National Construction Code Series 2015

VOLUME THREE

Plumbing Code of Australia

2015

ABCB

CONTENTS AND FEATURES INTRODUCTION

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Introduction

The Australian Building Codes Board (ABCB) is established by agreement between the Commonwealth Government and each State and Territory Government. It is a co-operative arrangement between the signatories, local government and the building industry.

ABCB Important Disclaimer
The ABCB gives no warranty or guarantee that Volume Three of the NCC 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 Volume Three of the NCC.

The ABCB recommends that anyone seeking to rely on Volume Three of the NCC obtain their own independent expert advice in relation to building or related activities. Its interpretation in no way overrides the approvals processes in any jurisdiction.

GENERAL TABLE OF CONTENTS

INTRODUCTION

THE NATIONAL CONSTRUCTION CODE SERIES

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

FORMAT

The NCC is published in three volumes:

Volume One:

pertains primarily to Class 2 to 9 buildings.

Volume Two:

pertains primarily to Class 1 and 10 buildings (houses, sheds, carports, etc).

Volume Three:

pertains primarily to *plumbing* and *drainage* associated with all classes of buildings.

All three volumes are drafted in a performance format allowing a choice of *Deemed-to-Satisfy Provisions* or flexibility to develop *Alternative Solutions* based on existing or new innovative buildings, *plumbing* and *drainage products*, systems and designs.

When complying with the *Deemed-to-Satisfy Provisions*, or when developing an *Alternative Solution* in order to comply with the PCA, consideration may need to be given to whether the *Plumbing or Drainage Solution* impacts on compliance with the Building Code of Australia (BCA).

THE PLUMBING CODE OF AUSTRALIA

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

THE 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.

THE PLUMBING CODE OF AUSTRALIA — CONTENT

GOALS

The goal of the PCA is to enable the achievement of nationally consistent, minimum necessary standards of relevant safety, 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.

STATE AND TERRITORY VARIATIONS AND ADDITIONS

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

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

DEFINITIONS

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

LEGISLATIVE ARRANGEMENTS

GENERAL

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

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

PCA ADOPTION

The adoption of the PCA is addressed in **Part A0**.

DOCUMENTATION OF DECISIONS

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

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

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

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

  (i) details of the relevant *Performance Requirements*; and

  (ii) the *Assessment Method* or methods used to establish compliance with the relevant *Performance Requirements*; and

  (iii) details of any *Expert Judgment* relied upon including the extent to which the judgement was relied upon and the qualifications and experience of the expert; and

  (iv) details of any tests or calculations used to determine compliance with the relevant *Performance Requirements*; and

  (v) details of any Standards or other information which were relied upon.

STRUCTURE

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

FURTHER REVIEW OF THE PLUMBING CODE OF AUSTRALIA

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

SECTION A

GENERAL PROVISIONS

SECTION A CONTENTS

PART A0 APPLICATION

A0.1 Adoption

The dates of adoption of the Plumbing Code of Australia are shown in the History of Adoption division at the end of this Volume.

A0.2 Scope

(a) Sections **B** to **F** of the Plumbing Code of Australia 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 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 PCA Structure

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

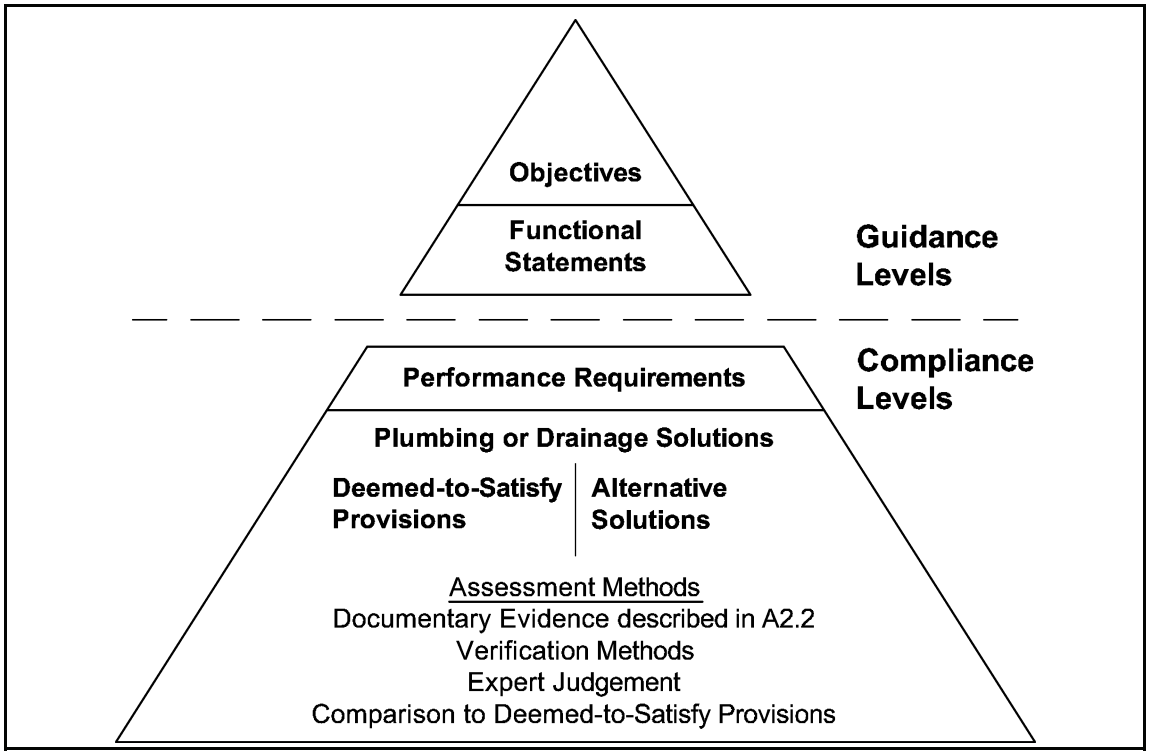
(a) The *Objectives*.

(b) The *Functional Statements*.

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

(d) The *Plumbing or Drainage Solutions*.

Figure A0.3 — PCA Structure for Plumbing Services and Systems



A0.4 Compliance with the PCA

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

A0.5 Meeting the Performance Requirements

Compliance with the *Performance Requirements* can only be achieved by—

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

(b) formulating an *Alternative Solution* which—

  (i) complies with the *Performance Requirements*; or

  (ii) is shown to be at least *equivalent* to the *Deemed-to-Satisfy Provisions*; or

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

A0.6 Objectives and Functional Statements

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

A0.7 Deemed-to-Satisfy Provisions

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

A0.8 Alternative Solutions

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

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

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

A0.9 Assessment Methods

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

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

(b) *Verification Methods* such as—

  (i) The *Verification Methods* in the PCA; or

  (ii) Such other *Verification Methods* as the authority having jurisdiction accepts for determining compliance with the *Performance Requirements*.

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

(d) *Expert Judgment*.

Explanatory Information:

The *Assessment Methods* described above are applicable only to assessment of a *Plumbing or Drainage Solution* to determine that it complies with the relevant *Performance Requirements*.

The term *Plumbing or Drainage Solution* refers to the 'use of' a material or *product* (i.e. its installation) but not the certification, where required, of that material or *product* which determines it is suitable for use.

A0.10 Relevant Performance Requirements

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

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

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

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

PART A1 INTERPRETATION

A1.1 Definitions

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 the PCA, the meaning (if any) attributed to it under AS/NZS 3500.0 Glossary of Terms should be used unless the contrary intention appears.

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

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

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

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

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

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

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

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

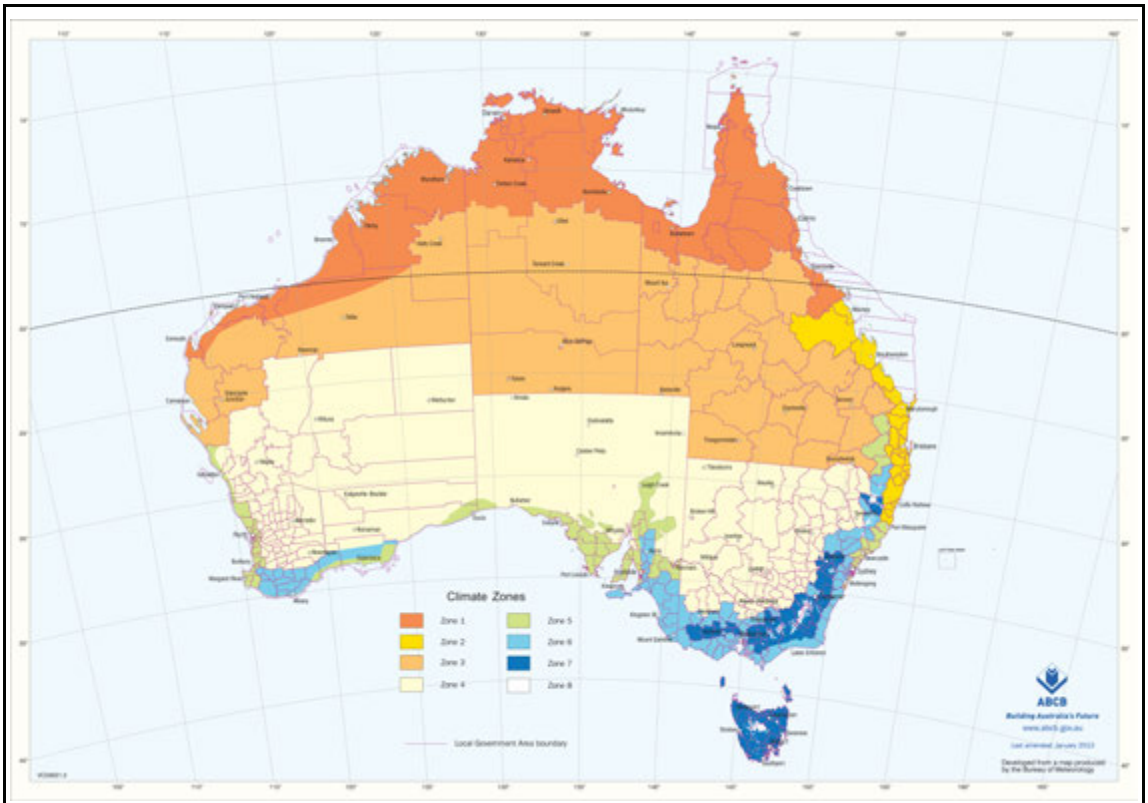
Average recurrence interval applied to rainfall, means the expected or average interval between exceedances for a 5 minute duration rainfall intensity.

Blockage means an obstruction within a *drainage* system.

Certification mark means the *WaterMark* trademark.

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 Energy Efficiency page of the ABCB web site at 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
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*
Australian Capital Territory				Canberra	7		
New South Wales							
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				
Northern Territory							
Alice Springs	3	Elliot	3	Renner Springs	3		
Darwin	1	Katherine	1	Tennant Creek	3		
Queensland							
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
South Australia							
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
Tasmania							
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*
Victoria							
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		
Western Australia							
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*.

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 *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 regulatory authority. Practitioners should seek advice from the authority having jurisdiction for clarification as to what will be accepted.

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

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

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

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

(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*.

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

(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 *Plumbing or Drainage Solution* must meet.

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

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

(a) an *Alternative Solution*; or

(b) a solution which complies with the *Deemed-to-Satisfy Provisions*; or

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

Point of connection—

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

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

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

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

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

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

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

(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.

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

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.

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

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

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

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

WaterMark means the registered certification trademark (see **Figure G1.5.4.1**).

WaterMark Certificate of Conformity (WMCC) means a document issued by the *WMCAB* describing certified *product(s)* in accordance with the *WaterMark Certification Scheme*.

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

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

WaterMark Exempt Products (WMEP) means the list maintained by the *administering body* containing details of exempt *products* including *specifications* from the *WaterMark Certification Scheme*.

WaterMark Product Database (WMPD) means a database maintained by the *administering body* containing details of certified *products* including reference to the *WaterMark Certificate of Conformity (WMCC)*.

WaterMark Schedule of Specifications (WMSS) means the list maintained by the *administering body* containing details of approved *specifications* that materials and *products* can be certified against.

Explanatory Information

The following lists can be viewed on the *WaterMark* pages of the ABCB website at www.abcb.gov.au:

1. *WaterMark Exempt Products;*
2. *WaterMark Product Database*; and
3. *WaterMark Schedule of Specifications.*

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 PCA

The PCA 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 Sections of the PCA

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

A1.6 Application of the PCA to a particular State or Territory

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

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

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

A1.7 Language

(a) 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.

(b) A reference in a *Performance Requirement* 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*.

(c) A reference to Class 1a, 1b, 7a, 7b, 9a, 9b, 9c, 10a, 10b and 10c is a reference to the separate classification.

(d) 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) 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.

(d) 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

Tas A2.1

A2.1 Suitability of materials and products

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

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

(c) *Product* certification and authorisation must comply with the procedures set out in **Part G1**.

(d) Materials and *products* intended for use in contact with *drinking water* must comply with AS/NZS 4020.

(e) Any new or innovative material or *product* must be assessed, certified and authorised, if required, in accordance with **Part G1** prior to their use in a *plumbing* or *drainage* installation.

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

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

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

NT A2.1(g)

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

NT A2.1(h)

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

A2.2 Evidence of suitability

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

Tas A2.2(a)(i)

(i) A current *certification mark* issued in compliance with the requirements of **Part G1**.

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

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

(A) certifies that a material, *product*, design, form of construction or installation complies with the requirements of the PCA; and

(B) sets out the basis on which certification is given and the extent to which relevant *specifications*, rules, codes of practice or other publications have been relied upon.

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

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

Table A2.1 MATERIALS AND PRODUCTS WHICH REQUIRE AUTHORISATION

Product **Category**	***Product*** **Type**	**Minimum certification level**
APPLIANCES AND FIXTURES		
Appliances and fixtures	General	2
Exceptions	Bedpan washer/steriliser	1
	Water filters and water treatment appliances	1
Sanitary Fixtures	General	2
Exceptions	Urinals with remote control flush systems	1
	Water closet pans and suites	1
	Bidets and Bidettes	1
	Cisterns	1
	Small-bore macerator systems	1
Water-using appliances	General	2
Exception	Beverage dispensers and ice makers	1
Water Heaters and Water Heated Storage Tanks	General	1
NON PRESSURISED PIPES, FITTINGS AND ACCESSORIES		
Non pressurised pipes, fittings and accessories	General	2

Table A2.1 MATERIALS AND PRODUCTS WHICH REQUIRE AUTHORISATION — continued

***Product* Category**	***Product* Type**	**Minimum certification level**
Exception	PVC-U	1
Vent valves - General	General	2
Pipes and Fittings (non pressure)	General	2
Non-Return Reflux valves for Sewerage	General	2
PRESSURISED PIPES, FITTINGS AND ACCESSORIES		
Pressurised pipes, fittings and accessories	General	1
Exception	Shower heads	2
MATERIAL IN CONTACT WITH DRINKING WATER		
Material in contact with *drinking water*	General	1
Water linings	General	1
WATER SUPPLY VALVES AND VALVE ACCESSORIES		
Water supply valves and valve accessories	General	1
Backflow Prevention Devices	General	1
Control Valves and Taps	General	1
Valves for Pressure and Temperature	General	1
Valve and Tap Accessories	General	1
Fire Protection	General	1
GREYWATER DIVERSION DEVICES (Gravity or pumped discharge)		
Greywater diversion devices (gravity or pumped discharge)	General	2

NOTES:

1. For a comprehensive list of *product* types and applications, *specifications* and exemptions, see the *WaterMark Schedule of Specifications* and *WaterMark Exempt Products*.
2. All materials in contact with *drinking water* must comply with AS/NZS 4020.
3. Where a *product* category and the *product* type have different minimum certification levels, the certification level of the *product* type is also nominated.
4. For *products* not listed in **Table A2.1** or *WaterMark Schedule of Specifications*, the minimum certification level shall be determined in accordance with the ABCB Manual for the Assessment of Risks of Plumbing Products and **Part G1**.
5. For *products* which have been authorised but which are not listed, refer to the authority having jurisdiction.

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
AS 1056		Storage water heaters	
Part 1	1991	General requirements	**B2.4**
		Amdt 1	
		Amdt 2	
		Amdt 3	
		Amdt 4	
		Amdt 5	
AS/NZS 1200	2000	Pressure equipment	**E1.2**
AS 1271	2003	Safety valves, other valves, liquid level gauges, and other fittings for boilers and unfired pressure vessels	**E1.2**
		Amdt 1	
AS 1324		Air filters for use in general ventilation and air-conditioning	
Part 1	2001	Application, performance and construction	**E1.2**
AS 1345	1995	Identification of the contents of pipes, conduits and ducts	**E1.2**
AS 1358	2004	Bursting discs and bursting disc devices - Application, selection, installation	**E1.2**
		Amdt 1	
AS 1428		Design for access and mobility	
Part 1	2009	General requirements for access – New building work	**B1.3**, **B2.3**, **C1.3**
		Amdt 1	
Part 1	2001	General requirements for access – New building work	**B1.3**, **B2.3**, **C1.3**
Part 2	1992	Enhanced and additional requirements – Buildings and facilities	**B1.3**, **B2.3**, **C1.3**
AS/NZS 1546		On-site domestic wastewater treatment units	
Part 1	1998	Septic tanks	**C2.2**, **F1.2**

Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS — continued

Document No.	Date	Title	PCA Clause
Part 2	2001	Waterless composting toilets	C2.2, F1.2
Part 3	2001	Aerated wastewater treatment systems	C2.2, F1.2
AS/NZS 1547	2000	On-site domestic wastewater management	C2.2, F1.2
AS/NZS 1571	1995	Copper – Seamless tubes for air-conditioning and refrigeration	E1.2
AS/NZS 1668		The use of mechanical ventilation and air-conditioning in buildings	
Part 1	1998	Fire and smoke control in multi-compartment buildings	E1.2
		Amdt 1	
AS 1668		The use of mechanical ventilation and air-conditioning in buildings	
Part 2	2012	Mechanical ventilation in buildings	E1.2
		Amdt 1	
AS 2118		Automatic fire sprinkler systems	
Part 1	1999	General Requirements	B4.2
		Amdt 1	
Part 4	2012	Sprinkler protection for accommodation buildings not exceeding four storeys in height	B4.2
Part 5	1995	Automatic fire sprinkler systems - Domestic	B4.2
Part 6	2012	Combined sprinkler and hydrant systems in multi-storey buildings	B4.2
Part 9	1995	Piping support and installation	B4.2
AS 2419		Fire hydrant installations	
Part 1	2005	System design, installation and commissioning	B4.2
		Amdt 1	
AS 2441	2005	Installation of fire hose reels	B4.2
		Amdt 1	
AS/NZS 3500		Plumbing and Drainage	
Part 0	2003	Glossary of terms	A1.1
Part 1	2003	Water services	B1.2, B3.2, B4.2, E1.2
		Amdt 1	
		Amdt 2	

Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS — continued

Document No.	Date	Title	PCA Clause
Part 2	2003	Sanitary plumbing and drainage Amdt 1 Amdt 2 Amdt 3 Amdt 4	C1.2, C2.2, E1.2, F1.2, F2.2
Part 3	2003	Storm water drainage Amdt 1 Amdt 2 Amdt 3	A2.1, D1.2, D2.2
Part 4	2003	Heated water services Amdt 1 Amdt 2	B2.2, B2.4 E1.2
Part 5	2012	Housing installations	B1.2, B2.2, B3.2, C1.2, C2.2, D1.2, D2.2, F1.2
AS/NZS 3666		Air handling and water systems of buildings – Microbial Control	
Part 1	2011	Design, installation and commissioning	E1.2
Part 2	2011	Operation and maintenance	E1.2
AS/NZS 4020	2005	Testing of products in contact with drinking water	A2.1, G1.5
AS 4041	2006	Pressure Piping	E1.2
AS 4118.2.1	1995	Fire Sprinkler Systems - Piping - General Amdt 1	B4.2
AS/NZS 4234	2008	Heated water systems – Calculation of energy consumption Amdt 1 Amdt 2	BV2.2, B2.4
AS 4254		Ductwork for air-handling systems in buildings	
Part 1	2012	Flexible Duct	E1.2
Part 2	2012	Rigid Duct	E1.2
AS 4426	1997	Thermal insulation of pipework, ductwork and equipment – selection, installation and finish	E1.2
AS 4508	1999	Thermal resistance of insulation for ductwork used in building air conditioning Amdt 1	E1.2

Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS — continued

Document No.	Date	Title	PCA Clause
AS 4552	2005	Gas fired water heaters for hot water supply and/or central heating	**B2.4**
AS 5601	2004	Gas Installations	**E1.2**
ABCB	2013	Manual for the Assessment of Risks of Plumbing Products	**A2.1**, **G1.2**, **G1.5**
ISO/IEC Guide 67	2004	Conformity assessment – Fundamentals of product certification	**G1.5**

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^2 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**

WATER SERVICES

SECTION B CONTENTS

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.

OBJECTIVE

BO1

The *Objective* of this Part is to—

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

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

(c) conserve water and energy; and

(d) safeguard the environment; and

(e) safeguard public and private infrastructure; and

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

FUNCTIONAL STATEMENTS

BF1.1

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

BF1.2

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

PERFORMANCE REQUIREMENTS

BP1.1 Cold water service

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

BP1.2 Cold water service installation

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

(a) avoid the likelihood of contamination of *drinking water* within both the water service and the *Network Utility Operator's* supply; and

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

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

(d) facilitate the efficient use of *drinking water*; and

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

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

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 45º 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 *adequate* for their use.

BP1.4 Materials and products

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

VERIFICATION 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)

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

(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:

	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
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

PART B2 HEATED WATER SERVICES

B2.0 Scope

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

OBJECTIVE

BO2

The *Objective* of this Part is to—

Qld BO2(a)

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

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

(c) conserve water; and

(d) safeguard the environment; and

Qld BO2(e)

(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.

Qld BF2.3

Vic BF2.3

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

NT BF2.3(b)

(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.

Explanatory information:

1. The greenhouse gas intensity of energy sources vary. For example, natural gas has a low greenhouse gas intensity compared with electricity generated from coal.
2. For the purposes of **BF2.3**, the *renewable energy* source must be on-site (not GreenPower) and includes, but is not limited to, solar, wind, hydroelectric, wave action and geothermal.

PERFORMANCE REQUIREMENTS

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 *adequate* for the correct functioning of those fixtures and appliances under normal conditions and in a manner that does not create undue noise; and

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

(d) * * * * *

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

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

BP2.4 Pressure Vessels

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

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

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

BP2.5 Heated water storage

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

BP2.6 People with a disability

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

BP2.7 Materials and Products

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

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 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_2 –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_2-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_2-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_2-e/MJ; or

(B) if the energy source is liquified petroleum gas, 65 g CO_2-e/MJ; or

(C) if the energy source is natural gas, 61 g CO_2-e/MJ; or

(D) if the energy source is wood or biomass, 4 g CO_2-e/MJ.

Explanatory information:

In **BV2.2**, the symbol "g CO_2-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:

	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
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

PART B3 NON-DRINKING WATER SERVICES

B3.0 Scope

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

OBJECTIVE

BO3

The *Objective* of this Part is to—

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

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

(c) conserve water and energy; and

(d) safeguard the environment; and

(e) safeguard public and private infrastructure; and

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

FUNCTIONAL STATEMENTS

BF3.1

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

BF3.2

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

PERFORMANCE REQUIREMENTS

BP3.1 Non-drinking water service

(a) A *non-drinking water* supply must only be connected to outlets clearly identified for non-drinking use and must be limited to the uses specified in **B3.3**.

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

BP3.2 Identification

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

BP3.3 Non-drinking water service installations

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

(a) avoid the likelihood of contamination of *drinking water*; and

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

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

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

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

BP3.4 People with a disability

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

BP3.5 Materials and Products

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

VERIFICATION 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; and

(b) toilet and urinal flushing; and

(c) clothes washing; and

(d) vehicle washing; and

(e) path/wall washing; and

(f) industrial purposes; and

(g) fire-fighting; and

(h) dust suppression; and

(i) any other use as 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:

	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
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.

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 STATEMENTS

BF4.1

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

PERFORMANCE REQUIREMENTS

BP4.1 Fire-fighting water service

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

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

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

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

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

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

BP4.2 Materials and Products

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

VERIFICATION METHODS

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 the Building Code of Australia applies must comply with the requirements of Part E1 of Volume One of the Building Code of Australia.

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

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

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

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

(f) Piping for fire sprinkler systems must comply with AS 4118.2.1.

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:

	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
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**

SANITARY PLUMBING AND DRAINAGE SYSTEMS

SECTION C CONTENTS

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*.

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 *adequate* access for maintenance of mechanical components, operational controls and for clearing *blockages*; and

(e) avoid the likelihood of damage from superimposed loads, ground movement or root penetration; and

(f) avoid the likelihood of ingress of surface water, subsurface water or stormwater into the system; and

(g) provide for the effective and efficient use of water; and

(h) provide *adequate* ventilation to avoid hydraulic load imbalance.

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 *adequate* for their use.

CP1.3 Materials and Products

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

VERIFICATION 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.

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:

	NCC Volume One Class 2 to 9 buildings	**NCC Volume Two Class 1 and 10 buildings**
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*.

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;

(b) avoid the likelihood of *blockage* and leakage; and

(c) avoid the likelihood of root penetration; and

(d) provide *adequate* access for maintenance and for clearing *blockages*; and

(e) provide ventilation to avoid the likelihood of foul air and gases accumulating in the sanitary *drainage* and sewerage systems; and

(f) avoid the likelihood of damage from superimposed loads or ground movement; and

(g) avoid the likelihood of ingress of water, foul air and gases from the system into buildings; and

(h) protect against internal contamination; and

(i) avoid the likelihood of ingress of surface water, sub-surface water and stormwater into the sewerage system; and

(j) avoid the likelihood of uncontrolled discharge; and

(k) avoid the likelihood of damage to existing buildings or site works; and

(l) avoid the likelihood of damage to the sewerage system or other *approved disposal system*.

CP2.2 No point of connection

Vic CP2.2

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

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)

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:

	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
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**

STORMWATER DRAINAGE SYSTEMS

SECTION D CONTENTS

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.

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 *adequate* capacity.

DP1.3 Watertightness

All internal roof *drainage* components must be *watertight.*

DP1.4 Roof drainage installation

Roof *drainage* installations must be designed, constructed and installed in such a manner as to—

(a) convey stormwater to a *point of connection*; and

(b) avoid the likelihood of *loss* of *amenity* due to *blockages* and leakage; and

(c) avoid the likelihood of foul air and gases accumulating in the roof *drainage* system; and

(d) avoid the likelihood of *loss* to buildings and property; and

(e) avoid the likelihood of uncontrolled discharges; and

(f) provide *adequate* access for maintenance and clearing of *blockages*.

DP1.5 Materials and Products

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

VERIFICATION METHODS

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:

	NCC Volume One Class 2 to 9 buildings	**NCC Volume Two Class 1 and 10 buildings**
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*.

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 *adequate* access for maintenance and clearing of *blockages*; and

(e) avoid the likelihood of damage to the *Network Utility Operator's drainage* system; and

(f) avoid the likelihood of damage from superimposed loads or ground movements; and

(g) avoid the likelihood of ingress of sewage and/or liquid trade waste; and

(h) avoid the likelihood of ingress of surface water and stormwater into a sanitary *drainage* system; and

(i) avoid the likelihood of foul air and gases accumulating in the stormwater system; and

(j) avoid the likelihood of *loss* to buildings or property; and

(k) avoid the likelihood of uncontrolled discharge.

DP2.4 Materials and Products

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

VERIFICATION METHODS

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:

	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
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

HEATING, VENTILATION AND AIR-CONDITIONING

E1 Heating, Ventilation and Air-Conditioning Systems

SECTION E CONTENTS

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.

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.*

EF1.2

A building's heating, cooling and/or ventilation system installation and maintenance must support energy efficient outcomes and minimise any adverse impact on building occupants or

occupants of adjoining places, the *Network Utility Operator's* infrastructure, property and the environment.

PERFORMANCE REQUIREMENTS

EP1.1

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

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

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

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

(d) provide *adequate* access for maintenance.

EP1.2 Materials and Products

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

VERIFICATION METHODS

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 the Building Code of Australia applies must comply with the requirements of the relevant Parts of the Building Code of Australia.

(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:

	NCC Volume One Class 2 to 9 buildings	**NCC Volume Two Class 1 and 10 buildings**
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

ON-SITE WASTEWATER SYSTEMS

SECTION F CONTENTS

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*.

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

(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 *adequate* and safe access for maintenance and clearing *blockages*.

FP1.4

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

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

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

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

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

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

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

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

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

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

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

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

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

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

FP1.5 Land application systems

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

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

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

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

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

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

(f) protect against internal contamination; and

(g) provide *adequate* access for maintenance; and

(h) incorporate *adequate* provisions for effective cleaning; and

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

(j) avoid the likelihood of *blockage* and leakage; and

(k) avoid the likelihood of damage from superimposed loads or ground movement; and

(l) provide ventilation to avoid the likelihood of foul air and gases from accumulating in the system; and

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

FP1.6 Materials and Products

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

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

VERIFICATION METHODS

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.

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.

PERFORMANCE REQUIREMENTS

FP2.1

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

(a) protect public health by ensuring that—

  (i) all discharges comply with the relevant requirements of the authority having jurisdiction; and

  (ii) risks associated with the discharge of treated liquid trade waste to the environment are minimised; and

(b) protect the environment by ensuring that—

  (i) environmental quality objectives set by the 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

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

(a) transfers wastes safely and hygienically; and

(b) avoids the likelihood of *blockage* and leakage; and

(c) avoids the likelihood of foul air and gases entering buildings; and

(d) provides *adequate* and safe access for clearing *blockages*.

FP2.4

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

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

(b) with *adequate* size, strength and rigidity for the nature, flow rates, volume of wastes, by-products and residues which must be processed; and

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

(d) with *adequate* structural strength for where pedestrian or vehicular traffic is likely to be encountered; and

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

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

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

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

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

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

(k) to avoid the likelihood of surface water and stormwater entering the sewerage system except in cases where a contaminated stormwater discharge of limited volume is accepted by the *Network Utility Operator* as a trade waste; and

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

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

(n) so that the installation throughout its design life will continue to satisfy the requirements of items **(a)** to **(m)**.

FP2.5

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

VERIFICATION METHODS

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

MATERIALS AND PRODUCTS CERTIFICATION AND AUTHORISATION

G1 Certification and Authorisation

SECTION G CONTENTS

PART G1 CERTIFICATION AND AUTHORISATION

G1.1 Scope

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

G1.2 Application

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

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

The process of risk identification, risk analysis, risk assessment and risk treatment of *plumbing* and *drainage* materials and *products* is set out in the ABCB Manual for the Assessment of Risks of Plumbing Products.

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

G1.3 Objective

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

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

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

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

  (ii) environmental degradation;

  (iii) contamination of the water resource;

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

  (v) contamination of water supplies;

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

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

  (viii) the inability of a material or *product* to function as intended.

G1.4 Authorisation

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

G1.5 Certification and Risk Assessment

G1.5.1 General

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

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

G1.5.2 Materials and products certification

Materials and *products* listed in **Table A2.1** must be certified at the Minimum Certification Level nominated in that Table.

There are two (2) levels of certification:

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

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

Any new or innovative material or *product* that is required to comply with AS/NZS 4020 or is assessed with a consequence score of more than 4 under the ABCB Manual for the Assessment of Risks of Plumbing Products requires Level 1 Certification.

Any new or innovative material or *product* that is assessed with a consequence score in the range of 3 – 4, under the ABCB Manual for the Assessment of Risks of Plumbing Products, requires Level 2 Certification.

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

G1.5.3 The process

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

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

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

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

If the material or *product* is not listed in **Table A2.1** or there is no appropriate *specification* the *WMCAB* is to carry out an assessment of the risks associated with its use in accordance with the ABCB Manual for the Assessment of Risks of Plumbing Products and the outcomes of the assessment must be reported to the *administering body*.

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

If the outcome of an assessment carried out in accordance with the ABCB Manual for the Assessment of Risks of Plumbing Products is a consequence score of less than 3, the *WMCAB* is to submit to the *administering body* all pertinent assessment details, including a description of the material or *product* and its consequence

score. If no objection to the assessment outcome is received from the *administering body* within 28 days, the material or *product* may be incorporated in a *plumbing* or *drainage* installation without certification.

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

If the outcome of an assessment in accordance with the ABCB Manual for the Assessment of Risks of Plumbing Products is a consequence score of 3 – 4 and there is no *specification* in place the *WMCAB* is to submit for approval:

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

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

The documentation required in **(a)** and **(b)** above is to be in a generic *product specification* format, called a WaterMark Technical Specification (WMTS).

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

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

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

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

If the outcome of assessment carried out in accordance with the ABCB Manual for the Assessment of Risks of Plumbing Products is a consequence score of more than 4, certification of the material or *product* must be in accordance with **G1.5.4.3**.

G1.5.4 Certification

G1.5.4.1 Certification Mark

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

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

Figure G1.5.4.1 summarises the certification requirements in relation to the consequence score.

Figure G1.5.4.1 — Product Certification

ABCB Manual for the Assessment of Risks of Plumbing Products Consequence Score	Certification	Minimum Certification Level
Less than 3	None Required	None Required
3 – 4		Level 2 An *approved user* must meet the requirements of ISO Guide 67 System 1b, provide *warranty* and comply with licence conditions.
More than 4	 Product AS or WMTS Licence No.	Level 1 An *approved user* must meet the requirements of ISO Guide 67 System 5, provide *warranty* and comply with licence conditions.

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

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

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

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

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

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

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

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

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

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

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

The material or *product* is granted certification to use the *WaterMark* if all of the above requirements are met.

G1.5.4.4 Certification licence

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

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

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

(b) provide corresponding advice to the *administering body*.

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

G1.5.5 Product Marking

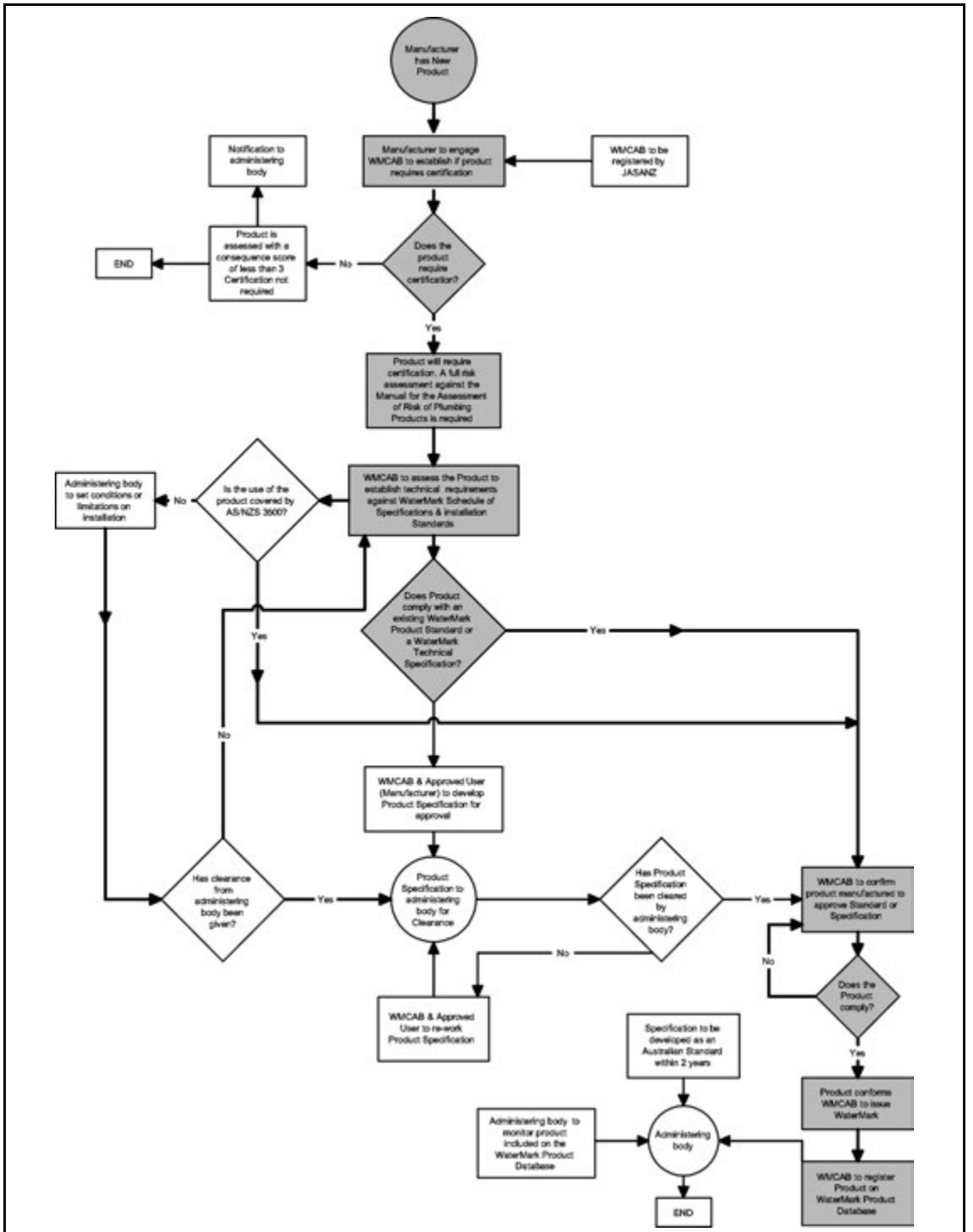
The *WMCAB* must ensure that a material or *product* that has been accorded a *certification mark* is appropriately marked.

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

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

WaterMark may only be shown on or be associated with a material or *product* that has been duly certified and the supplier appropriately licensed.

Figure G1.5.3 — The WaterMark Certification Process



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

APPENDIX

STATE AND TERRITORY APPENDICES - VARIATIONS AND ADDITIONS

APPENDIX CONTENTS

APPENDIX

COMMONWEALTH OF AUSTRALIA

APPENDIX CONTENTS

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)

APPENDIX

AUSTRALIAN CAPITAL TERRITORY

APPENDIX CONTENTS

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
AS 4013	Domestic solid fuel burning appliances – method for determination of flue gas emission	**ACT A1.1**

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) Insert clause 4.7 as follows:

4.7 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 12.2.3 as follows:

12.2.3

(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 13 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**

Environment and Planning Directorate

Relevant Legislation

Water and Sewerage Act 2000

2. Building

2.1 **Administering Agency**

Environment and Planning 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**

Environment and Planning Directorate

Relevant Legislation

Gas Safety Act 2000

6. Electrical

6.1 **Administering Agency**

Environment and Planning Directorate

Relevant Legislation

Electricity Safety Act 1971

APPENDIX

NEW SOUTH WALES

APPENDIX CONTENTS

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 5.4.2(l) add (m) as follows:

(m) 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 —

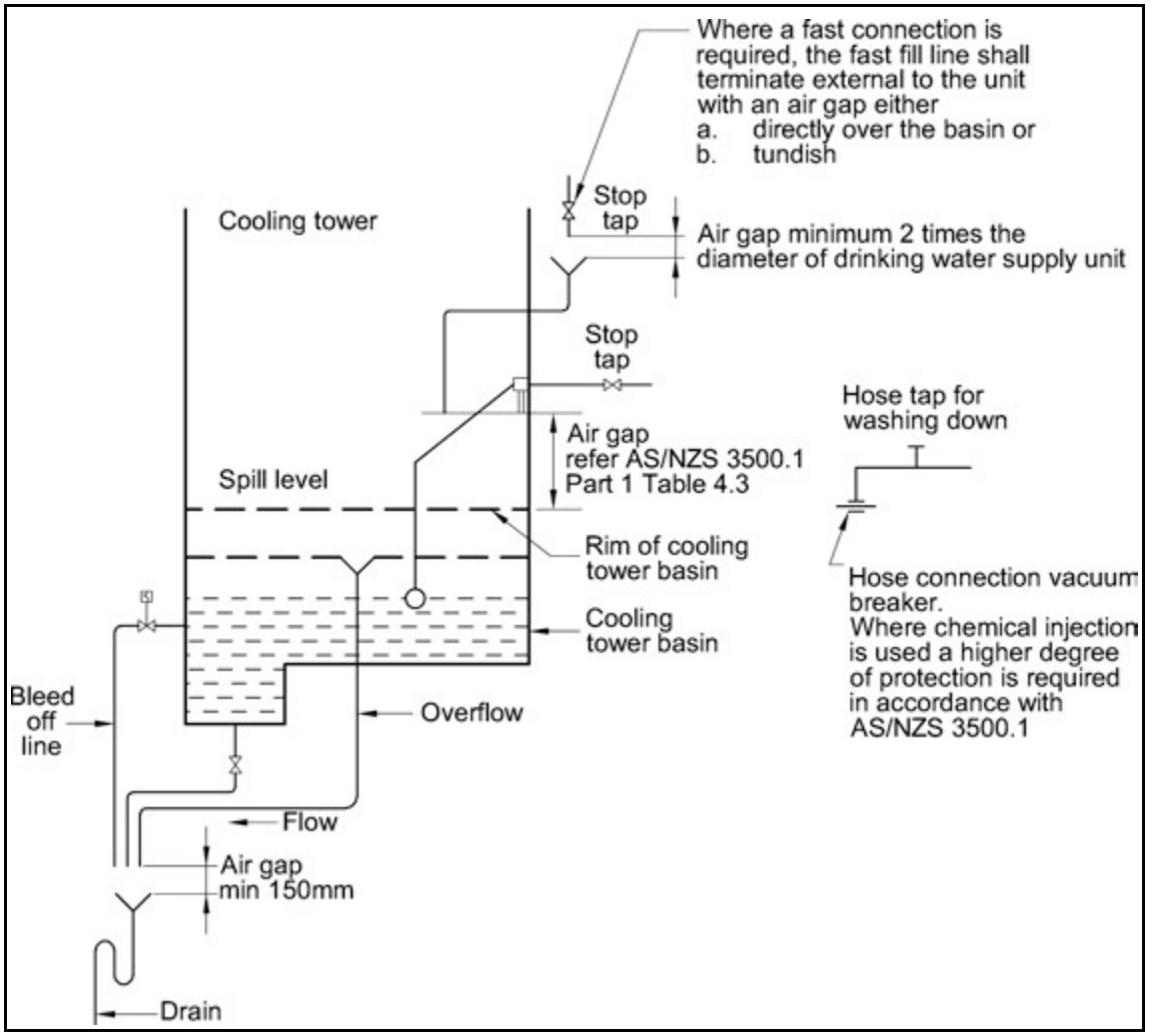
(a) cooling tower air gap must be measured from the rim of the cooling tower basin; and

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

(d) Single residential dwellings require the following:

(i) Buried or partly buried rainwater tanks a non-testable dual check valve with atmospheric port is required for containment protection; and

(ii) a non-testable device for zone protection. The *Network Utility Operator* reserves the right to require greater backflow for containment.

(e) Where rainwater tanks are installed for other than a single residential dwelling approval must be obtained from the water supply *Network Utility Operator* for containment.

(ii) The requirements of this Part.

PART B2 HEATED WATER SERVICES

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

PERFORMANCE REQUIREMENTS

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:

VERIFICATION METHODS

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 9.5.2.3(d)(i) only;

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

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

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

(ii) The requirements of this Part.

PART B4 FIRE-FIGHTING WATER SERVICES

Part B4 does not apply in New South Wales; Fire Fighting Water Services are regulated under the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulations 2000.

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 paragraph 3:

Boundary trap or inspection shafts cannot terminate within buildings as defined in the BCA area referred to as habitable. See BCA "Interpretation" and delete 'excludes' from (b).

(C) After clause 4.5.2(b) insert (c) as follows:

(c) Soil and waste stacks shall not discharge through a reflux valve except where a reflux valve is installed at the connection to the sewer required with surcharging sewers.

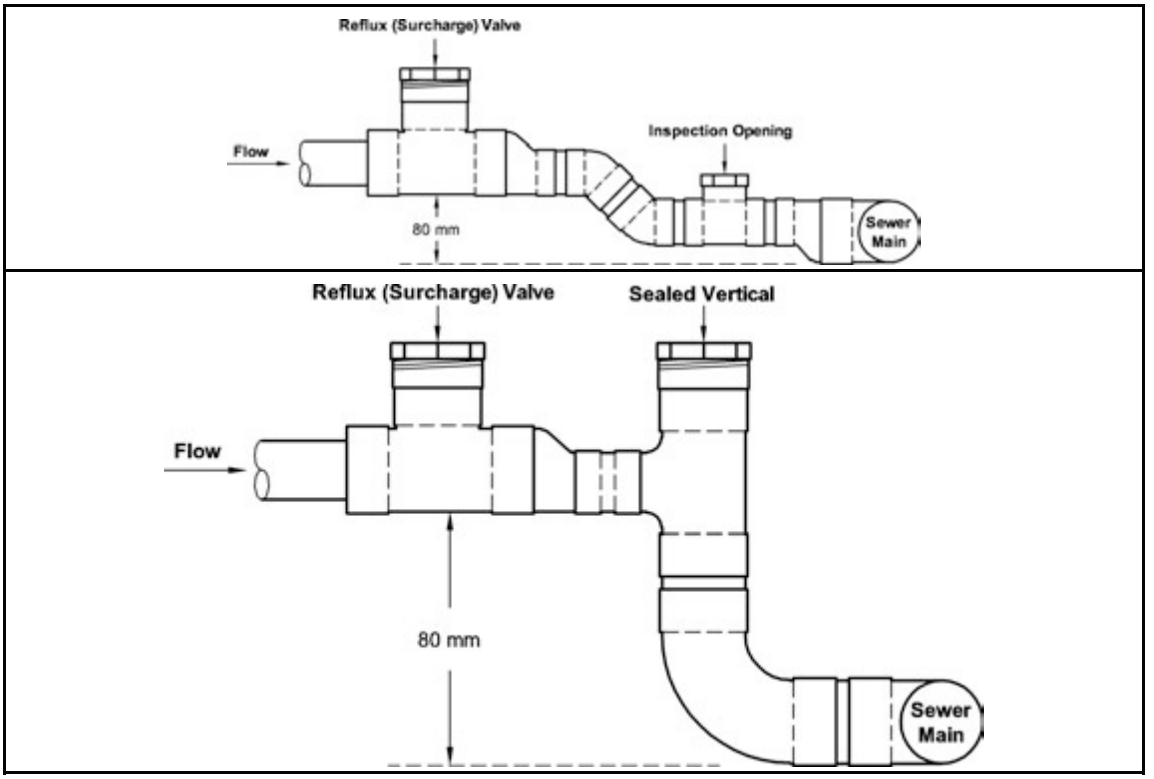
(D) Substitute clause 4.5.3 as follows:

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 10.7(g) insert (h) as follows:

(h) Sewage management facilities shall be accredited by NSW Health and comply with local government requirements. Before a connection is made to pump raw sewerage or effluent from a septic tank or holding well to the *Network Utility 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

Part D1 does not apply in New South Wales; roof *drainage* systems are regulated under the—

(a) Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000; and

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

PART D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

Part D2 does not apply in New South Wales; surface and subsurface *drainage* systems are regulated under the—

(a) Environmental Planning and Assessment Act 1979 and Environmental Planning and Assessment Regulation 2000; and

(b) 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; heating, ventilation and air-conditioning is regulated under the Environmental Planning and Assessment Act 1979 and the Environmental Planning and Assessment Regulation 2000.

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

Part F2 does not apply in New South Wales; on-site liquid trade waste systems are regulated under a number of Acts.

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

Hunter Water Act 1991

Sydney Water Act 1994

Water Industry Competition Act (WICA) 2006

The Plumbing and Drainage Act 2011 applies to the *plumbing* and *drainage* system as defined by that 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 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 Trade and Investment, Regional Infrastructure and Services (Resources and Energy Division)

Relevant Legislation

Gas Supply Act 1996

5.2 **Administering Agency**

NSW Fair Trading

Relevant Legislation

Gas Supply (Consumer Safety) Regulation 2012

5.3 **Administering Agency**

Department of Trade and Investment, Regional Infrastructure and Services

Relevant Legislation

Gas Supply (Safety and Network Management) Regulation 2008

6. Electrical

6.1 **Administering Agency**

NSW Fair Trading

Relevant Legislation

Electricity (Consumer Safety) Act 2004

Electricity (Consumer Safety) Regulation 2006

APPENDIX

NORTHERN TERRITORY

APPENDIX CONTENTS

SECTION A

PART A2 ACCEPTANCE OF DESIGN AND CONSTRUCTION

Delete A2.1(g) and (h) insert NT A2.1(g) and (h) as follows:

NT A2.1 Suitability of materials and products

(g) * * * * *

(h) * * * * *

SECTION B WATER SERVICES

PART B2 HEATED WATER SERVICES

Delete BF2.3(b) and insert NT BF2.3(b) as follows:

FUNCTIONAL STATEMENTS

NT BF2.3

(b) * * * * *

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 4.6.6.7as 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.

APPENDIX

QUEENSLAND

APPENDIX CONTENTS

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) * * * * *

PART B2 HEATED WATER SERVICES

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

OBJECTIVE

Qld BO2

The *Objective* of this Part is to—

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

(e) * * * * *

Delete BF2.3 and insert Qld BF2.3 as follows:

FUNCTIONAL STATEMENTS

Qld BF2.3 * * * * *

This clause has deliberately been left blank.

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

PERFORMANCE REQUIREMENTS

Qld BP2.8 * * * * *

This clause has deliberately been left blank.

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

VERIFICATION METHODS

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_5 less than or equal to 10 g/m^3 with no sample greater than 20 g/m^3.

(b) 90% of the samples taken over the test period must have total suspended solids less than or equal to 10 g/m^3 with no sample greater than 20 g/m^3.

(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^3 and less than 2.0 g/m^3 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.

APPENDIX

SOUTH AUSTRALIA

APPENDIX CONTENTS

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 14.4, insert clause 14.4.1 as follows:

14.4.1 A reduction of the hazard ratings listed in table 14.1 may be permitted following a risk assessment of the design and installation of the rainwater tank and other environmental factors in accordance with clause 14.4.2; and

(B) After 14.4.1, insert clause 14.4.2 as follows:

14.4.2 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 with atmospheric port (non-testable) may be used in lieu of a testable device for containment and

zone protection where it has been determined by risk assessment that—

(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 with atmospheric port (non-testable) may be used in lieu of a testable device for containment and zone protection where it has been determined by risk assessment that—

(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^2. 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:

VERIFICATION METHODS

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_2 -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_2 -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_2 -e/MJ; or

(B) if the energy source is liquified petroleum gas, 65 g CO_2 -e/MJ; or

(C) if the energy source is natural gas, 61 g CO_2 -e/MJ; or

(D) if the energy source is wood or biomass, 4 g CO_2 -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) and (d) as follows:

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

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

(ii) 50°C for all other buildings.

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

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

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

(ii) the heating source is uncontrolled; or

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

(iv) a water heater complying with AS 3498 and marked with the following:

THIS APPLIANCE DELIVERS WATER NOT EXCEEDING 50º C IN ACCORDANCE WITH AS 3498 is installed; or

(v) the building serviced by the *heated water* service was constructed after 19th October 1995.

(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 5.12.2.1 as follows:

5.12.2.1 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 5.12.3(e) as follows:

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

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

(b) 50°C for all other buildings.

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

(B) After clause 3.3.2.1 insert 3.3.2.2 as follows:

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

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

(b) the heating source is uncontrolled; or

(c) such a device was in place prior to the installation of the replaced water heater; or

(d) a water heater complying with AS 3498 and marked with the following:

THIS APPLIANCE DELIVERS WATER NOT EXCEEDING 50º C IN ACCORDANCE WITH AS 3498 is installed; or

(e) the building serviced by the *heated water* service was constructed after 19th October 1995.

(C) 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.

(D) 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 where a riser is brought to finished surface level.

(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 drain 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 10.11 insert additional clause 10.12 as follows:

10.12 Identification of pumped discharge pipes and rising mains

(a) Buried 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 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 discharge pipe or rising main at not more than 3 m intervals.

(E) After clause 11.9(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 4.4 and Appendix D.

(F) After clause 11.27.2 insert additional clause 11.28 as follows:

11.28 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 where a riser is brought to finished surface level.

(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 drain 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 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 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 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

APPENDIX

TASMANIA

APPENDIX CONTENTS

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 (e) to (h) and insert Tas A2.1 (c) and (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 **Part G1**, **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 **Part G1**, **Tas Part G101** or **Tas Part G102** (as appropriate) prior to their use in a *plumbing* or *drainage* installation.

(f) A material or *product* exempted 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(a)(i) and insert Tas A2.2(a)(i) as follows:

Tas A2.2 Evidence of Suitability

(a)

(i) A current *certification mark* in compliance with the requirements of **Part G1**, **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
AS/NZS 1546		On-site domestic wastewater treatment units	
Part 1	2008	Septic tanks	**C2.2**, **F1.2**, **Tas G101 V4**, **Tas G101 V5**, **Tas G101.4**
Part 2	2008	Waterless composting toilets	**C2.2**, **F1.2**
Part 3	2008	Aerated wastewater treatment systems	**C2.2**, **F1.2**
AS/NZS 1547	2012	On-site domestic wastewater management	**C2.2**, **F1.2**
AS 2070	1999	Plastics materials for food contact use	**Tas B101.3**
AS/NZS 2179		Specifications for rainwater goods, accessories and fasteners	
Part 1	2014	Metal shape or sheet rainwater goods, and metal accessories and fasteners	**Tas B101.3**
AS/NZS 3500		Plumbing and drainage	
Part 1	2003	Water services	**B1.2**, **Tas B101.3**, **B3.2**, **B4.2**, **E1.2**

Tas Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS — continued

Document No.	Date	Title	PCA Clause
Part 3	2003	Amdt 1 Amdt 2 Stormwater drainage Amdt 1 Amdt 2 Amdt 3	**A2.1**, **Tas B101.3**, **D1.2**, **D2.2**
AS 3600	2009	Concrete structures	**Tas B101.3**
AS 3735	2001	Concrete structures retaining liquids	**Tas B101.3**
AS/NZS 4020	2005	Testing of products in contact with drinking water	**A2.1**, **Tas B101.3**, **G1.5**
AS/NZS 4130	2009	Polyethylene (PE) pipes for pressure applications	**Tas B101.3**
AS/NZS 4766	2006	Polyethylene storage tanks for water and chemicals	**Tas B101.3**
ATS 5200.026	2004	Technical Specification for plumbing and drainage products: Cold water storage tanks	**Tas B101.3**
The following references are informative only			
HB 230	2008	Rainwater tank design and installation handbook	**Tas B101.3**
enHealth	2010	Guidance on the use of rainwater tanks	**Tas B101.3**

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) as follows:

Tas B1.2 General Requirements

(d) Cold water tanks forming part of a *drinking water* supply must comply with **Tas Part B101**.

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 14 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 H 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 pol 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 x D x H x 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 **Part G1** 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:

PERFORMANCE REQUIREMENTS

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 **Part G1** 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 **Part G1** 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 G201**.

(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.

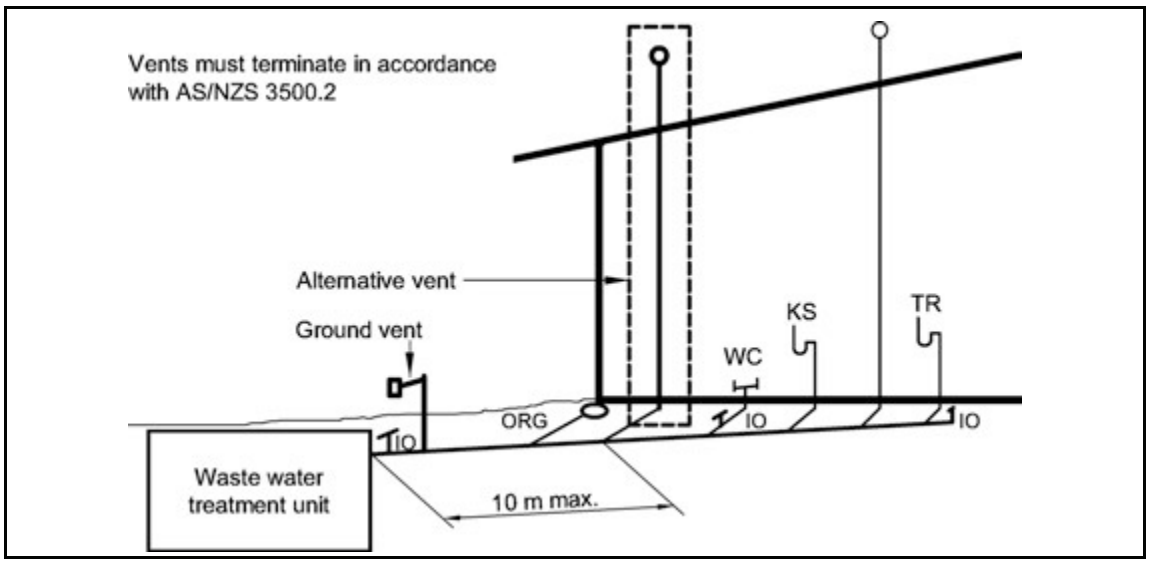
(b) An overflow relief gully must be installed and positioned so as to provide protection against surcharge of waste into a building.

(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 and **Tas F201** and **Tas F202** 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.

TAS PART F201 ROOFING OF LIQUID TRADE WASTE GENERATION AREAS

Tas F201.1 Scope

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*.

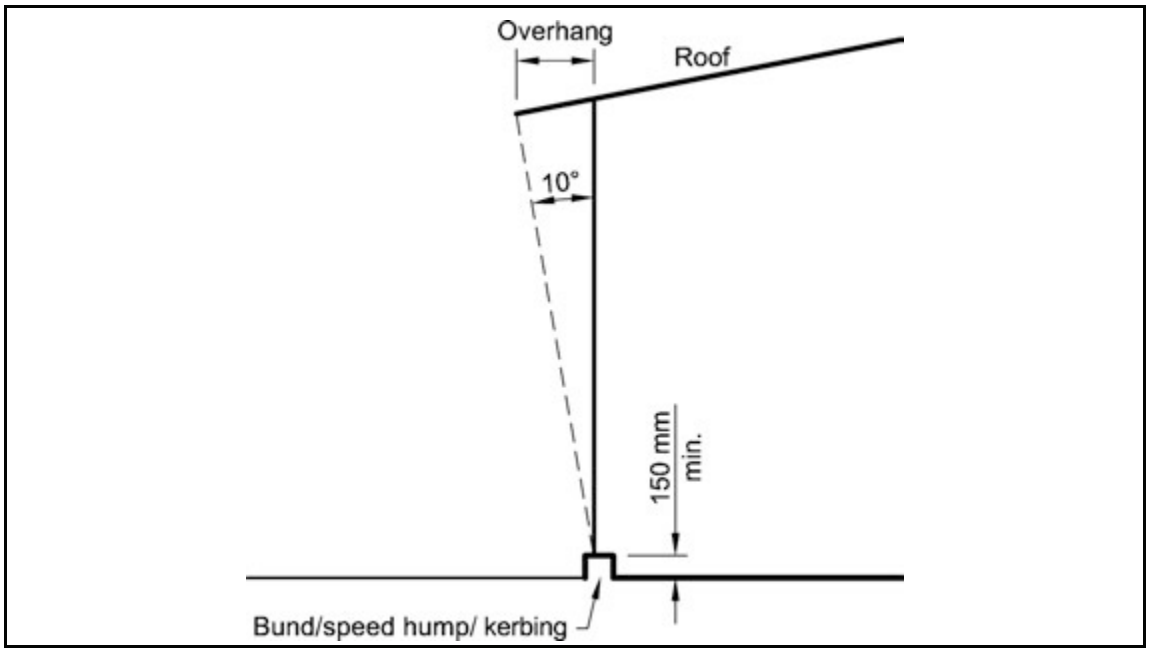
Tas F201.2 Installation requirements

(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 the Tasmanian Plumbing Code 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.

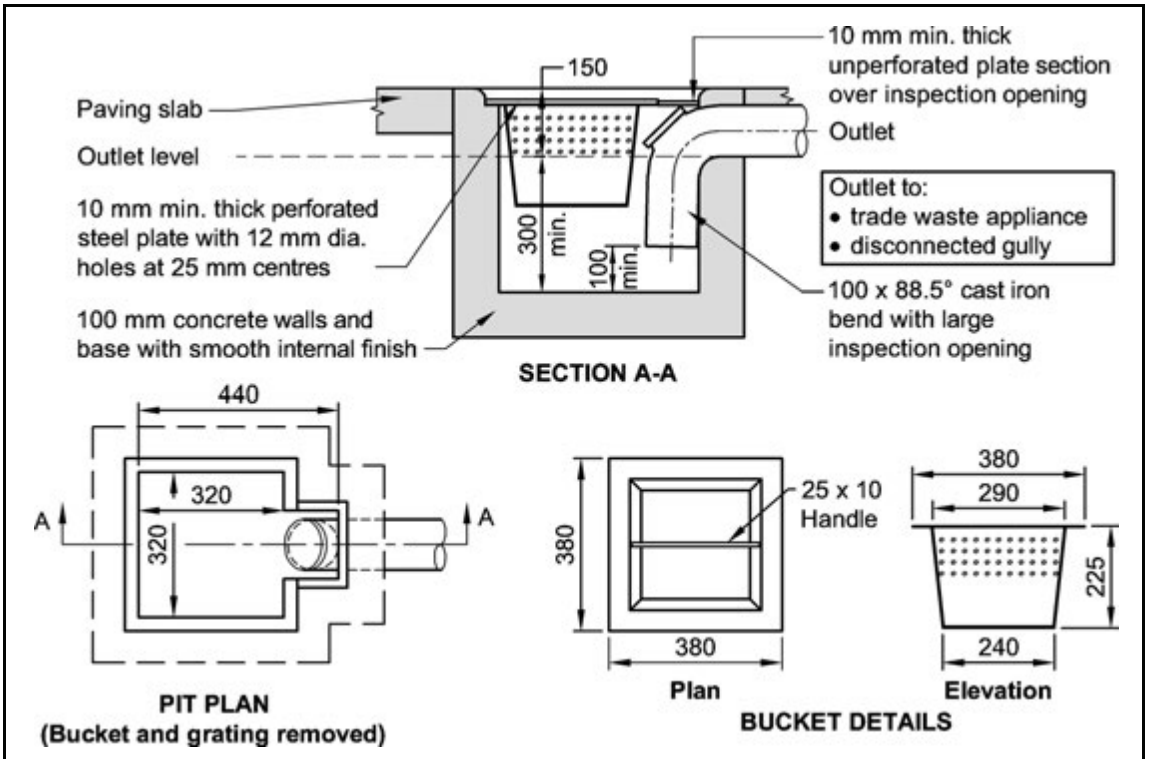
(ii) DN 80 minimum for a portable appliance with hydraulic loading greater than 5 fixture units

(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

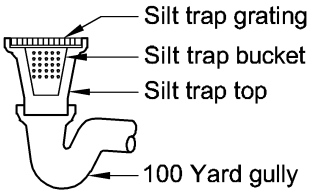


Notes:

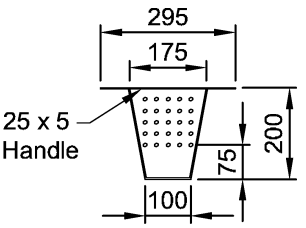
1. The silt pit is to be connected as specified by the designer and authorised by the *Permit Authority*.
2. The bucket is to be constructed of 3 mm min. thick mild steel plate with 4 rows of 10 mm diameter holes at 25 mm centres. The bucket must be hot dip galvanised after fabrication.
3. Sizes shown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

Tas Figure F202.4b Typical silt trap

Outlet to:
- trade waste appliance
- direct to drain
- direct to stack
- disconnector gully



SILT TRAP ASSEMBLY

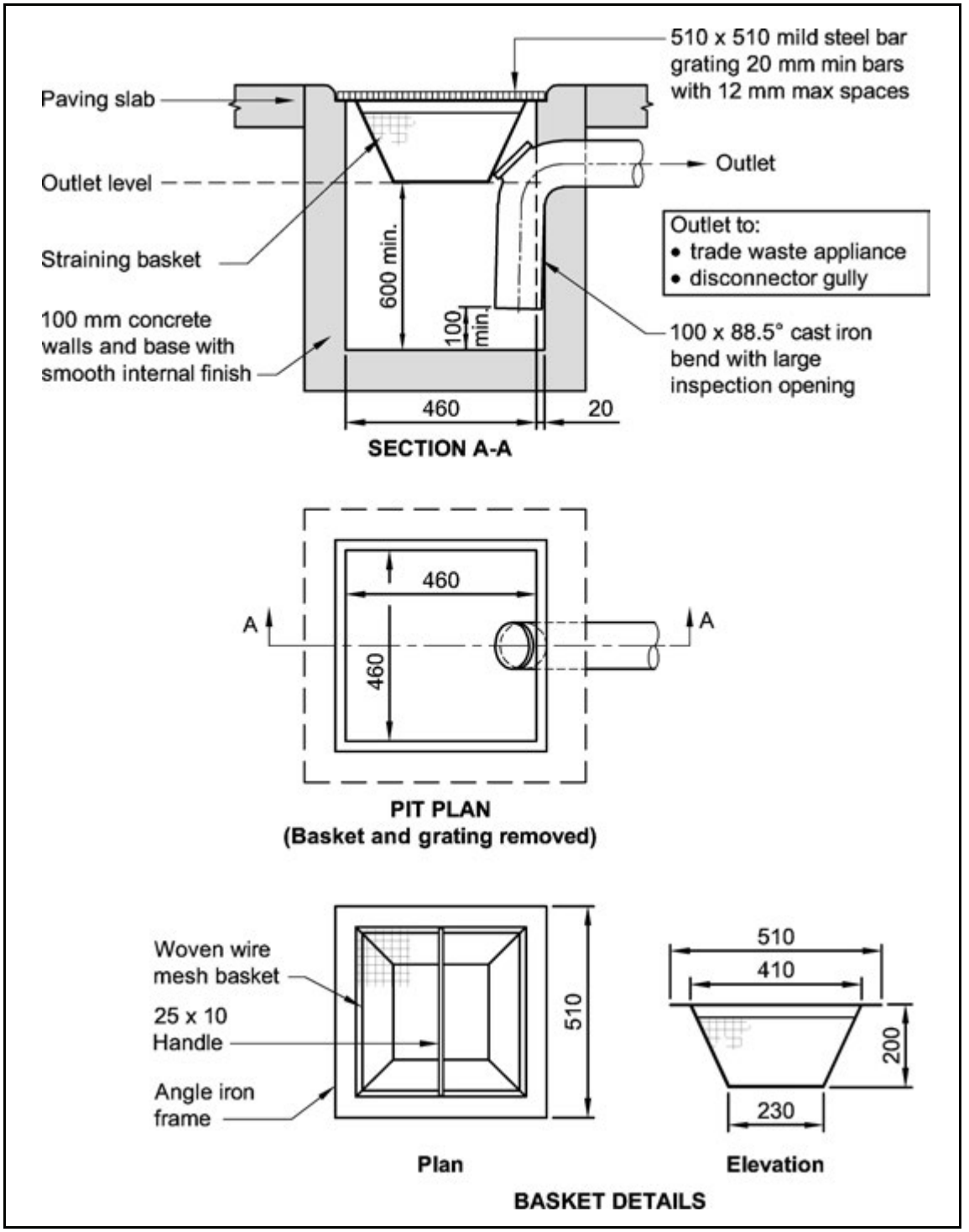


BUCKET DETAILS

Notes:

1. The silt trap is to be connected as specified by the designer and authorised by the *Permit Authority*.
2. The bucket is to be constructed of 3 mm min. thick mild steel plate with 5 rows of 10 mm diameter holes at 25 mm centres. The bucket must be hot dip galvanised after fabrication.
3. Sizes shown are minimum permissible dimensions.
4. All dimensions shown are in millimetres.

Tas Figure F202.4c Typical straining pit

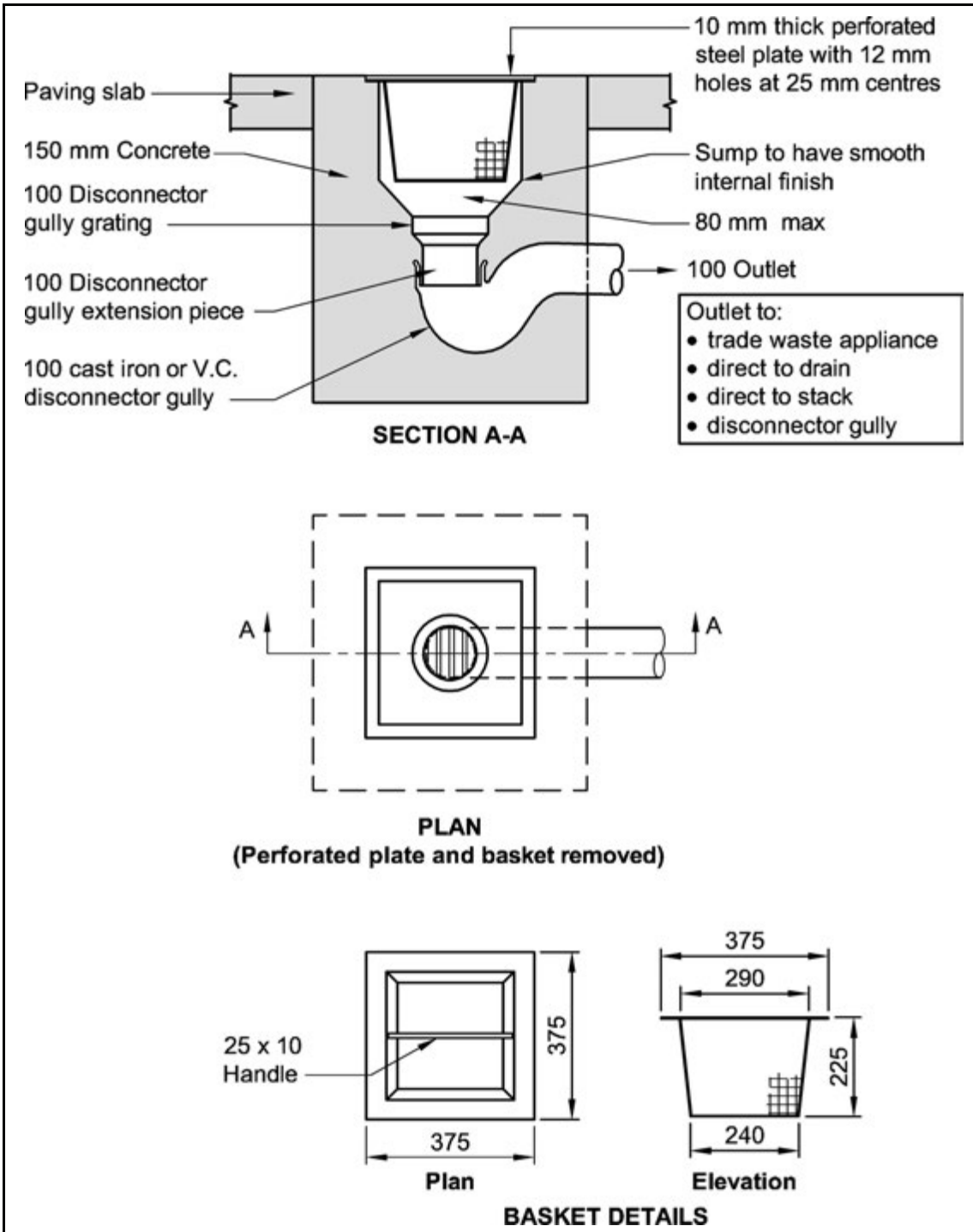


Tas Figure F202.4c Typical straining pit *— continued*

Notes:

1. The straining pit is to be connected as specified by the designer and authorised by the *Permit Authority*.
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



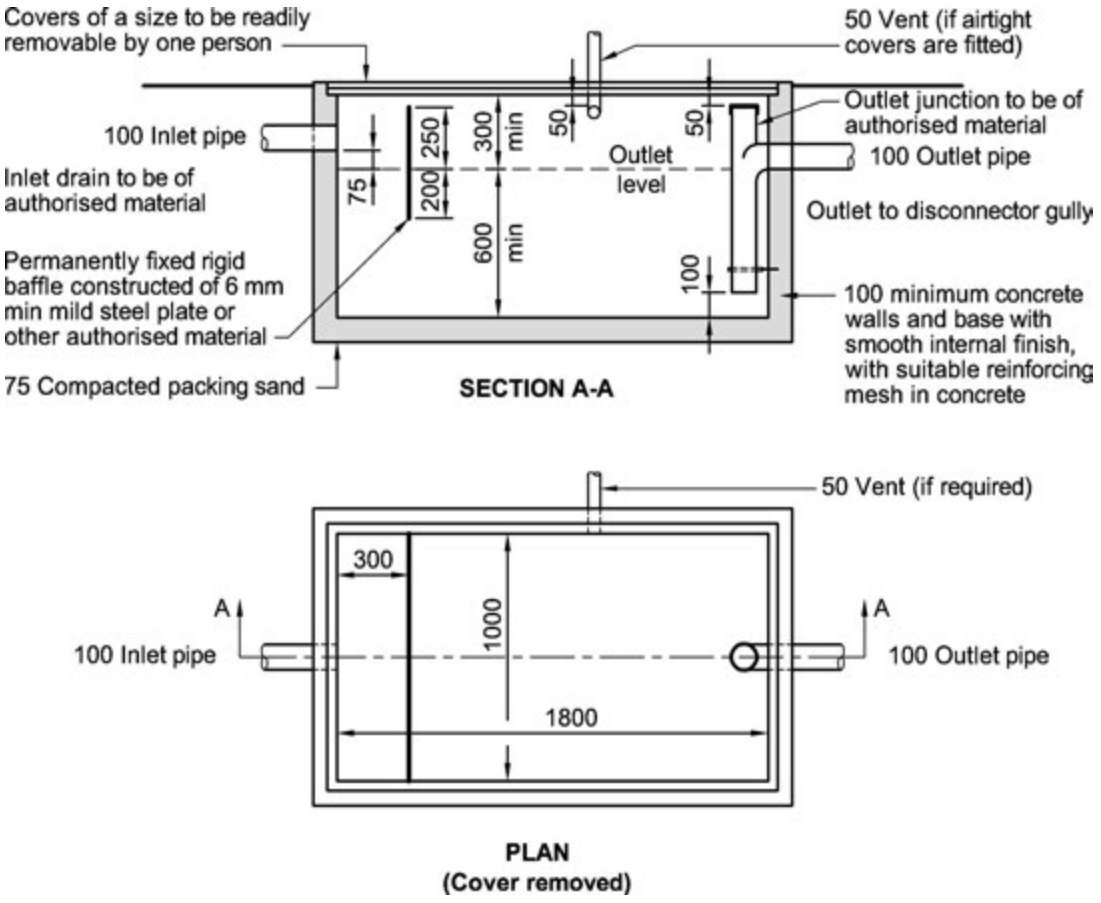
Notes:

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.	All dimensions are in millimetres.

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



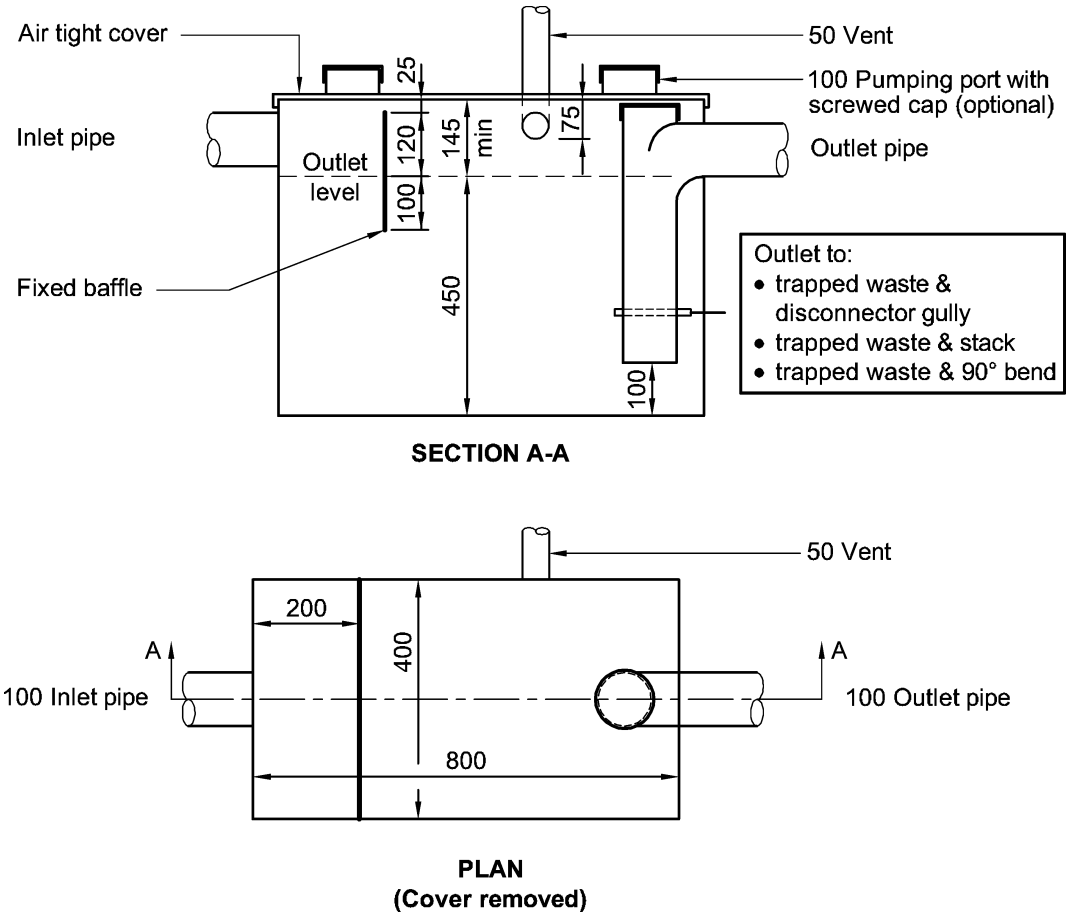
Notes:

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)



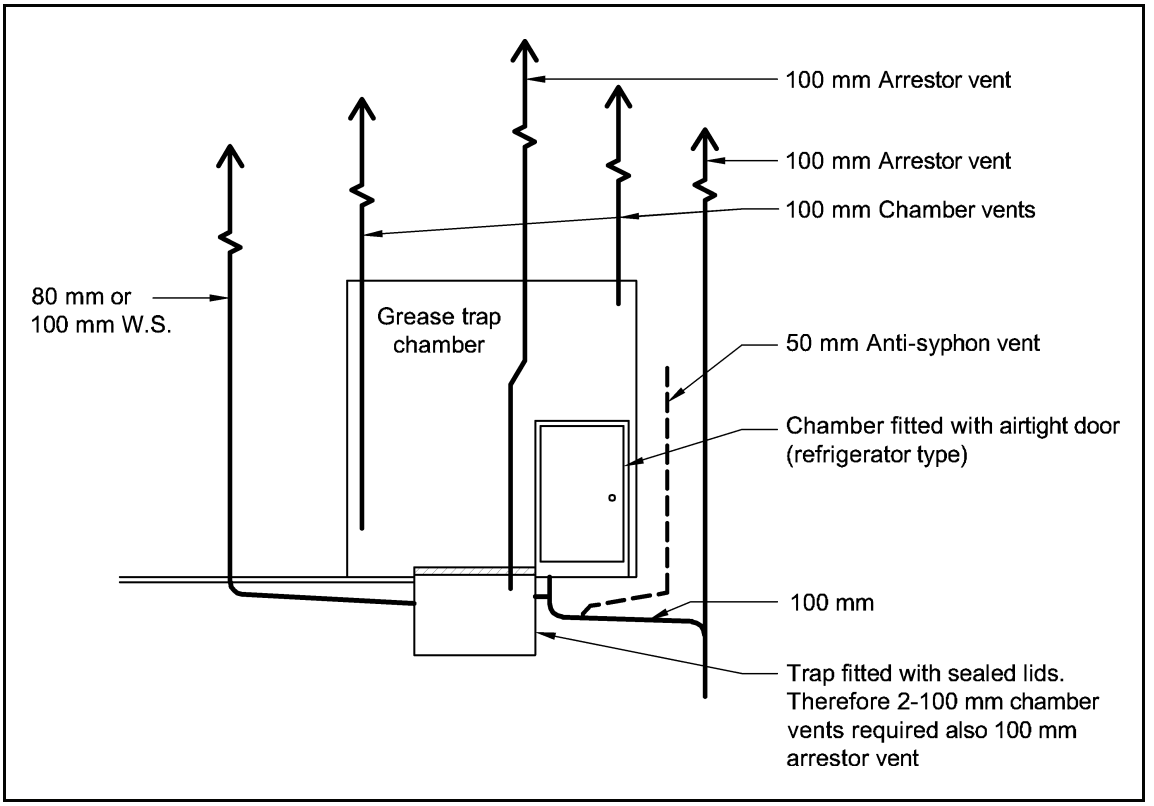
Notes:

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.

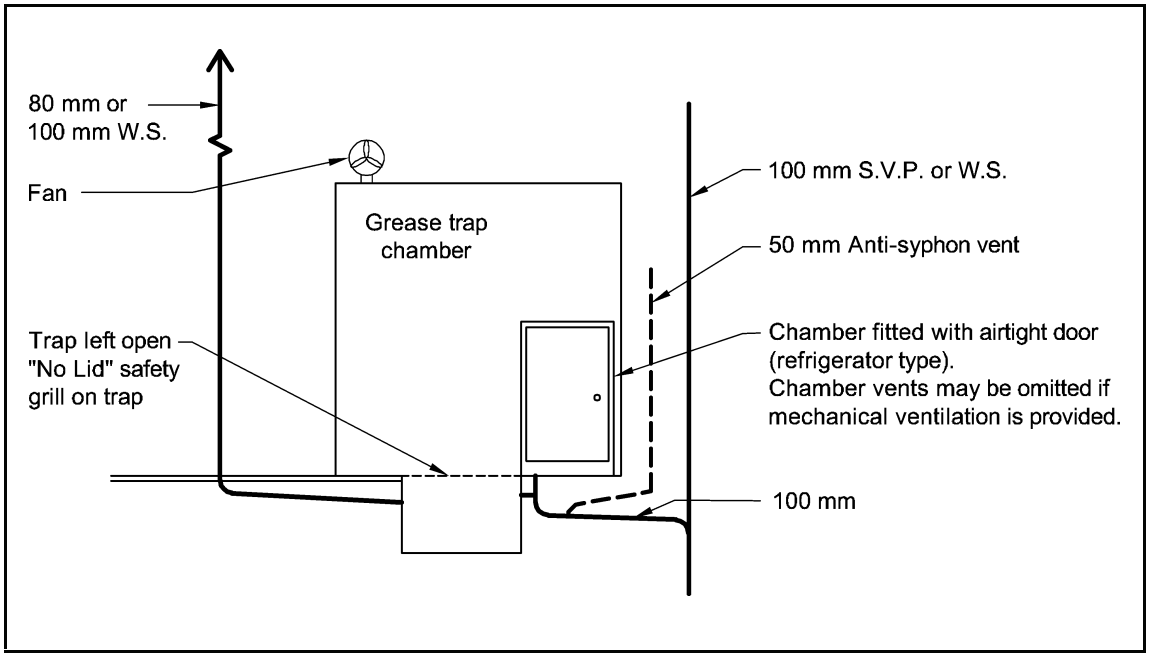
Tas Figure F202.4f Typical portable grease interceptor appliance (for above ground installation)— continued

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.

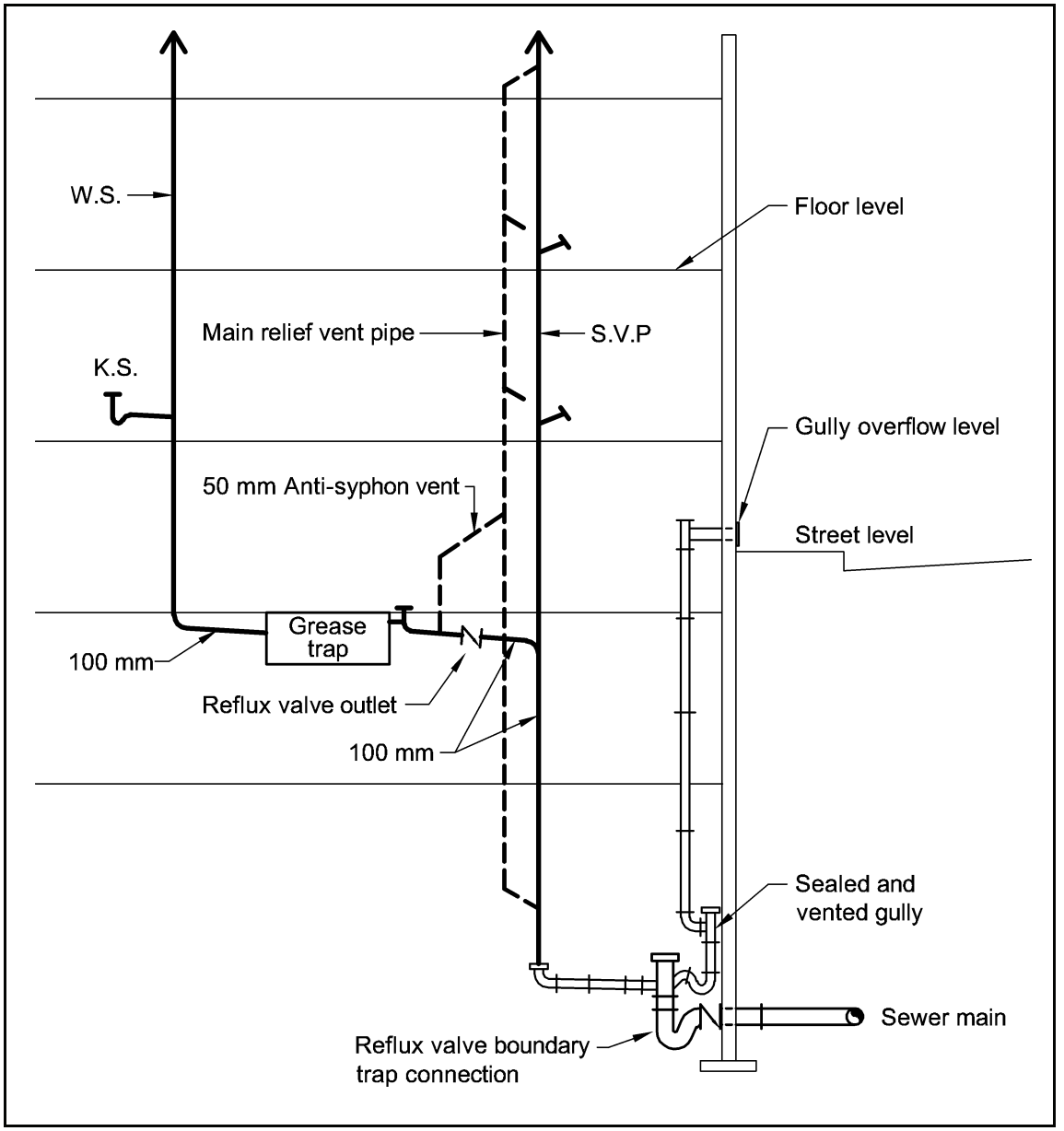
Tas Figure F202.4g Venting of grease trap chambers



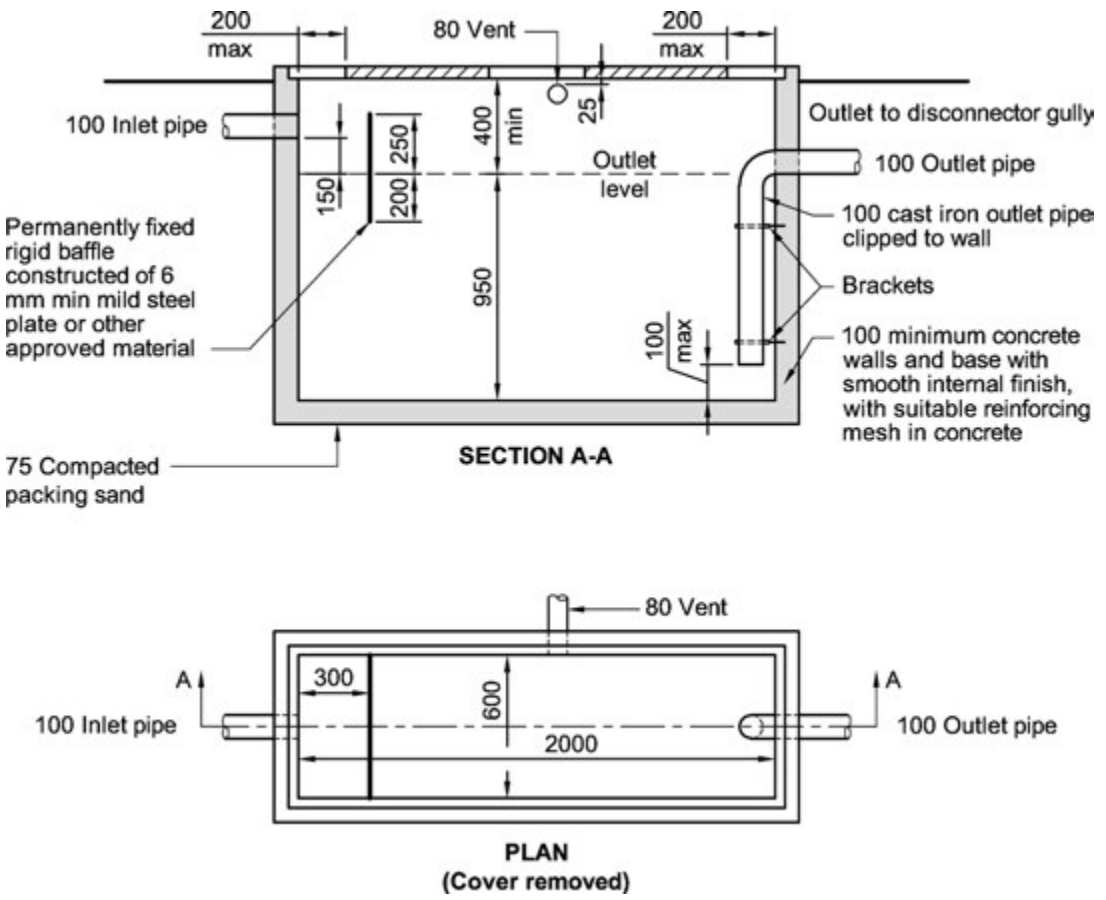
Tas Figure F202.4h Alternative (mechanical) venting of grease trap chambers



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



Tas Figure F202.4j Typical oil and petrol interceptor



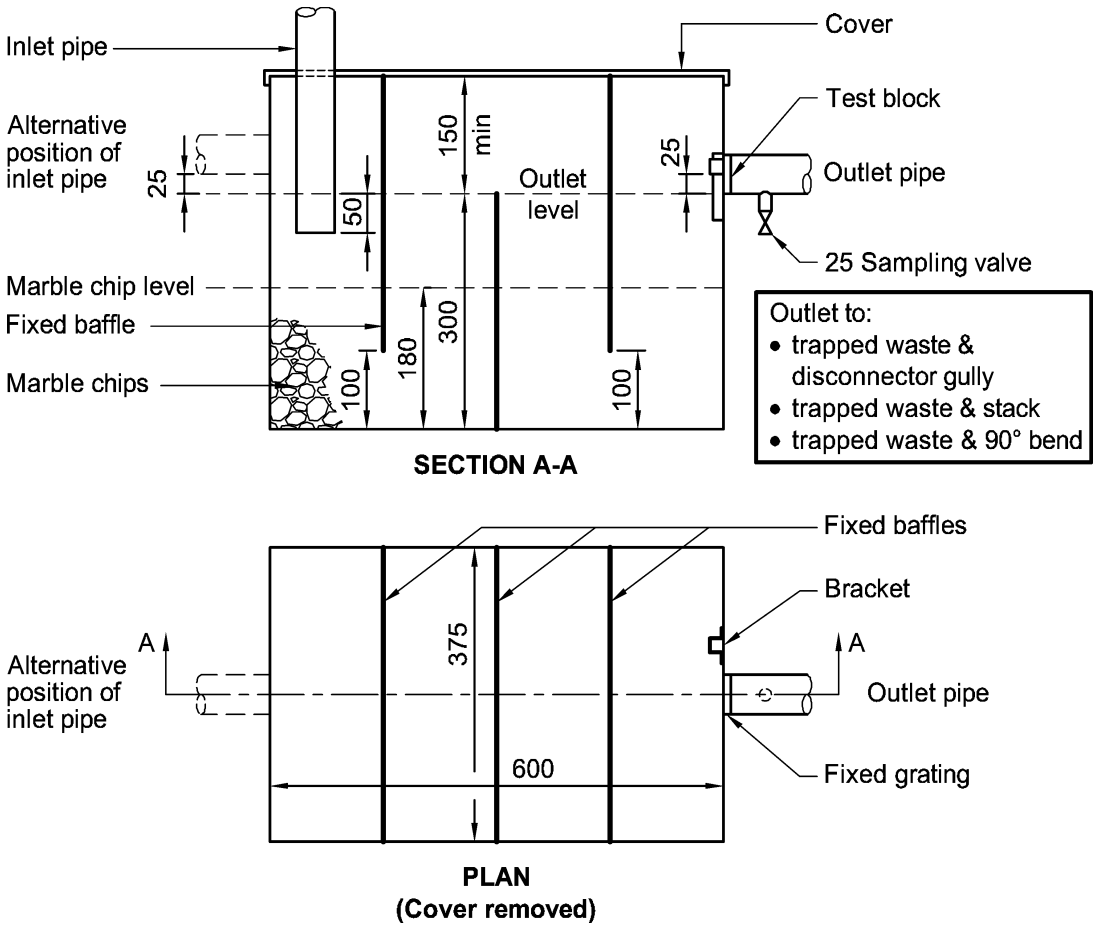
Notes:

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.	All dimensions are in millimetres.

Tas Figure F202.4k Typical acid neutralising tank



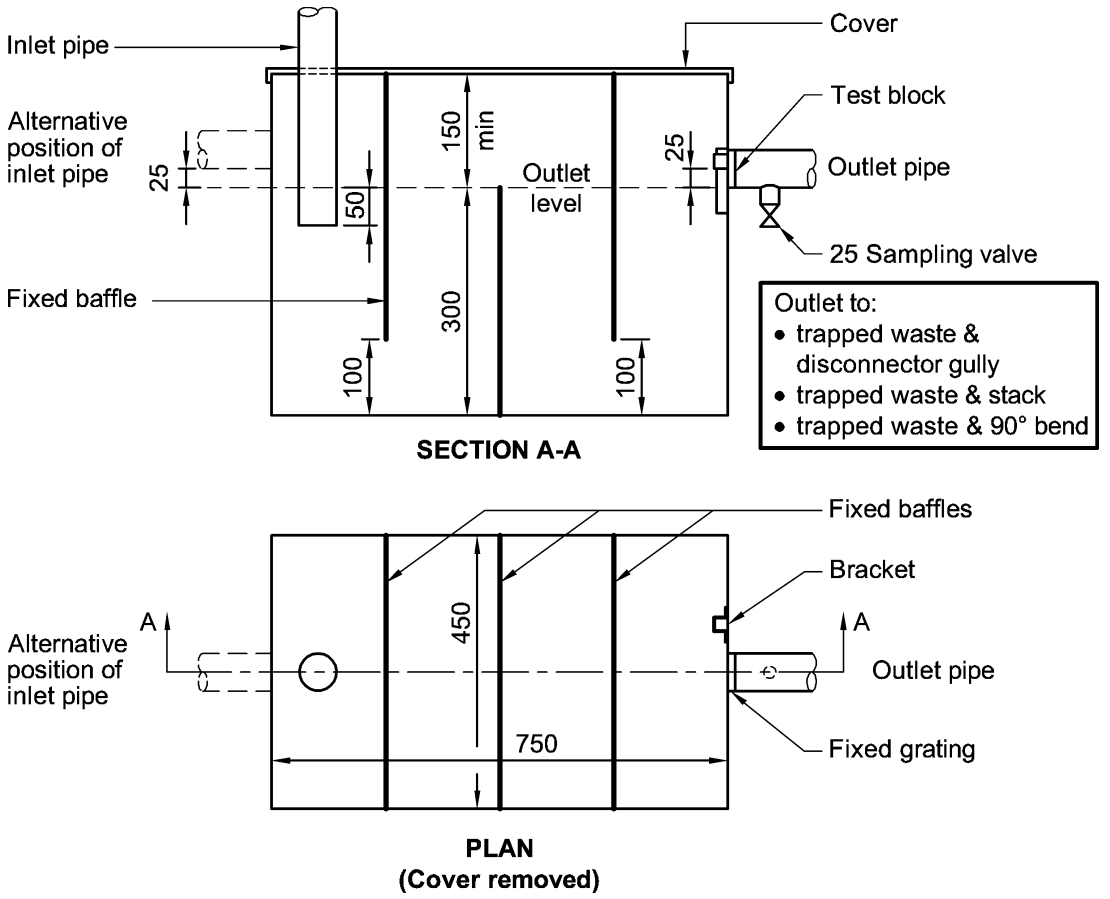
Notes:

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 F202.4l Typical mixing tank



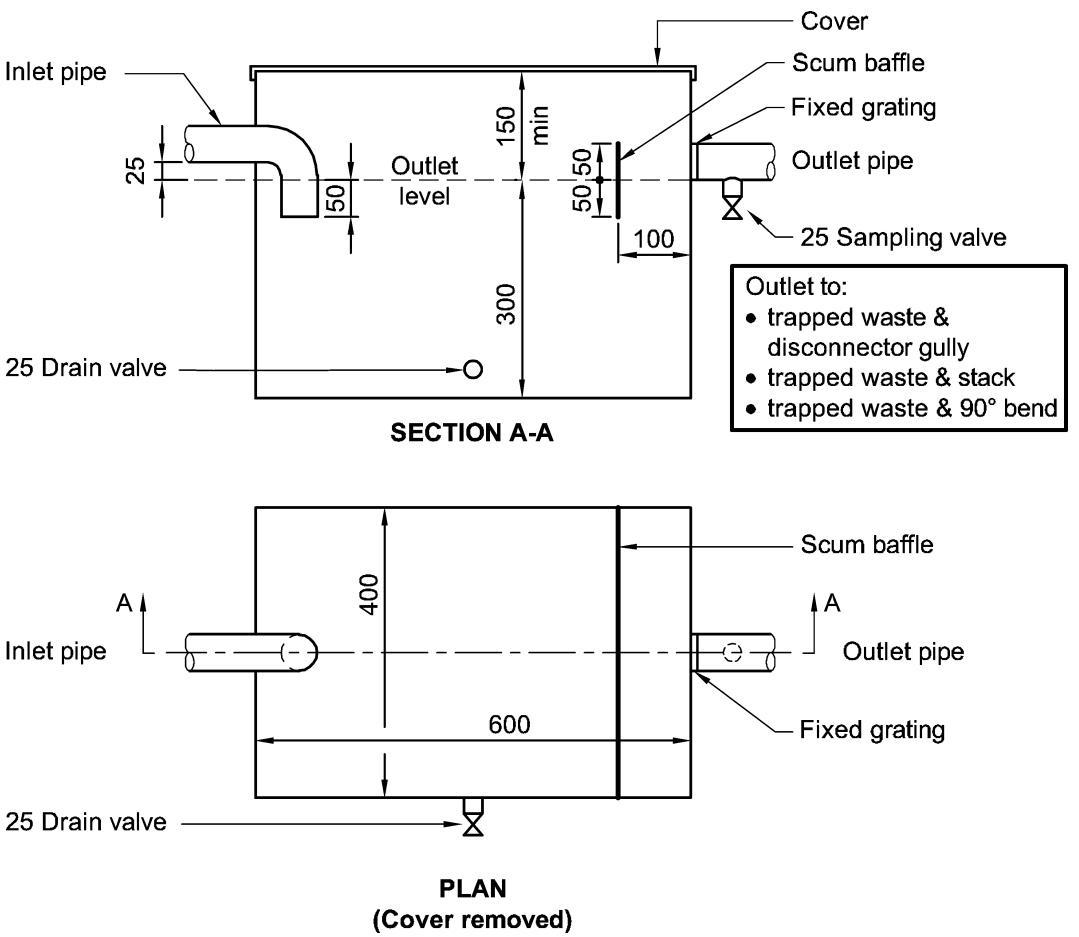
Notes:

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.

***Tas Figure F202.4I Typical mixing tank**— continued*

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.
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 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



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.

***Tas Figure F202.4m Typical settling tank**— continued*

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.

OBJECTIVES

Tas G101 O1

The *Objective* of this Part is to facilitate a system of *plumbing product* authorisation to enable the use of materials and *products* under the PCA.

FUNCTIONAL REQUIREMENT

Tas G101 F1

Plumbing and *drainage* materials and *products* must, before installation in a *plumbing* or *drainage* installation, be authorised under the PCA.

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*, set out under **Part G1**.

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, which is listed in **Table A2.1**, must be certified and authorised under **Part G1**.

(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 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 the Tasmanian Plumbing Code 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 **Table A2.1**. This section may override **Part G1** 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.

OBJECTIVES

Tas G102 O1

The *Objective* of this Part is to facilitate the use, maintenance and monitoring of *on-site wastewater management systems*.

FUNCTIONAL REQUIREMENT

Tas G102 F1

An *on-site wastewater management system* must be issued with an *Accreditation* under this Part unless exempt.

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.

APPENDIX

VICTORIA

APPENDIX CONTENTS

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 BF2.3 and insert Vic BF2.3 as follows:

FUNCTIONAL STATEMENTS

Vic BF2.3

This *Functional Statement* is deleted.

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

(ii) 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

After B3.2(b) insert Vic B3.2(b)(i) and (ii) as follows:

Vic B3.2 General Requirements

(b)

(i) From AS/NZS 3500.1, substitute the text of clauses 9.5.2.3(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.

(ii) 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.

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 11.9(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 4.4 and Appendix D.

(B) After clause 13.1, insert 13.1(A) as follows:

13.1(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 13.3; and

(C) Substitute clause 13.3.3 as follows:

13.3.3 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 13.3.2 over the minimum test duration specified in Table 13.1.

(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 13.1, insert 13.1(A) as follows:

13.1(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 13.2; or(ii)

an air test in accordance with clause 13.3; or(iii)

a vacuum test in accordance with clause 13.4; or

(b) in cases other than in **(a)**, testing may be carried out by way of—

(i)

an air test in accordance with clause 13.3; or(ii)

a vacuum test in accordance with clause 13.4.

(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 11.21 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

APPENDIX

WESTERN AUSTRALIA

APPENDIX CONTENTS

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

HISTORY OF PCA ADOPTION

CONTENTS

HISTORY OF PCA 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**.

Table 3.0 History of adoption of PCA 2013

Administration	Adoption Date
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

Administration	Adoption Date
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

Administration	Adoption Date
Australian Government	1 May 2015
Australian Capital Territory	1 May 2015
New South Wales	1 May 2015
Northern Territory	1 May 2015

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	To be advised

LIST OF AMENDMENTS

CONTENTS

LIST OF AMENDMENTS - NCC 2015 - 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 2015 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.

Reference	Changes and Commentary
Section A	
A0.2(a)	Re-worded to clarify the scope of NCC Volume Three.
Table A3.1	The following references have been amended or removed:
AS 1668.2	Reference to Amendment 1 of AS 1668.2 has been included.
A1.7(c)	Relocation of part provision from A4.3, to align Volume Three with similar changes to NCC Volume One and to clarify the application of the NCC to multiple classification buildings.
A1.7(d)	Relocation of part provision from A4.3, to align Volume Three with similar changes to NCC Volume One and to clarify the application of the NCC to multiple classification buildings.
A1.8(b)	New provision inserted to outline the use of new Explanatory Information to identify cross-volume matters contained within NCC Volumes One and Two. Numbering has also been applied to the surrounding paragraphs, as A1.8(a), (c) and (d).
A4.3(c)	Clarification of application to multiple classification buildings, to align Volume Three with similar changes to NCC Volume One.
Section B	
Part B1	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to flag Parts of NCC Volume One and Two which may be relevant to work covered by Part B1 of Volume Three.
B1.2(a)	Re-structured to define the application of AS/NZS 3500.5.
B1.2(c)	New sub-clause inserted to reflect a similar limitation in the scope of AS/NZS 3500.5.
B1.3	New Explanatory Information inserted to identify Parts of NCC Volume One which may be relevant to work covered by B1.3 of Volume Three.
B1.6	New provision inserted to specify the maximum flow rate of water for water efficiency purposes. The setting of water efficiency requirements was identified as a matter of public policy for inclusion in Volume Three during the review of AS/NZS 3500.1.
Part B2	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part B2 of Volume Three.

Reference	Changes and Commentary
B2.2(a)	Re-structured to define the application of AS/NZS 3500.5.
B2.3	New Explanatory Information inserted to identify Parts of NCC Volume One which may be relevant to work covered by B2.3 of Volume Three.
B2.5	New provision inserted to standardise the positioning of heated water and cold water taps, so as to enable users to easily identify the heated water outlet. This safety requirements was identified as a matter of public policy for inclusion in Volume Three during the review of AS/NZS 3500.4.
B2.6	New provision inserted to specify the maximum flow rate of water for water efficiency purposes. The setting of water efficiency requirements was identified as a matter of public policy for inclusion in NCC Volume Three during the review of AS/NZS 3500.1.
Part B3	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part B3 of Volume Three.
B3.2(b)	Re-structured to define the application of AS/NZS 3500.5.
Part B4	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part B3 of Volume Three.
BO4(b)	Objective amended to provide consistency with the Performance Requirements for Part B4.
Section C	
Part C1	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part C1 of Volume Three.
C1.2(a)	Re-structured to define the application of AS/NZS 3500.5.
C1.3	New Explanatory Information inserted to identify Parts of NCC Volume One which may be relevant to work covered by C1.3 of Volume Three.
Part C2	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part C2 of Volume Three.
C2.2(a)	Re-structured to define the application of AS/NZS 3500.5.
C2.2(b)	New sub-clause inserted to reflect a similar limitation in the scope of AS/NZS 3500.5. The content of C2.2(b) from NCC 2014 has been moved to C2.2(c) of Volume Three.
Section D	
Part D1	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part D1 of Volume Three.
D1.2	Amended to include reference to AS/NZS 3500.5.
Part D2	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part D2 of Volume Three.

Reference	Changes and Commentary
D2.2	Amended to include reference to AS/NZS 3500.5.
Section E	
Part E1	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part E1 of Volume Three.
EO1(b)	Objective amended to provide consistency with the Performance Requirements for Part E1.
Section F	
Part F1	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part F1 of Volume Three.
F1.2(d)	Re-structured to define the application of AS/NZS 3500.5.
F1.2	New Explanatory Information inserted to identify Parts of NCC Volume One and Two which may be relevant to work covered by F1.2 of Volume Three.
Part F2	New Explanatory Information inserted following the Deemed-to-Satisfy Provisions to identify Parts of NCC Volume One and Two which may be relevant to work covered by Part F2 of Volume Three.
Commonwealth of Australia Appendix	
Footnote	The footnotes listing other legislation affecting buildings have been amended.
Australian Capital Territory Appendix	
Footnote	The footnotes listing other legislation affecting buildings have been amended.
New South Wales Appendix	
Footnote	The footnotes listing other legislation affecting buildings have been amended.
Queensland Appendix	
Qld B1.2(c)	A new variation to delete B1.2(c) has been inserted.
Qld C2.2(b)	A new variation to delete C2.2(b) has been inserted.
South Australia Appendix	
SA B1.2(d)	This addition has been renumbered as a consequence of the insertion of a new Deemed-to-Satisfy Provision B1.2(c).
SA B2.2(a)(i)	New variations to the text of AS/NZS 3500.4 have been inserted under SA B2.2(a)(i).
SA B2.2(a)(ii)	New variations to the text of Section 3 of AS/NZS 3500.5 have been inserted under SA B2.2(a)(ii).
SA B4.2(g)	This addition has been removed.
SA C1.2(a)(i)	New variations to the text of AS/NZS 3500.2 have been inserted under SA C1.2(a)(i).

Reference		Changes and Commentary
SA C2.2(a)(ii)		New variations to the text of Section 4 of AS/NZS 3500.5 have been inserted under SA C1.2(a)(ii).
Tasmania Appendix		
Tas A1.1	Certificate of Accreditation	The definition of 'Certificate of Accreditation' has been amended to remove references to the Tasmanian Plumbing Code.
	Energy conservation	This defined term has been removed.
	Permit Authority	A defined term 'Permit Authority' has been inserted, and existing references to this term have been italicised to indicate they have a special meaning.
Tas A1.801		Amended to remove reference to the Office of the Director of Building Control, so as to refer specifically to the Director of Building Control.
Tas A2.1(i)		New addition inserted to provide for the authorisation of cold water storage tanks.
Tas A2.2		This variation of all of clause A2.2 has been replaced by variations to a specified sub-clause, Tas A2.2(i). As such, an individual flag has also been placed above the affected sub-clause.
Tas A2.201		This addition has been removed.
Tas Part A201		This additional Part has been removed.
Tas Table A3.1	AS 2070	Reference to AS 2070 'Plastics materials for food contact use' has been inserted.
	AS/NZS 2179.1	Reference to AS/NZS 2179 'Specifications for rainwater goods, accessories and fasteners: Part 1 – Metal shape or sheet rainwater goods, and metal accessories and fasteners' has been inserted.
	AS/NZS 3500.1	Reference to AS/NZS 3500.1 'Plumbing and drainage: Part 1 – Water services' has been inserted.
	AS/NZS 3500.3	Reference to AS/NZS 3500.1 'Plumbing and drainage: Part 3 – Stormwater drainage' has been inserted.
	AS 3600	Reference to AS 3600 'Concrete structures' has been inserted.
	AS 3735	Reference to AS 3735 'Concrete structures retaining liquids' has been inserted.
	AS/NZS 4020	Reference to AS/NZS 4020 'Testing of products in contact with drinking water' has been inserted.
	AS/NZS 4130	Reference to AS/NZS 4130 'Polyethylene (PE) pipes for pressure applications' has been inserted.
	AS/NZS 4766	Reference to AS/NZS 4766 'Polyethylene storage tanks for water and chemicals' has been inserted.
	ATS 5200.026	Reference to ATS 5200.026 'Technical Specification for plumbing and drainage products: Cold water storage tanks' has been inserted.
	HB 230	'Informative' reference to HB 230 'Rainwater tank design and installation handbook' has been inserted.

Reference	Changes and Commentary
EnHealth	'Informative' reference to the EnHealth Guidance on the use of rainwater tanks has been inserted.
Tas B1.0	Amended to refer specifically to *drinking water*.
Tas B1.2(d)	This addition has been renumbered as a consequence of the insertion of a new Deemed-to-Satisfy Provision B1.2(c).
Tas B101.1	Amended to remove references to 'the Plumbing Code of Australia'.
Tas B101.2	Amended to include references to AS/NZS 3500.5
Tas B101.4(i)	New sub-clause inserted to apply AS/NZS 4020 to tank linings.
Tas B101.10	Amended to include reference to 'cleaning'.
Tas C101.1	Amended to remove references to 'the Plumbing Code of Australia'.
Tas C2.2(c)	Amended to include reference to Tas G101.
Tas C2.2(d)	Amended to include reference to Tas G101.
Tas F101.1	Amended to remove references to 'the Plumbing Code of Australia'.
Tas F201.1	Amended to remove references to 'the Plumbing Code of Australia'.
Tas F202.1	Amended to remove references to 'the Plumbing Code of Australia'.
Tas F202.4	Amended to remove references to 'the Tasmanian Plumbing Code' and insert references to diagrams.
Tas Figures F202.4a to m	New diagrams inserted to transfer installation diagrams and notes for liquid trade waste systems from the Tasmanian Plumbing Code.
Tas G101 O1	Amended to remove references to 'the Tasmanian Plumbing Code'.
Tas G101 F1	Amended to remove references to 'the Tasmanian Plumbing Code'.
Tas G101 P1(b)	Amended to remove references to 'the Tasmanian Plumbing Code'.
Tas G102.1	Amended to remove reference to 'Tasmania'.
Footnote	The footnotes listing other legislation affecting buildings have been amended.
Victoria Appendix	
Vic B1.2(d)	This addition has been renumbered as a consequence of the insertion of a new Deemed-to-Satisfy Provision B1.2(c).
Vic B1.2(e)	This addition has been renumbered as a consequence of the renumbering of B1.2(d).
Vic C2.2(d)	This addition has been renumbered as a consequence of the insertion of a new Deemed-to-Satisfy Provision C2.2(c)
Vic C2.2(e)	This addition has been renumbered as a consequence of the renumbering of C2.2(d).
Western Australia Appendix	
WA Appendix	An Appendix has been inserted to provide for the adoption of PCA 2015 in Western Australia.
Footnote	A footnote listing other legislation affecting buildings has been inserted.

Australian Building Codes Board

Building Australia's Future

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