 Adoption of PCA 2016

The 2016 edition of the PCA was adopted by the Commonwealth, States and Territories as set out in [Table 6.0](#).

**Table 6.0 History of adoption of PCA 2016**

Administration	Adoption Date
Australian Government	1 May 2016
Australian Capital Territory	1 May 2016
New South Wales	1 May 2016
Northern Territory	1 May 2016
Queensland	1 May 2016
South Australia	1 May 2016
Tasmania	1 May 2016
Victoria	1 May 2016
Western Australia	1 May 2016

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# LIST OF AMENDMENTS

## CONTENTS

### LIST OF AMENDMENTS

#### List of Amendments Volume Three

## LIST OF AMENDMENTS - NCC 2016 - VOLUME THREE

This set of notes has been prepared by the Australian Building Codes Board to assist NCC users in identifying changes incorporated in the 2016 edition of Volume Three of the NCC.

The notes provide a description of major changes made from the previous edition of Volume Three.

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

### List of Amendments

Reference	Changes and Commentary																
<b>General notes</b>																	
The Objectives and Functional Statements in each Part have been relocated to explanatory information.																	
<b>Introduction</b>																	
The Introduction provisions have been amended as part of the initiative to increase the use of Performance Solutions. The changes emphasise that the NCC is a performance-based code.																	
<b>Section A</b>																	
Provisions in Part A0 have been amended, restructured and relocated as part of the initiative to increase the use of Performance Solutions.																	
A1.1	The following definitions have been inserted, amended or deleted: <table><tr><td>Adequate</td><td>The defined term has been deleted, as a consequence of the deletion of the defined term 'Objective'.</td></tr><tr><td>Assessment Method</td><td>The defined term has been amended to include the new defined terms 'Performance Solution' and 'Deemed-to-Satisfy Solution' as a consequence of amendments to Part A0 and the deletion of the defined term Plumbing and Drainage Solution.</td></tr><tr><td>Approved user</td><td>The defined term has been deleted as part of the changes to the WaterMark Certification Scheme.</td></tr><tr><td>Certification mark</td><td>The defined term has been deleted as part of the changes to the WaterMark Certification Scheme.</td></tr><tr><td>Deemed-to-Satisfy Solution</td><td>A new defined term 'Deemed-to-Satisfy Solution' has been inserted.</td></tr><tr><td>Expert Judgement</td><td>The defined term has been amended to include the new defined terms 'Performance Solution' and 'Deemed-to-Satisfy Solution'.</td></tr><tr><td>Functional Statement</td><td>The defined term has been deleted, as it is no longer used in the NCC.</td></tr><tr><td>Objective</td><td>The defined term has been deleted, as it is no longer used in the NCC.</td></tr></table>	Adequate	The defined term has been deleted, as a consequence of the deletion of the defined term 'Objective'.	Assessment Method	The defined term has been amended to include the new defined terms 'Performance Solution' and 'Deemed-to-Satisfy Solution' as a consequence of amendments to Part A0 and the deletion of the defined term Plumbing and Drainage Solution.	Approved user	The defined term has been deleted as part of the changes to the WaterMark Certification Scheme.	Certification mark	The defined term has been deleted as part of the changes to the WaterMark Certification Scheme.	Deemed-to-Satisfy Solution	A new defined term 'Deemed-to-Satisfy Solution' has been inserted.	Expert Judgement	The defined term has been amended to include the new defined terms 'Performance Solution' and 'Deemed-to-Satisfy Solution'.	Functional Statement	The defined term has been deleted, as it is no longer used in the NCC.	Objective	The defined term has been deleted, as it is no longer used in the NCC.
Adequate	The defined term has been deleted, as a consequence of the deletion of the defined term 'Objective'.																
Assessment Method	The defined term has been amended to include the new defined terms 'Performance Solution' and 'Deemed-to-Satisfy Solution' as a consequence of amendments to Part A0 and the deletion of the defined term Plumbing and Drainage Solution.																
Approved user	The defined term has been deleted as part of the changes to the WaterMark Certification Scheme.																
Certification mark	The defined term has been deleted as part of the changes to the WaterMark Certification Scheme.																
Deemed-to-Satisfy Solution	A new defined term 'Deemed-to-Satisfy Solution' has been inserted.																
Expert Judgement	The defined term has been amended to include the new defined terms 'Performance Solution' and 'Deemed-to-Satisfy Solution'.																
Functional Statement	The defined term has been deleted, as it is no longer used in the NCC.																
Objective	The defined term has been deleted, as it is no longer used in the NCC.																

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**LIST OF AMENDMENTS**

*List of Amendments— continued*

Reference	Changes and Commentary
	<p>Performance Requirement    The defined term has been amended to include the new defined terms 'Performance Solution' and 'Deemed-to-Satisfy Solution'.</p> <p>Performance Solution    A new defined term 'Performance Solution' has been inserted.</p> <p>Recognised testing laboratory    The defined term 'Recognised testing laboratory' has been replaced by the term 'Registered Testing Authority'.</p> <p>Registered Testing Authority    A new defined term has been inserted to align with NCC Volumes One and Two.</p> <p>Specification    The defined term has been deleted as part of the changes to the WaterMark Certification Scheme.</p> <p>Verification Method    The defined term has been amended to include the new defined term 'Performance Solution'.</p> <p>Warranty    The defined term has been deleted as part of the changes to the WaterMark Certification Scheme.</p> <p>WaterMark WaterMark Certificate of Conformity WaterMark Conformity Assessment Body WaterMark Certification Scheme WaterMark Exempt Products</p> <p>WaterMark Licence    New defined terms have been included as part of the changes to the WaterMark Certification Scheme.</p> <p>Watermark Schedule of Excluded Products WaterMark Schedule of Products</p>
Figure A1.1	Figure A1.1 (Climate Zone Map) has been updated to reflect a minor change in Local Government boundaries.

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**LIST OF AMENDMENTS**

*List of Amendments— continued*

<b>Reference</b>	<b>Changes and Commentary</b>
A1.2(a) and (e)	A1.2(a) and (e) have been amended to remove reference to the defined term 'specification'.
A1.4(a)	A1.4(a) has been amended to remove reference to the defined term 'specification'.
A1.5 and A1.6	Amended to clarify that the NCC is a performance-based code.
A1.7(a)	New sub-clause inserted to align with the similar provision in NCC Volumes One and Two.
A2.0	A new clause has been inserted to provide a transitional provision for changes to the WaterMark Certification Scheme.
A2.1(b)	A2.1(b) has been restructured to clarify which materials and products can be considered fit for purpose under the PCA. This change forms part of the changes to the WaterMark Certification Scheme.
A2.1(c)	A2.1(c) has been deleted to reflect the transfer of content from Section G as part of the changes to the WaterMark Certification Scheme.
A2.1(d)	A2.1(d) has been amended to include a reference to A2.2. This change forms part of the changes to the WaterMark Certification Scheme.
A2.1(e)	A2.1(e) has been deleted to reflect the transfer of content from Section G as part of the changes to the WaterMark Certification Scheme.
A2.1(f)	A2.1(f) has been deleted to reflect the transfer of its content as part of the changes to the WaterMark Certification Scheme.
A2.1(g) and (h)	A2.1(g) and (h) have been deleted as part of the changes to the WaterMark Certification Scheme.
A2.1 Explanatory information	New explanatory information inserted to outline the operation of A2.1 and its relationship to the WaterMark Certification Scheme.
Table A2.1	Table A2.1 has been deleted to reflect the transfer of its content as part of the proposed changes to the WaterMark Certification Scheme.
A2.2(a)	A new sub-clause has been inserted to specify the acceptable forms of evidence of suitability for materials and products which require certification and authorisation under the WaterMark Certification Scheme. All following subclauses have been renumbered.
A2.2(b)	A2.2(b) has been amended to specify forms of evidence of suitability for materials and products that do not require WaterMark certification, and for compliance with a Performance Requirement or Deemed-to-Satisfy Provision.
A2.2(b)(i)	A2.2(b)(i) has been deleted as it has been superseded by the insertion of new sub-clause A2.2(a).
A2.2(b)(ii)	A2.2(b)(ii) has been amended to include reference to a Registered Testing Authority.
A2.2(b)(iii)(B)	Amended to remove reference to the defined term 'specification'.
A2.2 Explanatory information	New explanatory information inserted to describe the different forms of evidence of suitability provided for under A2.2, and their respective purposes.

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**LIST OF AMENDMENTS**

*List of Amendments— continued*

<b>Reference</b>	<b>Changes and Commentary</b>
Table A3.1	The following references have been amended:
AS 1668.1	The 2015 edition of AS 1668 'The use of mechanical ventilation and air-conditioning in buildings Part 1—Fire and smoke control in multi-compartment buildings' has been referenced.
AS/NZS 3500.1	The 2015 edition of AS/NZS 3500.1 'Plumbing and Drainage Part 1—Water services' has been referenced.
AS/NZS 3500.2	The 2015 edition of AS/NZS 3500.2 'Plumbing and Drainage Part 2—Sanitary plumbing and drainage systems' has been referenced.
AS/NZS 3500.3	The 2015 edition of AS/NZS 3500.3 'Plumbing and Drainage Part 3—Stormwater drainage' has been referenced.
AS/NZS 3500.4	The 2015 edition of AS/NZS 3500.4 'Plumbing and Drainage Part 4—Heated water services' has been referenced.
AS/NZS 4234	Amendment 3 of the 2008 edition of AS/NZS 4234 'Heated water systems—Calculation of energy consumption' has been referenced.
ABCB	The ABCB Manual for the Assessment of Risks of Plumbing Products has been deleted as part of the changes to the WaterMark Certification Scheme.
ISO/IEC Guide 67	ISO/IEC Guide 67: 2004 'Conformity Assessment – Fundamentals of product certification' has been deleted as part of the changes to the WaterMark Certification Scheme.
<b>Section B</b>	
BP1.2(f), BP1.3	BP1.2(f) and BP1.3 have been amended to replace the term 'adequate' with 'required'.
Part B1 Cross-volume considerations	Amended to include reference to Part J6 of NCC Volume One regarding power supply to boiling and/or chilled water storage units.
BP2.3(b) and (d)	BP2.3(b) and (d) have been amended to replace the term 'adequate' with 'required'.
BP2.6	BP2.6 has been amended to replace the term 'adequate' with 'suitable'.
Part B2 Cross volume considerations	Amended to include reference to Part J8 of NCC Volume One regarding energy consumption monitoring for water heaters.
BP3.2	BP3.2 has been amended to include reference to pipes.
BP3.3(b) and (d)	BP3.3(b) and (d) have been amended to replace the term 'adequate' with 'required'.
BP3.4	BP3.4 has been amended to replace the term 'adequate' with 'suitable'.
BP4.1(d)	BP4.1(d) has been amended to replace the term 'adequate' with 'required'.



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**LIST OF AMENDMENTS**

*List of Amendments— continued*

<b>Reference</b>	<b>Changes and Commentary</b>
<b>Section C</b>	
CP1.1(a)	CP1.1(a), (e) and (i) have been amended to replace the term 'adequate' with 'required'.
CP1.2	CP1.2 has been amended to replace the term 'adequate' with 'suitable'.
CP2.1(a) and (e)	CP2.1(a) and (e) have been amended to replace the term 'adequate' with 'required'.
CP2.1(e)	CP2.1(e) has been amended to replace the term 'adequate' with 'required'.
<b>Section D</b>	
DP1.2, DP1.4(f)	DP1.2 and DP1.4(f) have been amended to replace the term 'adequate' with 'required'.
<b>Section E</b>	
EP1.1(d)	EP1.1(d) has been amended to replace the term 'adequate' with 'required'.
<b>Section F</b>	
FP1.4, FP1.5	FP1.4 and FP1.5 have been amended to replace the term 'adequate' with 'required'.
FP2.3, FP2.4	FP2.3 and FP2.4 have been amended to replace the term 'adequate' with 'required'.
<b>Section G</b>	
Section G	The content of Section G, Part G1 has been relocated to the WaterMark Certification Scheme set out on the ABCB website.
Part G1	New explanatory information inserted to provide an outline of the WaterMark Certification Scheme, and its relationship to the NCC.
<b>History of PCA Adoption</b>	
5.0	5.0 has been amended to reflect the adoption of the 2015 edition of the PCA in Western Australia.
6.0	A new provision has been added in order to set out the adoption date of the 2016 edition of the PCA in each State and Territory.
<b>Australian Capital Territory Appendix</b>	
ACT C2.2(a)(i)(B)	The clause numbers of AS/NZS 3500.2 referred to in these variations have been amended to reflect the referencing of the 2015 edition in the PCA.
ACT C2.2(a)(i)(C)	
ACT C2.2(h)	
Footnote	The footnote listing other legislation affecting buildings has been updated.
<b>New South Wales Appendix</b>	
NSW B1.2(a)(i)(A)	The clause numbers of AS/NZS 3500.1 referred to in these variations have been amended to reflect the referencing of the 2015 edition in the PCA.

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**LIST OF AMENDMENTS**

*List of Amendments— continued*

<b>Reference</b>	<b>Changes and Commentary</b>
NSW B1.2(a)(i)(C)	
NSW B3.2(b)(i)	
NSW C2.2(a)(i)(B)	The clause numbers of AS/NZS 3500.2 referred to in these variations have been amended to reflect the referencing of the 2015 edition in the PCA.
NSW C2.2(a)(i)(F)	
<b>Northern Territory Appendix</b>	
NT A2.1(g) and (h)	These variations have been deleted consistent with the deletion of A2.1(g) and (h) from the PCA.
NT BF2.3(b)	This variation has been deleted consistent with the relocation of the Functional Statements in the PCA.
<b>Queensland Appendix</b>	
Qld B1.5(a)	A new provision has been inserted to reflect the consolidation of existing plumbing related regulatory requirements into the PCA Appendices.
Qld BO2(a), (e)	These variations have been deleted consistent with the deletion of the Objectives and Functional Statements from the PCA.
Qld BF2.3	
<b>South Australia Appendix</b>	
SA B1.2(a)(i)(A)	The clause numbers of AS/NZS 3500.1 referred to in these variations have been amended to reflect the referencing of the 2015 edition in the PCA.
SA B1.2(a)(i)(B)	
SA B2.2(a)(i)(A)	This variation has been amended.
SA B2.2(a)(i)(C)	The clause numbers of AS/NZS 3500.4 referred to in these variations have been amended to reflect the referencing of the 2015 edition in the PCA.
SA B2.2(a)(i)(D)	
SA B2.2(a)(ii)	This variation has been amended.
SA C1.2(a)(i)(D)	The clause numbers of AS/NZS 3500.2 referred to in these variations have been amended to reflect the referencing of the 2015 edition in the PCA.
SA C1.2(a)(i)(E)	
SA C1.2(a)(i)(F)	
<b>Tasmania Appendix</b>	
Tas A2.1(c), (e), (f)	These variations have been amended to reflect changes to Part A2 and Part G1 of the PCA.

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**LIST OF AMENDMENTS**

*List of Amendments— continued*

<b>Reference</b>	<b>Changes and Commentary</b>
Tas Table A3.1	The 2015 editions of AS/NZS 3500 Parts 1 and 3 have been referenced.  The 'TasWater Boundary Backflow Containment Requirements' (2015) has been referenced.
Tas B1.2(e)	A new provision has been inserted to reflect the consolidation of existing plumbing related regulatory requirements into the PCA Appendices.
Tas B101.2  Tas B101.10	The clause numbers of AS/NZS 3500.1 referred to in these variations have been amended to reflect the referencing of the 2015 edition in the PCA.
Tas C101.2(a)  Tas C2.2(d), (e)	These variations have been amended to reflect changes to Part A2 and Part G1 of the PCA.
Tas F2.2(d)(i)	This variation has been amended to reflect the consolidation of existing plumbing related regulatory requirements into the PCA Appendices.
Tas F2.2(f)	A new provision has been inserted to reflect the consolidation of existing plumbing related regulatory requirements into the PCA Appendices.
Tas F201.1  Tas F201.1(b)	These variations have been amended to reflect the consolidation of existing plumbing related regulatory requirements into the PCA Appendices.
Tas Figure F202.4d  Tas Figure F202.4j	A new note has been added to these Figures.
Tas G101 V1  Tas G101.4(a)  Tas G101.5(b)	These variations have been amended to reflect changes to Part A2 and Part G1 of the PCA.
Tas G101.4(b), (d)	These variations have been amended to reflect the consolidation of existing plumbing related regulatory requirements into the PCA Appendices.
<b>Victoria Appendix</b>	
Vic BF2.3	This variation has been deleted consistent with the deletion of the Functional Statements from the PCA.
Vic B2.2(a)(i)(B)	The clause numbers of AS/NZS 3500.4 referred to in this variation have been amended to reflect the referencing of the 2015 edition in the PCA.
Vic B2.2(a)(ii)	Amended to clarify that Section 3 of AS/NZS 3500.5 applies only to Class 1a and Class 10 buildings.

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**LIST OF AMENDMENTS**

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*List of Amendments— continued*

<b>Reference</b>	<b>Changes and Commentary</b>
Vic B3.2(b)	The clause numbers of AS/NZS 3500.1 referred to in this variation have been amended to reflect the referencing of the 2015 edition in the PCA. Also amended to clarify that Section 2 of AS/NZS 3500.5 applies only to Class 1a and Class 10 buildings.
Vic B4.2(c)	A new variation has been inserted to include a requirement to sprinkler protect covered balconies in Class 2, 3, 4, 9a and 9c buildings.
Vic C1.2(a)(i)	The clause numbers of AS/NZS 3500.2 referred in these variations have been amended to reflect the referencing of the 2015 edition in the PCA.
Vic C2.2(a)(i)	
Vic E1.2(f)(ii)	