

## 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 Building Code of Australia (BCA) is Volume One and Two of the NCC and the Plumbing Code of Australia (PCA) is Volume Three of the NCC.

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

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

### THE NCC – FORMAT

The NCC is published in three volumes:

**Volume One:** contains the requirements for—

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

~~pertains primarily to Class 2 to 9 buildings.~~

**Volume Two:** contains the requirements for—

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

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

**Volume Three:** contains the requirements for plumbing and drainage associated with all classes of buildings.

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

The NCC is accompanied by other documents, comprising the Performance Requirements Extracted from the National Construction Code and a Guide to Volume One.

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

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

### 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 GOAL

The goal of the NCC is to enable achievement of nationally consistent, minimum necessary standards of relevant safety (including structural safety from fire), health, amenity and sustainability objectives efficiently.

The goal is applied so that—

- (a) there is a rigorously tested rationale for the regulation; and
- (b) the regulation is effective and proportional to the issues being addressed such that the regulation will generate benefits to society greater than the costs (that is, net benefits); and
- (c) there is no regulatory or non-regulatory alternative (whether under the responsibility of the Board or not) that would generate higher net benefits; and
- (d) the competitive effects of the regulation have been considered and the regulation is no more restrictive than necessary in the public interest.

## THE AUSTRALIAN BUILDING CODES BOARD

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

The ABCB's mission is to address issues relating to safety, health, amenity and sustainability in the design, construction and performance of buildings. This is achieved through the NCC and the development of effective regulatory systems and appropriate non-regulatory solutions.

The Board comprises—

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

The Building Codes Committee (BCC) is the peak technical advisory body to the ABCB, with responsibility for technical matters associated with the BCA.

The BCC 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 building and construction industry.

The Plumbing Code Committee (PCC) is the peak technical advisory body to the ABCB, with responsibility for technical matters associated with the PCA.

The PCC comprises—

- (a) 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 [PGANCC](#) 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 [buildings](#), [structures](#), [plumbing](#) and [drainage](#) installations, and contains the administrative provisions necessary to give effect to the legislation.

Any provision of the [PGANCC](#) may be overridden by, or subject to, State or Territory legislation. The [PGANCC](#) 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](#).

### PGA ADOPTION

[The dates of adoption of the Plumbing Code of Australia \(NCC Volume Three\) and its amendments are shown in the "History of PCA Adoption" division at the end of this Volume.](#)

[The adoption of the PCA is addressed in Part A0.](#)

### STATE AND TERRITORY VARIATIONS AND ADDITIONS

[Each State's and Territory's legislation adopts the NCC subject to the variation or deletion of some of its provisions, or the addition of extra provisions. These are:](#)

[For Volume One, variations, deletions and additions are contained in the Appendices to Volume One with flags identifying variations located within relevant provisions and at the beginning of relevant tables. Additional provisions to Volume One are identified at the end of the relevant Part.](#)

[For Volume Two, variations are contained following the provision that is being varied. Additional requirements are contained in Appendix A to Volume Two.](#)

[For Volume Three, variations, deletions and additions are contained in the Appendices to Volume Three with flags identifying variations located within relevant provisions and at the beginning of relevant tables. Additional provisions to Volume Three are identified at the end of the relevant Part.](#)

## DOCUMENTATION OF DECISIONS

[Decisions made under the PCA should be fully documented and copies of all relevant documentation should be retained.](#)

[Examples of the kind of documentation which should be prepared and retained include:](#)

- (a) [Details of the 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.~~

# 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.

### A0.1 Compliance with the NCC

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

## A0.2 Scope

- (a) Sections **B** to **F** of 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.

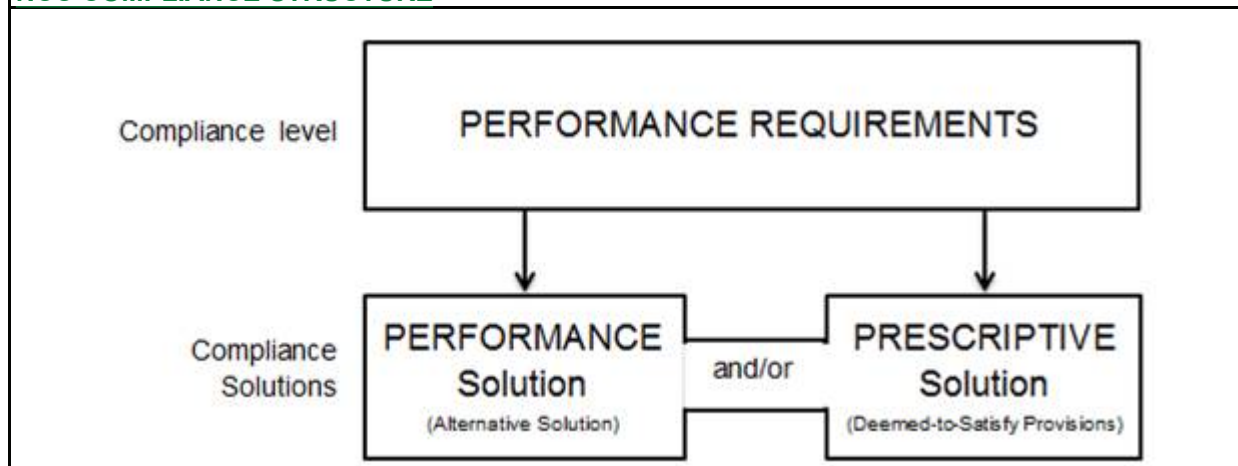
### A0.2 Meeting the Performance Requirements

The *Performance Requirements* can only be satisfied by—

- (a) complying with the *Prescriptive Solutions (Deemed-to-Satisfy Provisions)*; or
- (b) formulating a *Performance Solution (Alternative Solution)*; or
- (c) a combination of (a) and (b).

Figure A0.2

#### NCC COMPLIANCE STRUCTURE



## 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**

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### **A0.3 Prescriptive Solutions**

- (a) A Prescriptive Solution must comply with the Deemed-to-Satisfy Provisions, which are deemed to comply with the Performance Requirements.
- (b) A Prescriptive Solution may be assessed according to one or more of the Assessment Methods.

### **A0.4 Compliance with the PCA**

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

### **A0.4 Performance Solutions**

- (a) A Performance Solution must be assessed according to one or more of the Assessment Methods.
- (b) A Performance Solution will only comply with the NCC if the Assessment Methods used to determine compliance with the Performance Requirements have been satisfied.

### **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).~~

### **A0.5 Assessment Methods**

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

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

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

**Explanatory Information:**

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

Here, the term *Performance 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.

## **A0.6 Objectives and Functional Statements**

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

## **A0.6 Defined terms**

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

## **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.

### DRAFTING NOTE

The changes to WaterMark related definitions shown below form part of a proposed revision that will be necessary to enable changes to the *WaterMark Certification Scheme* to be implemented as part of the 2016 edition of the PCA. The changes to the *WaterMark Certification Scheme* were agreed, in principle, by the Australian Building Codes Board, however, it should be noted that this reform is subject to final decision by the Building Ministers' Forum.

**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.

**Aged care building** means a Class 9c building for residential accommodation of aged persons who, due to varying degrees of incapacity associated with the ageing process, are provided with personal care services and 24 hour staff assistance to evacuate the building during an emergency.

**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~~ *Performance Solution*.

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

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

~~**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~~ *Performance Solution or a Prescriptive Solution* complies with the *Performance Requirements*.

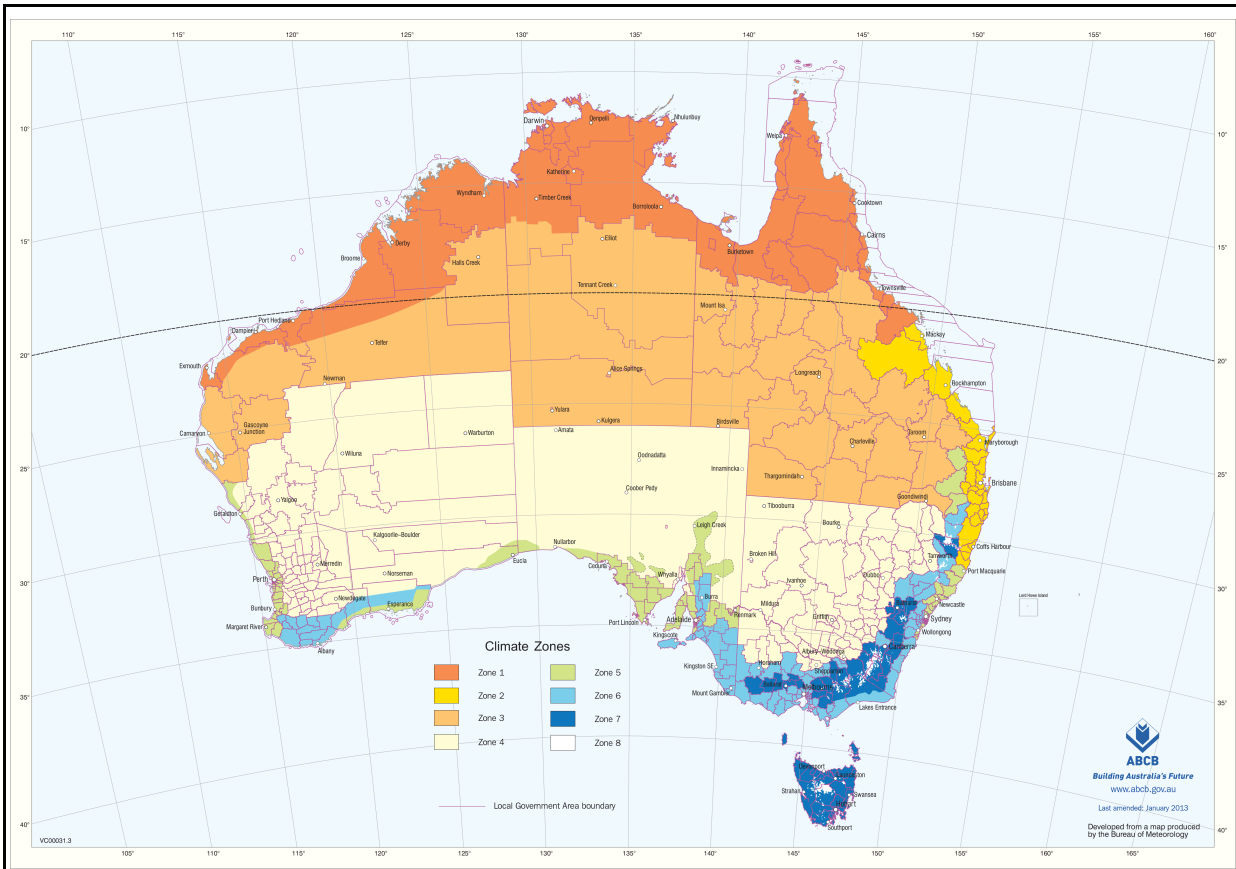
**Average recurrence interval** applied to rainfall, means the expected or average interval between exceedances for a 5 minute duration rainfall intensity.

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

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

Location	Climate zone	Location	Climate zone	Location	Climate zone	Location	Climate zone
Australian Capital Territory				Canberra	7		
<b>New South Wales</b>							
Albury	4	Byron Bay	2	Lord Howe Island	2	Sydney West	6
Armidale	7	Cobar	4	Moree	4	Tamworth	4
Batemans Bay	6	Coffs Harbour	2	Newcastle	5	Thredbo	8

Location	Climate zone	Location	Climate zone	Location	Climate zone	Location	Climate zone
Bathurst	7	Dubbo	4	Nowra	6	Wagga Wagga	4
Bega	6	Goulburn	7	Orange	7	Williamtown	5
Bellingen Shire - Dorrigo Plateau	7	Grafton	2	Perisher Smiggins	8	Wollongong	5
Bellingen Shire - Valley & seaboard	2	Griffith	4	Port Macquarie	5	Yass	6
Bourke	4	Ivanhoe	4	Sydney East	5		
Broken Hill	4	Lismore	2				
<b>Northern Territory</b>							
Alice Springs	3	Elliot	3	Renner Springs	3		
Darwin	1	Katherine	1	Tennant Creek	3		
<b>Queensland</b>							
Birdsville	3	Cunnamulla	3	Maryborough	2	Toowoomba	5
Brisbane	2	Longreach	3	Mount Isa	3	Torrens Creek	3
Bundaberg	2	Gladstone	2	Normanton	1	Townsville	1
Cairns	1	Labrador	2	Rockhampton	2	Warwick	5
Cooktown	1	Mackay	2	Roma	3	Weipa	1
<b>South Australia</b>							
Adelaide	5	Kingscote	6	Marree	4	Port Lincoln	5
Bordertown	6	Leigh Creek	5	Mount Gambier	6	Renmark	5
Ceduna	5	Lobethal	6	Murray Bridge	6	Tarcoola	4
Cook	4	Loxton	5	Oodnadatta	4	Victor Harbour	6
Elliston	5	Naracoorte	6	Port Augusta	4	Whyalla	4
<b>Tasmania</b>							
Burnie	7	Flinders Island	7	Launceston	7	Rossarden	7
Bicheno	7	Hobart	7	New Norfolk	7	Smithton	7
Deloraine	7	Huonville	7	Oatlands	7	St Marys	7
Devonport	7	King Island	7	Orford	7	Zeehan	7
<b>Victoria</b>							
Anglesea	6	Bright	7	Horsham	6	Swan Hill	4
Ararat	7	Colac	6	Melbourne	6	Traralgon	6
Bairnsdale	6	Dandenong	6	Mildura	4	Wangaratta	7
Ballarat	7	Echuca	4	Portland	6	Warrnambool	6
Benalla	6	Geelong	6	Sale	6	Wodonga	6
Bendigo	6	Hamilton	7	Shepparton	4		
<b>Western Australia</b>							
Albany	6	Cocos Island	1	Kalgoorlie-Boulder	4	Port Hedland	1
Balladonia	4	Derby	1	Karratha	1	Wagin	4
Broome	1	Esperance	5	Meekatharra	4	Wyndham	1
Bunbury	5	Exmouth	1	Northam	4		
Carnarvon	3	Geraldton	5	Pemberton	6		
Christmas Island	1	Halls Creek	3	Perth	5		

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

**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.

**Early childhood centre** means any premises or part thereof providing or intending to provide a centre-based education and care service within the meaning of the Education and Care Services National Law Act 2010 (Vic), the Education and Care Services National Regulations and centre-based services that are licensed or approved under State and Territory children's services law, but excludes education and care primarily provided to school aged children in outside school hours settings.

**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~~ *Performance Solution or a Prescriptive Solution* complies with the *Performance Requirements*.

**Explanatory Information:**

The level of qualification and/or experience required to determine whether a ~~Plumbing or Drainage Solution~~ *Performance Solution or a Prescriptive 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*.

**Health-care building** means a building whose occupants or patients undergoing medical treatment generally need physical assistance to evacuate the building during an emergency and includes—

- (a) a public or private hospital; or
- (b) a nursing home or similar facility for sick or disabled persons needing full-time care; or
- (c) a clinic, day surgery or procedure unit where the effects of the predominant treatment administered involve patients becoming non-ambulatory and requiring supervised medical care on the premises for some time after the treatment.

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

**Heated water service** means a system comprising at least one *water heater and heated water reticulation system*, designed and installed to provide *heated water* to one or more outlets.

**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) ~~U~~ndertakes the piped distribution of *drinking water* or *non-drinking water* for supply; or
- (b) ~~i~~s 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*~~ *Performance Solution* or a *Prescriptive Solution* must meet.

**Performance Solution** means a method of complying with the *Performance Requirements* as outlined in **A0.4**.

**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*~~ *heated water service* means the point where the *water heater* ~~*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.

**Prescriptive Solution** means a method of satisfying the *Deemed-to-Satisfy Provisions*, deemed to comply with the *Performance Requirements*.

**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.~~

**Registered Testing Authority** means—

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

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

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

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

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

**Temperature control device** means either a tempering valve, a thermostatic mixing valve, or a *water heater* with an inbuilt means of limiting its maximum delivery temperature.

**Verification Method** means a test, inspection, calculation or other method that determines whether a ~~*Plumbing or Drainage Solution*~~ *Performance 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.~~

**Water heater** means a single device, or a set of interconnected devices, designed and installed to heat water. Interconnected devices include, but are not limited to, solar *water heaters* provided with supplementary heating from another source and multiple single *water heaters* installed in a manifolded arrangement.

~~**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 (*GAB*) 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 Licence*.

**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* *ABCB* scheme for certifying and authorising *plumbing and drainage materials and products*.

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

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

**WaterMark Schedule of Excluded Products** means the list maintained by the *administering body* of materials and *products* excluded 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](http://www.abcb.gov.au):

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

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

#### Explanatory Information:

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

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

#### DRAFTING NOTE

The changes to WaterMark related definitions shown above form part of a proposed revision that will be necessary to enable changes to the *WaterMark Certification Scheme* to be implemented as part of the 2016 edition of the PCA. The changes to the *WaterMark Certification Scheme* were agreed, in principle, by the Australian Building Codes Board, however, it should be noted that this reform is subject to final decision by the Building Ministers' Forum.

## A1.2 Adoption of Standards and other references

Where a *Deemed-to-Satisfy Provision* references a document, rule, *specification* *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~~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 **PGANCC**

The **PGANCC** overrules in any difference arising between it and any Standard, rule, ~~specification~~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 building in the PCA is a reference to an entire building or part of a building, as the case requires.
- (ab) 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.
- (bc) 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*.
- (ed) A reference to Class 1a, 1b, 7a, 7b, 9a, 9b, 9c, 10a, 10b and 10c is a reference to the separate



# 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) ~~For the purposes of (a), a Mmaterials or products listed in Table A2.1 which are used in plumbing or drainage installations must be certified and authorised:~~ is fit for purpose if it is—
- (i) listed on the *WaterMark Schedule of Products*, certified and authorised in accordance with the *WaterMark Certification Scheme*; or
  - (ii) listed on the *WaterMark Schedule of Excluded Products*;  
and is supported by evidence of suitability provided in accordance with **A2.2**.
- (c) ~~\* \* \* \* \* Product certification and authorisation must comply with the procedures set out in Part G1.~~
- (d) A Mmaterials and/or products intended for use in contact with *drinking water* must comply with AS/NZS 4020, and be supported by evidence of suitability in accordance with **A2.2**.

#### Explanatory information

##### Fit for purpose

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

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

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

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

##### New or innovative products

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

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

- (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.~~

**DRAFTING NOTE**

The changes shown above form part of a proposed revision that will be necessary to enable changes to the *WaterMark Certification Scheme* to be implemented as part of the 2016 edition of the PCA. The changes to the *WaterMark Certification Scheme* were agreed, in principle, by the Australian Building Codes Board, however, it should be noted that this reform is subject to final decision by the Building Ministers' Forum.

**A2.2 Evidence of suitability**

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

- (ab) Evidence to support that any other~~the use of a~~ material, or product, or a~~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* or a Registered Testing Authority showing that the material, *product*, ~~the~~ design, form of construction ~~and/or~~ installation has been submitted to the tests listed in a report, and setting out the results of those tests and any other relevant information that demonstrates its suitability for use in the *plumbing* or *drainage* installation.
- (iii) A certificate from a *professional engineer* or other appropriately qualified person which—
- (A) certifies that a material, *product*, design, form of construction or installation complies with the requirements of the PCA; and
- (B) sets out the basis on which certification is given and the extent to which relevant ~~specifications~~specifications, rules, codes of practice or other publications have been relied upon.
- (iv) A current certificate issued by a product certification body that has been accredited by JAS-ANZ.
- (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.
- (bc) Any copy of documentary evidence submitted must be a complete copy of the original report or document.

**Explanatory information**

**Products subject to WaterMark certification**

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

**Products not subject to WaterMark certification**

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

**Suitability of design, construction and installation**

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

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

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

**DRAFTING NOTE**

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**Table A2.1 MATERIALS AND PRODUCTS WHICH REQUIRE AUTHORISATION**

<b>Product Category</b>	<b>Product Type</b>	<b>Minimum certification level</b>
<b>APPLIANCES AND FIXTURES</b>		
<b>Appliances and fixtures</b>	General	2
Exceptions	Bedpan washer/steriliser	1
	Water filters and water treatment appliances	1
<b>Sanitary Fixtures</b>	General	2

<b>Product Category</b>	<b>Product Type</b>	<b>Minimum certification level</b>
Exceptions	Urinals with remote-control flush systems	4
	Water-closet pans and suites	4
	Bidets and Bidettes	4
	Cisterns	4
	Small-bore macerator systems	4
<b>Water-using appliances</b>	General	2
Exception	Beverage dispensers and ice-makers	4
<b>Water Heaters and Water Heated Storage Tanks</b>	General	4
<b>NON-PRESSURISED PIPES, FITTINGS AND ACCESSORIES</b>		
<b>Non-pressurised pipes, fittings and accessories</b>	General	2
Exception	PVC-U	4
<b>Vent valves – General</b>	General	2
<b>Pipes and Fittings (non-pressure)</b>	General	2
<b>Non-Return Reflux valves for Sewerage</b>	General	2
<b>PRESSURISED PIPES, FITTINGS AND ACCESSORIES</b>		
<b>Pressurised pipes, fittings and accessories</b>	General	4
Exception	Shower heads	2
<b>MATERIAL IN CONTACT WITH DRINKING WATER</b>		
<b>Material in contact with drinking water</b>	General	4
<b>Water linings</b>	General	4
<b>WATER SUPPLY VALVES AND VALVE ACCESSORIES</b>		
<b>Water supply valves and valve accessories</b>	General	4
<b>Backflow Prevention Devices</b>	General	4
<b>Control Valves and Taps</b>	General	4
<b>Valves for Pressure and Temperature</b>	General	4
<b>Valve and Tap Accessories</b>	General	4
<b>Fire Protection</b>	General	4
<b>GREYWATER DIVERSION DEVICES (Gravity or pumped discharge)</b>		
<b>Greywater diversion devices (gravity or pumped discharge)</b>	General	2
NOTES:		
1:	For a comprehensive list of <i>product</i> types and applications, <i>specifications</i> and exemptions, see the <i>WaterMark Schedule of Specifications and WaterMark Exempt Products</i> .	

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

#### DRAFTING NOTE

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PART **A3**

## DOCUMENTS ADOPTED BY REFERENCE

**A3.1 Schedule of referenced documents**

ACT, SA, Tas

The Standards and other documents listed in [Table A3.1](#) are referred to in the PCA.**Table A3.1 SCHEDULE OF REFERENCED DOCUMENTS**

Document No.	Date	Title	PCA Clause
<b>AS 1056</b> Part 1	1991	Storage water heaters General requirements Amdt 1 Amdt 2 Amdt 3 Amdt 4 Amdt 5	<b>B2.4</b>
<b>AS/NZS 1200</b>	2000	Pressure equipment	<b>E1.2</b>
<b>AS 1271</b>	2003	Safety valves, other valves, liquid level gauges, and other fittings for boilers and unfired pressure vessels Amdt 1	<b>E1.2</b>
<b>AS 1324</b> Part 1	2001	Air filters for use in general ventilation and air-conditioning Application, performance and construction	<b>E1.2</b>
<b>AS 1345</b>	1995	Identification of the contents of pipes, conduits and ducts	<b>E1.2</b>
<b>AS 1358</b>	2004	Bursting discs and bursting disc devices - Application, selection, installation Amdt 1	<b>E1.2</b>
<b>AS 1428</b> Part 1	2009	Design for access and mobility General requirements for access – New building work Amdt 1	<b>B1.3, B2.3, C1.3</b>
Part 1	2001	General requirements for access – New building work	<b>B1.3, B2.3, C1.3</b>
Part 2	1992	Enhanced and additional requirements – Buildings and facilities	<b>B1.3, B2.3, C1.3</b>
<b>AS/NZS 1546</b> Part 1	1998	On-site domestic wastewater treatment units Septic tanks	<b>C2.2, F1.2</b>
Part 2	2001	Waterless composting toilets	<b>C2.2, F1.2</b>
Part 3	2001	Aerated wastewater treatment systems	<b>C2.2, F1.2</b>
<b>AS/NZS 1547</b>	2000	On-site domestic wastewater management	<b>C2.2, F1.2</b>
<b>AS/NZS 1571</b>	1995	Copper – Seamless tubes for air-conditioning and refrigeration	<b>E1.2</b>

Document No.	Date	Title	PCA Clause
<b>AS/NZS 1668</b> Part 1	1998	The use of mechanical ventilation and air-conditioning in buildings Fire and smoke control in multi-compartment buildings Amdt 1	<b>E1.2</b>
<b>AS 1668</b> Part 2	2012	The use of mechanical ventilation and air-conditioning in buildings Mechanical ventilation in buildings Amdt 1	<b>E1.2</b>
<b>AS 2118</b> Part 1 Part 4 Part 5 Part 6 Part 9	1999 2012 1995 2012 1995	Automatic fire sprinkler systems General Requirements Amdt 1 Sprinkler protection for accommodation buildings not exceeding four storeys in height Automatic fire sprinkler systems - Domestic Combined sprinkler and hydrant systems in multi-storey buildings Piping support and installation	<b>B4.2</b> <b>B4.2</b> <b>B4.2</b> <b>B4.2</b> <b>B4.2</b>
<b>AS 2419</b> Part 1	2005	Fire hydrant installations System design, installation and commissioning Amdt 1	<b>B4.2</b>
<b>AS 2441</b>	2005	Installation of fire hose reels Amdt 1	<b>B4.2</b>
<b>AS/NZS 3500</b> Part 0 Part 1 Part 2 Part 3 Part 4	2003 2003 2003 2003 2003	Plumbing and Drainage Glossary of terms Water services Amdt 1 Amdt 2 Sanitary plumbing and drainage Amdt 1 Amdt 2 Amdt 3 Amdt 4 Storm water drainage Amdt 1 Amdt 2 Amdt 3 Heated water services Amdt 1 Amdt 2	<b>A1.1</b> <b>B1.2, B3.2, B4.2, E1.2</b> <b>C1.2, C2.2, E1.2, F1.2, F2.2</b> <b>A2.1, D1.2, D2.2</b> <b>B2.2, B2.4 E1.2</b>

Document No.	Date	Title	PCA Clause
Part 5	2012	Housing installations	<b>B1.2, B2.2, B3.2, C1.2, C2.2, D1.2, D2.2, F1.2</b>
<b>AS/NZS 3666</b>		Air handling and water systems of buildings – Microbial Control	
Part 1	2011	Design, installation and commissioning	<b>E1.2</b>
Part 2	2011	Operation and maintenance	<b>E1.2</b>
<b>AS/NZS 4020</b>	2005	Testing of products in contact with drinking water	<b>A2.1, G1.5</b>
<b>AS 4041</b>	2006	Pressure Piping	<b>E1.2</b>
<b>AS 4118.2.1</b>	1995	Fire Sprinkler Systems - Piping - General Amdt 1	<b>B4.2</b>
<b>AS/NZS 4234</b>	2008	Heated water systems – Calculation of energy consumption Amdt 1 Amdt 2 Amdt 3	<b>BV2.2, B2.4</b>
<b>AS 4254</b>		Ductwork for air-handling systems in buildings	
Part 1	2012	Flexible Duct	<b>E1.2</b>
Part 2	2012	Rigid Duct	<b>E1.2</b>
<b>AS 4426</b>	1997	Thermal insulation of pipework, ductwork and equipment – selection, installation and finish	<b>E1.2</b>
<b>AS 4508</b>	1999	Thermal resistance of insulation for ductwork used in building air conditioning Amdt 1	<b>E1.2</b>
<b>AS 4552</b>	2005	Gas fired water heaters for hot water supply and/or central heating	<b>B2.4</b>
<b>AS 5601</b>	2004	Gas Installations	<b>E1.2</b>
<b>ABGB</b>	2013	<del>Manual for the Assessment of Risks of Plumbing Products</del>	<del><b>A2.1, G1.2, G1.5</b></del>
<del>ISO/IEC Guide 67</del>	2004	<del>Conformity assessment – Fundamentals of product certification</del>	<del><b>G1.5</b></del>

#### DRAFTING NOTE

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# PART B1 COLD WATER SERVICES

## Explanatory information:

### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a 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

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

## Tas B1.0

### B1.0 Scope Scope

~~This Part sets out the requirements~~ *Performance Requirements BP1.1 to BP1.3* ~~for~~ apply to 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

### B01

~~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~~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) prevent the transmission of sound from the plumbing system, fixtures and fittings into the building at a level exceeding the prevailing background sound level within that building; and
- (ed) avoid the likelihood of leakage or failure including uncontrolled discharges; and
- (de) facilitate the efficient use of *drinking water*; and
- (ef) allow ~~adequate~~adequate access for maintenance of mechanical components and operational controls; and
- (fg) allow the system, appliances and backflow prevention devices to be isolated for testing and maintenance, where *required*.

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

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

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

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

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

### BP1.3 People with a disability

Facilities provided for people with a disability must have cold water supply taps or other operational controls that are *accessible* and ~~adequate~~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 B2 HEATED WATER SERVICES

### Explanatory information:

#### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a heated water installation; and
- (b) ensure that a heated water installation (including an installation provided for use by people with a disability) is suitable; and
- (c) conserve water; and
- (d) safeguard the environment; and
- (e) reduce greenhouse gas emissions; and
- (f) safeguard public and private infrastructure; and
- (g) ensure that a heated water installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (f)

#### Functional Statements

- (a) Sanitary fixtures, sanitary appliances and supply outlets provided with heated water must have a safe and adequate piped heated water supply.
- (b) The heated water supply must be conveyed through plumbing installations in a way that—
  - (i) minimises any adverse impact on building occupants, the Network Utility Operator's infrastructure, property and the environment; and
  - (ii) facilitates the conservation of water.
- (c) To reduce greenhouse gas emissions, to the degree necessary, a heated water service is to—
  - (i) be capable of efficiently using energy; and
  - (ii) obtain its heating energy from—
    - (A) a low greenhouse gas intensity energy source; or
    - (B) an on-site renewable energy source; or
    - (C) 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 Functional Statement (c), the renewable energy source must be on-site (not GreenPower) and includes, but is not limited to solar, wind, hydroelectric, wave action and geothermal.

### B2.0 **Scope** Scope

~~This Part sets out the requirements~~ *Performance Requirements BP2.1 to BP2.6 and BP2.8* ~~for~~ apply to the design, construction, installation, replacement, repair, alteration and maintenance of any part of a ~~heated water service~~ *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~~ 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~~ 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~~ 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) prevent the transmission of sound from the heated water service, fixtures and fittings into the building at a level exceeding the prevailing background sound level within that building; and
- (ed) avoid the likelihood of leakage or failure, including uncontrolled discharges; and
- (d) \* \* \* \* \*
- (e) allow ~~adequate~~ 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~~*adequate* for their use.

## BP2.7 Materials and Products

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

### Qld BP2.8

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

A ~~heated-water service~~*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~~*heated water service* and its usage; and
  - (ii) the geographic location of the building; and
  - (iii) the location of the ~~heated-water service~~*heated water service*; and
  - (iv) the energy source; and

#### Explanatory information:

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

### NSW BP2.8(b)

### NT BP2.8(b)

### Vic BP2.8(b)

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

#### Application:

**BP2.8(b)** only applies to a ~~heated-water service~~*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**heated water services*, the design should consider factors such as the number of outlets, their purpose and expected typical usage, and the distance between the *water-heater**water heater* and each of the outlets. The *heated-water unit**water heater* 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**heated water services*; 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**water heater* in a *heated-water supply system**heated water service* is verified when the annual greenhouse gas intensity of the *water-heater**water heater* does not exceed 100 g CO<sub>2</sub>-e/MJ of thermal energy load determined in accordance with AS/NZS 4234.
- (b) The annual greenhouse gas intensity of the *water-heater**water heater* in (a) is the sum of the annual greenhouse gas emissions from each energy source in g CO<sub>2</sub>-e divided by the annual thermal energy load of the *water-heater**water heater*.
- (c) The annual greenhouse gas emissions from each energy source in (b) is the product of—
  - (i) the annual amount of energy consumed from that energy source; and
  - (ii) the emission factor of—
    - (A) if the energy source is electricity, 272 g CO<sub>2</sub>-e/MJ; or
    - (B) if the energy source is liquified petroleum gas, 65 g CO<sub>2</sub>-e/MJ; or
    - (C) if the energy source is natural gas, 61 g CO<sub>2</sub>-e/MJ; or
    - (D) if the energy source is wood or biomass, 4 g CO<sub>2</sub>-e/MJ.

**Explanatory information:**

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

**SA BV2.201**



**BV2.3**

Compliance with **BP2.2** for the delivery temperature of *heated water* is verified when, for an installation used primarily for personal hygiene purposes, each *heated water* or combined *heated water* and cold water outlet delivers *heated water* at a temperature in accordance with **Table BV2.3**.

**Table BV2.3 DELIVERY TEMPERATURES AND MAXIMUM CONTINUOUS EXPOSURE TIMES FOR HEATED WATER**

<u>Delivery temperature (°Celsius)</u>	<u>Maximum continuous exposure time of skin to heated water (seconds)</u>
50	10
49	20
48	30
47	40
46	50
45	60
<b>Note:</b> In any case, the delivery temperature of <i>heated water</i> must not exceed 50° Celsius.	

*Deemed-to-Satisfy Provisions*

- (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.

**B2.7 Maximum delivery temperature**

- (a) Except where specified by (b), the delivery temperature of *heated water* for personal hygiene purposes must be not more than 50° Celsius at the outlet of each sanitary fixture.
- (b) The delivery temperature of *heated water* for personal hygiene purposes must be not more than 45° Celsius at the outlet of each sanitary fixture, where the sanitary fixture is installed within—
- (i) an *aged care building*, and is principally used by residents; or
  - (ii) a *health-care building*, and is principally used by patients; or
  - (iii) an *early childhood centre* or primary or secondary school, and is principally used by children.
- (c) Each *required* maximum delivery temperature must be achieved by a *temperature control device* installed in accordance with B2.8.

**Explanatory information:**

1. Sanitary fixtures used for personal hygiene may include showers, baths, handbasins and bidets.
2. The purpose of setting a maximum delivery temperature of 50 degrees Celsius for *heated water*, where used for personal hygiene purposes, is to reduce the likelihood of scalding. A maximum delivery temperature of 45 degrees Celsius is intended to apply in buildings whose occupants may be at a heightened risk of scalding.

**B2.8 Application of requirement for temperature control**

- (a) A *temperature control device* must be installed for sanitary fixtures used for personal hygiene purposes where—
- (i) an entirely new *heated water service* is installed; or
  - (ii) a *heated water* reticulation system or a *water heater* is installed separately; or
  - (iii) an existing *water heater* is relocated; or
  - (iv) a *heated water* reticulation system is extended to serve additional fixtures.
- (b) The requirements of (a) do not apply when—
- (i) one or more, but not all, heating units in a manifolded *water heater* system are replaced; or

*Deemed-to-Satisfy Provisions*

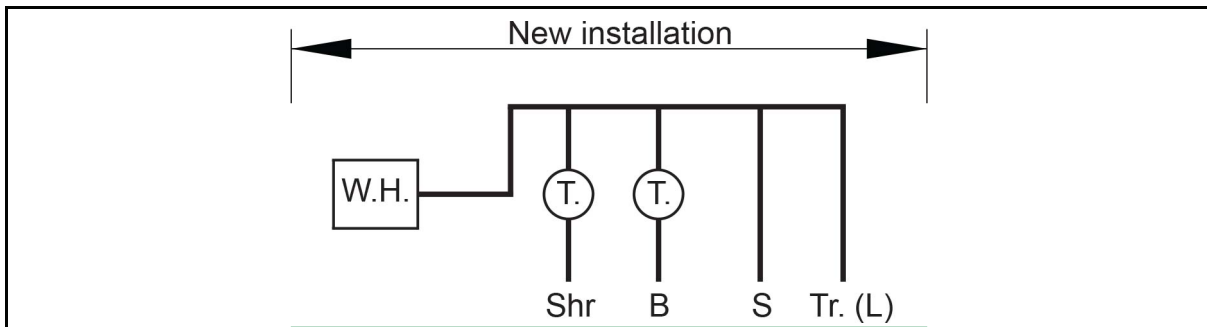
- (ii) a supplementary water heater in a solar water heater system is replaced.

**Explanatory information:**

The following diagrams provide indicative examples of the application of **B2.8(a)** to different installation scenarios. In each diagram, a circle with a letter 'T' inside it indicates which sanitary fixtures are required to be subject to temperature control.

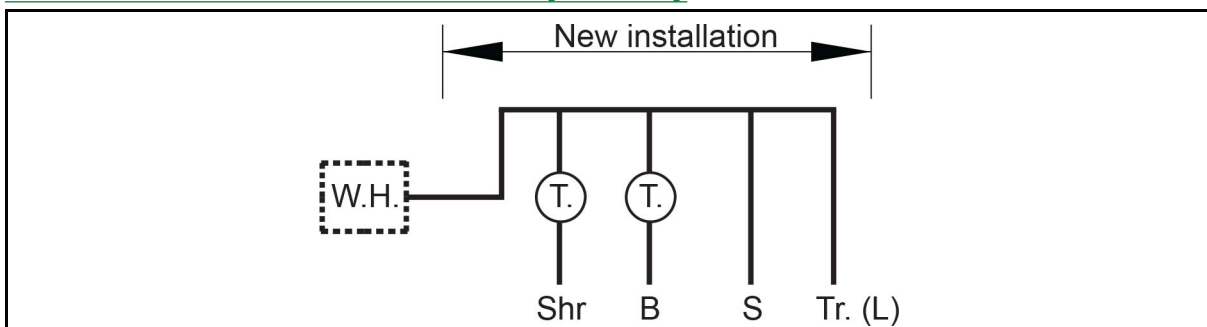
**B2.8(a)(i)**

**An entirely new heated water service**



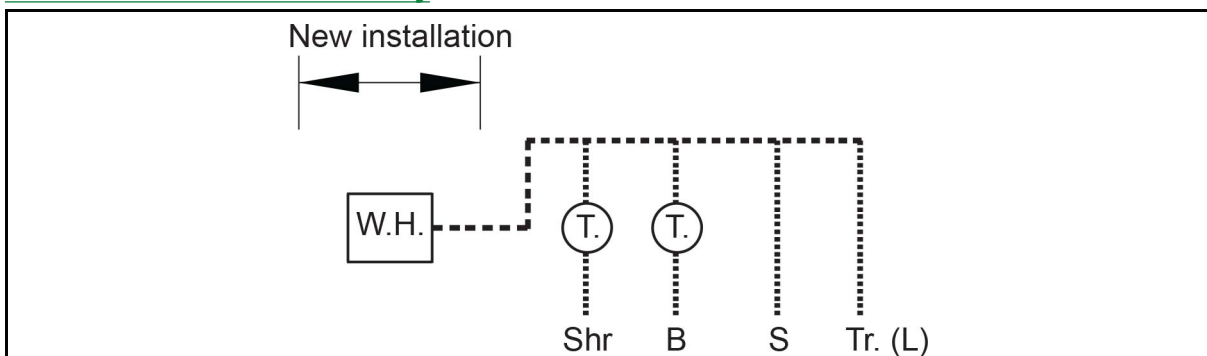
**B2.8(a)(ii)** (diagram 1)

**Installation of a heated water reticulation system only**



**B2.8(a)(ii)** (diagram 2)

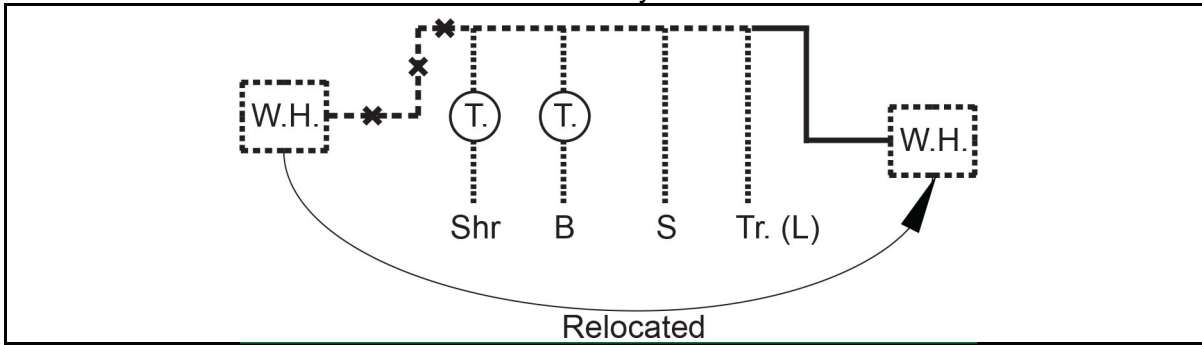
**Installation of a water heater only**



**B2.8(a)(iii)**

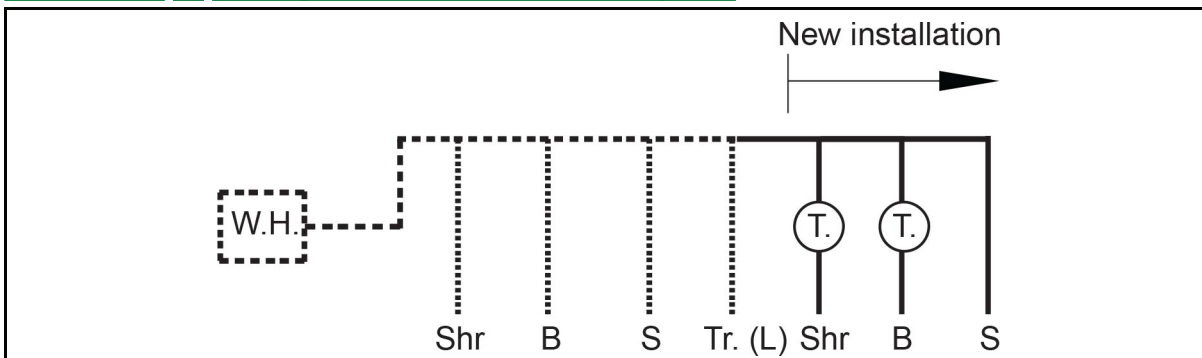
**Relocation of the existing water heater**

*Deemed-to-Satisfy Provisions*

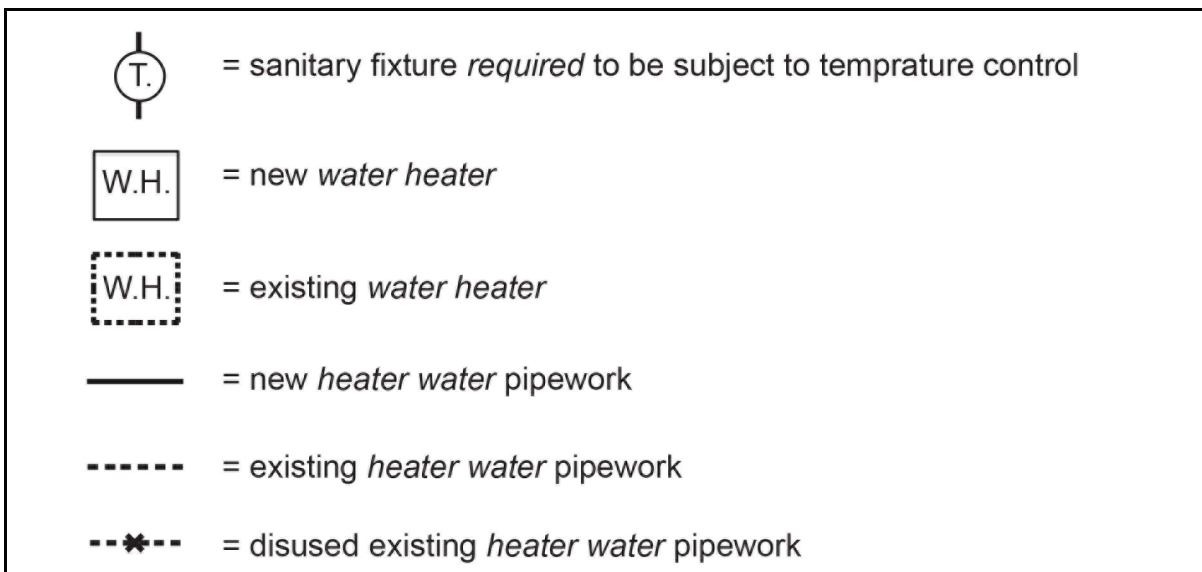


**B2.8(a)(iv)**

**Extension of an existing heated water reticulation system**



**Legend:**



Shr = Shower

B = Basin

S = Sink (e.g. kitchen sink)

Tr. (L) = Laundry trough

**Note:**

The diagrams shown in this explanatory information are indicative only and are not intended in any way to limit, extend or otherwise vary the application of the PCA.

## PART B3 NON-DRINKING WATER SERVICES

### Explanatory information:

#### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a *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

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

### B3.0 Scope Scope

This Part sets out the requirements for Performance Requirements BP3.1 to BP3.4 apply to 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~~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) prevent the transmission of sound from the *plumbing* system, fixtures and fittings into the building at a level exceeding the prevailing background sound level within that building; and
- (ed) avoid the likelihood of leakage or failure including uncontrolled discharges; and
- (de) allow ~~adequate~~adequate access for maintenance of mechanical components and operational controls; and
- (ef) 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~~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**.

## PART B4 FIRE-FIGHTING WATER SERVICES

### Explanatory information:

#### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a fire-fighting water installation; and
- (b) ensure that a fire-fighting water installation is suitable; and
- (c) conserve water and energy; and
- (d) safeguard the environment; and
- (e) safeguard public and private infrastructure; and
- (f) ensure that a fire-fighting water installation is designed and is capable of being maintained so that throughout its serviceable life it will continue to satisfy Objectives (a) to (e).

#### Functional Statement:

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

NSW B4

NT B4

Qld B4

### B4.0 **Scope** Scope

This Part sets out requirements for Performance Requirement **BP4.1** applies to 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~~adequate for the correct functioning of the equipment; and
- (c) avoids the likelihood of leakage or failure including uncontrolled discharges; and
- (d) provides ~~adequate~~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 C1 SANITARY PLUMBING SYSTEMS

## Explanatory information:

### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a 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

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.

## C1.0 Scope

~~This Part sets out the requirements for~~ *Performance Requirements CP1.1 and CP1.2 apply to* 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) prevent the transmission of sound from the sanitary *plumbing* system, fixtures and fittings into the building at a level exceeding the prevailing background sound level within that building; and
- (~~b~~c) avoid the likelihood of *loss* of *amenity* due to *blockage* and leakage; and
- (~~e~~d) avoid the likelihood of the ingress of inappropriate water, sewage, sullage, foul air and gases from the system into the building; and
- (~~e~~) provide ~~*adequate*~~adequate access for maintenance of mechanical components, operational controls and for clearing *blockages*; and
- (~~e~~f) avoid the likelihood of damage from superimposed loads, ground movement or root penetration; and
- (~~f~~g) avoid the likelihood of ingress of surface water, subsurface water or stormwater into the system; and
- (~~g~~h) provide for the effective and efficient use of water; and
- (~~h~~i) provide ~~*adequate*~~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*~~adequate for their use.

### CP1.3 Materials and Products

Materials and *products* used in sanitary *plumbing* systems must meet the requirements of [Part A2](#).

## PART C2 SANITARY DRAINAGE SYSTEMS

### Explanatory information:

#### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a 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

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.

### C2.0 Scope

~~This Part sets out the requirements for~~ *Performance Requirements CP2.1 and CP2.2* apply to 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~~; and
- (b) prevent the transmission of sound from the sanitary *drainage* system, fixtures and fittings into the building at a level exceeding the prevailing background sound level within that building; and
- (~~b~~c) avoid the likelihood of *blockage* and leakage; and
- (~~e~~d) avoid the likelihood of root penetration; and
- (~~d~~e) provide ~~*adequate*~~ adequate access for maintenance and for clearing *blockages*; and
- (~~e~~f) provide ventilation to avoid the likelihood of foul air and gases accumulating in the sanitary *drainage* and sewerage systems; and
- (~~f~~g) avoid the likelihood of damage from superimposed loads or ground movement; and
- (~~g~~h) avoid the likelihood of ingress of water, foul air and gases from the system into buildings; and
- (~~h~~i) 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~~k) avoid the likelihood of uncontrolled discharge; and
- (~~k~~l) avoid the likelihood of damage to existing buildings or site works; and
- (~~l~~m) 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**.

## PART D1 ROOF DRAINAGE SYSTEMS

### Explanatory information:

#### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a 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

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.

ACT D1

NSW D1

NT D1

Qld D1

SA D1

### D1.0 Scope

~~This Part sets out the requirements for~~ *Performance Requirements DP1.1 to DP1.4* apply to 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~~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~~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 D2 SURFACE AND SUBSURFACE DRAINAGE SYSTEMS

### Explanatory information:

#### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a 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

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.

ACT D2

NSW D2

NT D2

Qld D2

SA D2

### D2.0 Scope

This Part sets out the requirements for Performance Requirements DP2.1 to DP2.3 apply to 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~~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



## PART E1

## HEATING, VENTILATION AND AIR-CONDITIONING SYSTEMS

**Explanatory information:****Objective**

The Objective of this Part is to—

- (a) safeguard people from illness, injury or loss (including loss of amenity) due to the failure of a 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**

- (a) Mechanical services, plant and equipment used for heating, cooling and/or ventilation of a building must be adequate.
- (b) 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.

ACT E1

NSW E1

NT E1

Qld E1

SA E1

**E1.0 Scope**

~~This Part sets out the requirements for~~ Performance Requirement EP1.1 applies to the design, construction, installation, replacement, repair, alteration and maintenance of mechanical heating, cooling and ventilation systems.

**OBJECTIVE****E01**

~~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~~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 F1 ON-SITE WASTEWATER MANAGEMENT SYSTEMS

## Explanatory information:

### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of 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

*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.

ACT F1

NSW F1

NT F1

Qld F1

## F1.0 Scope

~~This Part sets out the requirements for~~ *Performance Requirements FP1.1 to FP1.5* apply to 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~~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~~adequate treatment and storage capacity for the volume of waste and frequency of disposal; and
- (b) with ~~adequate~~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~~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~~adequate access for maintenance; and
- (h) incorporate ~~adequate~~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).

## PART F2 ON-SITE LIQUID TRADE WASTE SYSTEMS

### Explanatory information:

#### Objective

The Objective of this Part is to—

- (a) safeguard people from illness, injury or *loss* (including *loss of amenity*) due to the failure of a 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

- (a) 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.
- (b) 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.

ACT F2

NSW F2

NT F2

Qld F2

### F2.0 Scope

This Part sets out the requirements for *Performance Requirements FP2.1 to FP2.4* apply to 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

**FF2.1**

- (b) avoids the likelihood of *blockage* and leakage; and
- (c) avoids the likelihood of foul air and gases entering buildings; and
- (d) provides ~~adequate~~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~~adequate treatment and storage capacity for the volume of waste and frequency of disposal; and
- (b) with ~~adequate~~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~~adequate vehicle access for collection, if necessary; and
- (d) with ~~adequate~~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 G1 CERTIFICATION AND AUTHORISATION

### DRAFTING NOTE

The changes shown below form part of a proposed revision that will be necessary to enable changes to the *WaterMark Certification Scheme* to be implemented as part of the 2016 edition of the PCA. The changes to the *WaterMark Certification Scheme* were agreed, in principle, by the Australian Building Codes Board, however, it should be noted that this reform is subject to final decision by the Building Ministers' Forum.

The provisions of **Section G**, which existed at PCA 2015, have been relocated to the *WaterMark Certification Scheme*, set out on the ABCB website at [www.abcb.gov.au](http://www.abcb.gov.au).

The reference to **Section G** has been retained to avoid changing the numbering of the current PCA from that of PCA 2015 and to provide an explanation of the *WaterMark Certification Scheme* and its relationship to the PCA.

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

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

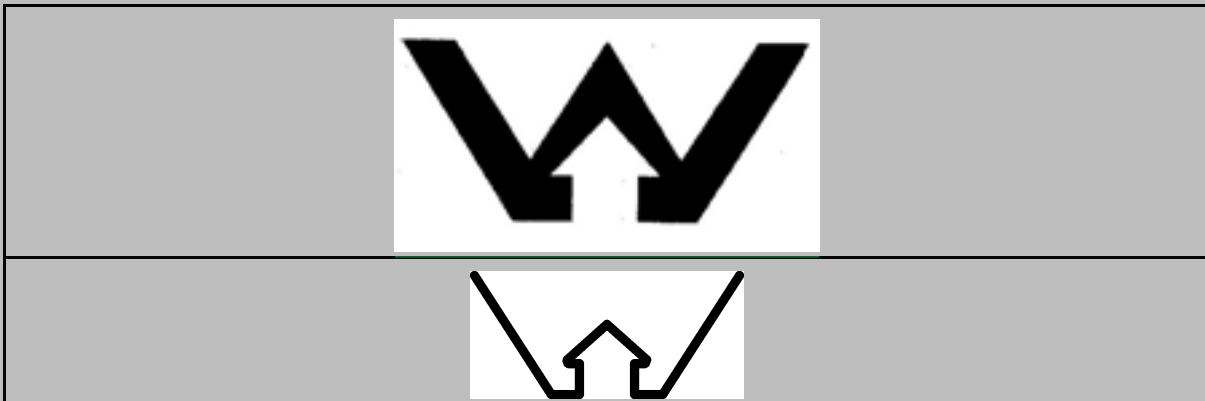
The PCA requires certain *plumbing and drainage materials and products* to be certified and authorised for use in a *plumbing or drainage installation*. These materials and *products* are to be certified through the *WaterMark Certification Scheme* and listed on the WaterMark Product Database.

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

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

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

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

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

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

**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	[Graphic:Graphics/v3_G1-5-4-1a_2011.tif] [Graphic:Graphics/v3_G1-5-4-1b_2011.tif] Product AS or WMTS Licence No.	Level 2 An <i>approved user</i> must meet the requirements of ISO Guide 67 System 1b, provide <i>warranty</i> and comply with licence conditions.
More than 4		Level 1 An <i>approved user</i> must meet the requirements of ISO Guide 67 System 5, provide <i>warranty</i> 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

[Graphic:Graphics/v3\_G1-5-3\_2014.tif]

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

## 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

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



## 6.0 Adoption of PCA 2016

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

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

<b>Administration</b>	<b>Adoption Date</b>
<a href="#">Australian Government</a>	<a href="#">1 May 2016</a>
<a href="#">Australian Capital Territory</a>	<a href="#">1 May 2016</a>
<a href="#">New South Wales</a>	<a href="#">1 May 2016</a>
<a href="#">Northern Territory</a>	<a href="#">1 May 2016</a>
<a href="#">Queensland</a>	<a href="#">1 May 2016</a>
<a href="#">South Australia</a>	<a href="#">1 May 2016</a>
<a href="#">Tasmania</a>	<a href="#">1 May 2016</a>
<a href="#">Victoria</a>	<a href="#">1 May 2016</a>
<a href="#">Western Australia</a>	<a href="#">1 May 2016</a>

## LIST OF AMENDMENTS - NCC 2016 - VOLUME THREE

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

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

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

### List of Amendments

Reference	Changes and Commentary
<b>General notes</b>	
The Objectives and Functional Statements in each Part of the PCA have been relocated to Explanatory information.	
The Scope clauses, located at beginning of each Part, have been amended to include reference to the Performance Requirements.	
<b>Introduction</b>	
The Introduction provisions have been amended as part of the initiative to increase the use of Performance Solutions. The changes emphasise that the NCC is a performance-based code.	
<b>Section A</b>	
Provisions in Part A0 have been amended, restructured and relocated as part of the initiative to increase the use of Performance Solutions.	
A0.1	A new provision has been inserted for 'Compliance with the NCC'. The existing provision 'Adoption' has been relocated to 'Introduction'.
A0.2	A new provision has been inserted for 'Meeting the Performance Requirements'. The existing provision 'Scope' has been relocated to 'Introduction'. Figure A0.2 has been inserted to replace Figure A0.3.
A0.3	A new provision has been inserted for 'Prescriptive Solutions'. The existing provision 'PCA Structure for Plumbing Services and Systems' has been amended and relocated to A0.2.
A0.4	A new provision has been inserted for 'Performance Solutions'. The existing provision 'Compliance with the PCA' has been amended and relocated to A0.1.
A0.5	The existing provision 'Assessment Methods' has been relocated to A0.5. The existing provision 'Meeting the Performance Requirements' is now covered by A0.2.
A0.6	The existing provision 'Defined terms' has been relocated from the 'Introduction' to A0.6. The existing provision 'Objectives and Functional Statements' has been deleted as a consequence of relocating the Objectives and Functional Statements into explanatory material.
A0.7	This provision has been deleted as a consequence of the inclusion of 'Prescriptive Solutions' in A0.3.
A0.8	This provision has been deleted as a consequence of the inclusion of 'Performance Solutions' in A0.4.
A0.9	This provision has been deleted as a consequence of the relocation of 'Assessment Methods' to A0.5.
A0.10	This provision has been deleted.
A1.1	The following definitions have been inserted, amended or deleted:

Reference	Changes and Commentary
Adequate	The defined term has been deleted, as a consequence of the deletion of the defined term 'Objective'.
Aged care building	A new defined term has been included as part of the new Deemed-to-Satisfy Provision B2.7. The definition has been aligned with that used in NCC Volume One.
Assessment Method	The defined term has been amended to include the new defined terms 'Performance Solution' and 'Prescriptive Solution' as a consequence of amendments to Part A0 and the deletion of the defined term Plumbing and Drainage Solution.
Approved user	The defined term has been deleted as part of the proposed changes to the WaterMark Certification Scheme.
Certification mark	The defined term has been deleted as part of the proposed changes to the WaterMark Certification Scheme.
Early childhood centre	A new defined term has been included as part of the new Deemed-to-Satisfy Provision B2.7. The definition has been aligned with that used in NCC Volume One.
Expert Judgement	The defined term has been amended to include the new defined terms 'Performance Solution' and 'Prescriptive Solution'.
Functional Statement	The defined term has been deleted, as it is no longer used in the NCC.
Health-care building	A new defined term has been included as part of the new Deemed-to-Satisfy Provision B2.7. The definition has been aligned with that used in NCC Volume One.
Heated water service	A new defined term has been included as part of the new Deemed-to-Satisfy Provision B2.8.
Objective	The defined term has been deleted, as the it is no longer used in the NCC.
Performance Requirement	The defined term has been amended to include the new defined terms 'Performance Solution' and 'Prescriptive Solution'.
Performance Solution	A new defined term 'Performance Solution' has been inserted.
Plumbing or Drainage Solution	The defined term has been deleted, as it is no longer used in the NCC.
Prescriptive Solution	A new defined term 'Prescriptive Solution' has been inserted.
Recognised testing laboratory	The defined term 'Recognised testing laboratory' has been replaced by the term 'Recognised testing authority'.
Recognised testing authority	A new defined term has been inserted to align with NCC Volume One and Two.
Specification	The defined term has been deleted as part of the proposed changes to the WaterMark Certification Scheme.
Temperature control device	A new defined term has been included as part of the new Deemed-to-Satisfy Provision B2.8.
Verification Method	The defined term has been amended to include the new defined term 'Performance Solution'.
Warranty	The defined term has been deleted as part of the proposed changes to the WaterMark Certification Scheme.

Reference	Changes and Commentary
	Water heater A new defined term has been included as part of the new Deemed-to-Satisfy Provision B2.8.
	WaterMark WaterMark Certificate of Conformity WaterMark Conformity Assessment Body WaterMark Certification Scheme WaterMark Exempt Products These defined terms have been deleted as part of the proposed changes to the WaterMark Certification Scheme.
	WaterMark Licence Watermark Schedule of Excluded Products WaterMark Schedule of Products New defined terms have been included as part of the proposed changes to the WaterMark Certification Scheme.
A1.2(a) and (e)	A1.2(a) and (e) have been amended to remove reference to the defined term 'specification'.
A1.4 and A1.7	Reference to 'PCA' replaced with 'NCC' as a consequence of the consolidation of the Introduction and General Provisions of the NCC to provide consistency across Volumes One, Two and Three.
A1.4(a)	A1.4(a) has been amended to remove reference to the defined term 'specification'.
A1.5 and A1.6	Amended to clarify that the NCC is a performance-based code.
A1.7(a)	New sub-clause inserted to align with the similar provision in NCC Volumes One and Two.
A2.1(b)	A2.1(b) has been restructured to clarify which materials and products can be considered fit for purpose under the PCA. This change forms part of the proposed changes to the WaterMark Certification Scheme.
A2.1(c)	A2.1(c) has been deleted to reflect the transfer of content from Section G as part of the proposed changes to the WaterMark Certification Scheme.
A2.1(d)	A2.1(d) has been amended to include a reference to A2.2. This change forms part of the proposed changes to the WaterMark Certification Scheme.
A2.1(e)	A2.1(e) has been deleted to reflect the transfer of content from Section G as part of the proposed changes to the WaterMark Certification Scheme.
A2.1(f)	A2.1(f) has been deleted to reflect the transfer of its content as part of the proposed changes to the WaterMark Certification Scheme.
A2.1(g) and (h)	A2.1(g) and (h) have been deleted as part of the proposed changes to the WaterMark Certification Scheme.

<b>Reference</b>	<b>Changes and Commentary</b>
A2.1 Explanatory information	New explanatory information inserted to outline the operation of A2.1 and its relationship to the WaterMark Certification Scheme.
Table A2.1	Table A2.1 has been deleted to reflect the transfer of its content as part of the proposed changes to the WaterMark Certification Scheme.
A2.2(a)	A new sub-clause has been inserted to specify the acceptable forms of evidence of suitability for materials and products which require certification and authorisation under the WaterMark Certification Scheme. All following subclauses have been renumbered.
A2.2(b)	A2.2(b) has been amended to specify forms of evidence of suitability for materials and products which do not require WaterMark certification, and for compliance with a Performance Requirement or Deemed-to-Satisfy Provision.
A2.2(b)(i)	A2.2(b)(i) has been deleted as it has been superseded by the insertion of new sub-clause A2.2(a).
A2.2(b)(ii)	A2.2(b)(ii) has been amended to include reference to a Registered Testing Authority.
A2.2(b)(iii)(B)	Amended to remove reference to the defined term 'specification'.
A2.2(b)(iv)	New provision inserted to allow the use of a certificate issued by a JAS-ANZ accredited product certification body under A2.2(b), to align with NCC Volume One and Two.
A2.2 Explanatory information	New explanatory information inserted to describe the different forms of evidence of suitability provided for under A2.2, and their respective purposes.
Table A3.1	The following references have been amended:  AS/NZS 4234      Amendment 3 of the 2008 edition of AS/NZS 4234 'Heated water systems – Calculation of energy consumption' has been referenced.  ABCB              The ABCB Manual for the Assessment of Risks of Plumbing Products has been deleted as part of the proposed changes to the WaterMark Certification Scheme.  ISO/IEC Guide 67          ISO/IEC Guide 67: 2004 'Conformity Assessment - Fundamentals of product certification' has been deleted as part of the proposed changes to the WaterMark Certification Scheme.
<b>Section B</b>	
BP1.2(b)	BP1.2(b) has been amended to remove references to 'undue noise' and the defined term 'adequate'.
BP1.2(c)	A new Performance Requirement has been inserted to include quantifiable criteria for determining the acceptable level of noise produced by a cold water service. All following subclauses have been renumbered.
BP1.2(f), BP1.3	BP1.2(f) and BP1.3 have been amended to remove reference to the defined term 'adequate'.
Part B1 Cross-volume consideration s	Amended to include reference to Part J6 of NCC Volume One regarding power supply to boiling and/or chilled water storage units.
BP2.2	BP2.2 has been amended to include reference to the defined term 'heated water service'.
BP2.3(b)	BP2.3(b) has been amended to remove references to 'undue noise' and the defined term 'adequate'.
BP2.3(c)	A new Performance Requirement has been inserted to include quantifiable criteria for determining the acceptable level of noise produced by a heated water service. All following subclauses have been renumbered.

<b>Reference</b>	<b>Changes and Commentary</b>
BP2.3(e), BP2.6	BP2.3(e) and BP2.6 have been amended to remove references to the defined term 'adequate'.
BP2.7, BP2.8	BP2.7 and BP2.8 have been amended to include reference to the defined term 'heated water service'.
BV2.1	BV2.1 has been amended to include reference to the defined term 'heated water service'.
BV2.2	BV2.2 has been amended to include reference to the defined terms 'heated water service' and 'water heater'.
BV2.3	A new Verification Method has been inserted to provide a means of quantifying the relationship between heated water delivery temperature and a specified maximum exposure time for skin for the purposes of reducing the risk of scalding, in accordance with BP2.2.
B2.1	B2.1 has been amended to include reference to new Deemed-to-Satisfy Provisions B2.7 and B2.8.
B2.2, B2.4	B2.2 and B2.4 have been amended to include references to the defined terms 'heated water service' and 'water heater'.
B2.7	A new Deemed-to-Satisfy Provision has been included to specify a 50 degree Celsius maximum delivery temperature for heated water outlets used for personal hygiene purposes, and the facilities in which this must be reduced to 45 degrees Celsius.
B2.8	A new Deemed-to-Satisfy Provision has been included to specify the situations when B2.7 is to apply for both new and upgraded heated water services.
Part B2 Cross volume considerations	Amended to include reference to Part J8 of NCC Volume One regarding energy consumption monitoring for water heaters.
BP3.3(b)	BP3.3(b) has been amended to remove references to 'undue noise' and the defined term 'adequate'.
BP3.3(c)	A new Performance Requirement has been inserted to include quantifiable criteria for determining the acceptable level of noise produced by a non-drinking water service. All following subclauses have been renumbered.
BP3.3(e), BP3.4, and BP4.1	BP3.3(e), BP3.4 and BP4.1 have been amended to remove references to the defined term 'adequate'.
<b>Section C</b>	
CP1.1(a)	CP1.1(a) has been amended to remove references to 'undue noise' and the defined term 'adequate'.
CP1.1(b)	A new Performance Requirement has been inserted to include quantifiable criteria for determining the acceptable level of noise produced by a sanitary plumbing system. All following subclauses have been renumbered.
CP1.1(e) and (i), CP1.2	CP1.1(e) and (i), and CP1.2 have been amended to remove references to the defined term 'adequate'.
CP2.1(a)	CP2.1(a) has been amended to remove references to 'undue noise' and the defined term 'adequate'.
CP2.1(b)	A new Performance Requirement has been inserted to include quantifiable criteria for determining the acceptable level of noise produced by a sanitary drainage system. All following subclauses have been renumbered.
CP2.1(e)	CP2.1(e) has been amended to remove references to the defined term 'adequate'.
<b>Section D</b>	

<b>Reference</b>	<b>Changes and Commentary</b>
DP1.2, DP1.4(f)	DP1.2 and DP1.4(f) have been amended to remove references to the defined term 'adequate'.
<b>Section E</b>	
EP1.1(d)	EP1.1(d) has been amended to remove references to the defined term 'adequate'.
<b>Section F</b>	
FP1.4, FP1.5	FP1.4 and FP1.5 have been amended to remove references to the defined term 'adequate'.
FP2.3, FP2.4	FP2.3 and FP2.4 have been amended to remove references to the defined term 'adequate'.
<b>Section G</b>	
Section G	The content of Section G, Part G1 has been relocated to the WaterMark Certification Scheme, set out on the ABCB website.
Part G1	New explanatory information inserted to provide an outline of the WaterMark Certification Scheme, and its relationship to the PCA.
<b>History of PCA Adoption</b>	
5.0	5.0 has been amended to reflect the adoption of the 2015 edition of Volume Three in Western Australia.
6.0	A new provision has been added in order to set out the adoption date of the 2016 edition of Volume Three in each State and Territory.