

Queensland Plumbing and Wastewater Code

Consultation Draft

CONSULTATION DRAFT



Queensland
Government

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(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

Introduction and General Provisions

Commencement

This Part—

- (a) commences on **xxxxx**; and
- (b) replaces the version of this Part published on 27 October 2017.

Introduction

Purpose of the Queensland Plumbing and Wastewater Code

The Queensland Plumbing and Wastewater Code (QPW code) sets out Queensland specific plumbing and drainage standards.

The QPW code:

- (a) adopts standards in relation to matters not covered by the Plumbing Code of Australia (PCA) (National Construction Code, Volume 3) or
- (b) imposes higher standards over and above the requirements of the PCA or
- (c) replaces requirements of the PCA.

Relationship with the Plumbing Code of Australia

The PCA provides a nationally uniform set of technical plumbing and drainage standards. Where there is any inconsistency between the PCA and the QPW code, or the QPW code has additional requirements, the QPW code prevails.

Part A0 Application

A0.1 Compliance with the QPW Code

The QPW code has been designed to provide performance solutions to meet the statutory requirements of the *Plumbing and Drainage Act 2018* (the Act).

Objectives and Functional Statements are informative only and are included to provide an aid to interpreting the *Performance Requirements*. Objectives are the community expectations and Functional Statements describe how to meet those community expectations.

Compliance with the QPW code is achieved by satisfying the *Performance Requirements*.

A0.2 Meeting the Performance Requirements

Performance Requirements have been developed to meet the Objectives and Functional Statements. The *Deemed-to Satisfy-Solutions* provide a simple and direct manner of meeting the *Performance Requirements*.

Where legislation requires compliance with the QPW code, compliance with the *Performance Requirements* is mandatory.

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

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

Part A1 Interpretation

A1.1 Definitions

Unless noted otherwise, all terms have the same meaning as defined in the *Plumbing and Drainage Act 2018*, *Plumbing and Drainage Regulation 2018* (the Regulation), PCA or a relevant Australian/New Zealand Standard.

If a definition given in the PCA or a relevant standard is inconsistent with the Act, the Regulation or the QPW code, the legislation (i.e. the Act or the Regulation) prevails, to the extent of the inconsistency.

Note: *Italicised* words within the body of the text, other than legislation titles, are defined below.

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

automatic switching device means a device that controls the *water supply* to plumbing outlets by automatically switching from *rainwater tank* water to the service provider's water supply when the water level in the *rainwater tank* is insufficient to meet the premises demand.

classes 1, 2, 3, 4, 5, 6, 7, 8, 9 and 10, in relation to a building, mean the definitions as specified in the PCA.

closed loop greywater treatment system means a system incorporating:

- (a) a source water *tank* containing *greywater* from appliance/s;
- (b) a *greywater treatment plant*;
- (c) provisions for make-up water;
- (d) provisions for bleed water to be disposed of to the sewer or approved discharge point; and
- (e) a treated water storage *tank* used to supply the treated water to appliance/s for re-use.

cold water service means *supply pipes* that supply cold water.

common area means an area of *common property*.

common property has the meaning provided in section 10 of the *Body Corporate and Community Management Act 1997*.

community titles scheme see section 10 of the *Body Corporate and Community Management Act 1997*.

complying valve means a device incorporated as part of the *water meter* which a *water service provider* can use to securely restrict the flow of water, either partially or fully, to the *meterable premises*, installed upstream of a *water meter*.

deemed-to-satisfy solution means a method of satisfying the *Performance Requirements*.

design life means the period during which the item is designed to meet the performance criteria. It is to be a minimum of 15 years.

drinking water means water intended primarily for human consumption but which has other domestic uses.

dry-vault toilet means a system for disposing human waste incorporating a chamber that—

- (a) receives and treats the waste; and
- (b) uses a biological degradation or dehydration process to treat the waste; and
- (c) does not use water other than water for cleaning or to help the biological degradation process.

efficient irrigation system means a fixed *outdoor irrigation system* consisting of a network of permanent piping connected to *emitters* which has been designed and installed to water a specific landscape area and will reduce the maximum output capacity.

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(b) replaces the version of this Part published on 27 October 2017.

emitter means a device of any kind fitted on a pipe which is operated under pressure to discharge water in a spray, mist or drip form. Common types of *emitters* include drippers, micro-sprayers, pop-up and gear-drive sprays and fixed sprinkler heads.

greywater means wastewater from a bath, basin, kitchen, laundry or shower, whether or not the wastewater is contaminated with human waste.

greywater diversion device means a device that—

- (a) diverts greywater to sanitary drainage or a land application area; and
- (b) if the device forms part of a greywater use facility—
 - (i) automatically diverts greywater from the facility to sanitary drainage if the facility does not work properly or at all; and
 - (ii) allows greywater from the facility to be manually diverted from the facility to sanitary drainage.

greywater treatment plant means a *plant* installed on premises for treating, on the premises, *greywater* produced on the premises.

greywater use facility means a facility consisting of—

- (a) a *greywater diversion device* and a *land application area*; or
- (b) *greywater treatment plant*, with or without a *land application area*.

heated water has the meaning given by the Plumbing Code of Australia.

land application area means an area where grey water, or effluent from an *on-site sewage treatment plant* is disposed of by subsurface or surface irrigation.

land application system means a land application area associated with an on-site sewerage facility or a greywater application area associated with a grey water use facility.

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

meterable premises means:

- (a) all *class 1* buildings;
- (b) each lot within a *community title scheme*, including the *common property*, in a *water service provider's area*;
- (c) the *sole-occupancy unit* of a *class 2, 4, 5, 6, 7 or 8* building in a *water service provider's area*;
- (d) each *storey* of a *class 5* building in a *water service provider's area* where the building consists of more than one *storey* and *sole-occupancy units* are not identified at the time of the building's plumbing compliance assessment.

on-site sewage facility means:

- (a) a facility, other than an environmentally relevant on-site sewage facility, installed on premises, that includes -
 - (i) an on-site sewage treatment plant on the premises for treating sewage produced on the premises; and
 - (ii) either
 - a. a land application area on the premises for disposal of the effluent produced by the on-site treatment plant; or
 - b. a tank for storing on the premises the effluent produced by the on-site treatment plant for later disposal off the premises by collection from the tank; or

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- (b) a facility, other than an environmentally relevant on-site sewage facility, installed on premises, that:
 - (i) includes an on-site sewage treatment plant on the premises for treating sewage produced on the premises; and
 - (ii) disposes of the effluent produced by the on-site treatment plant off the premises -
 - a. if the facility is installed only for testing purposes – into a sewage system; or
 - b. by common effluent drainage; or
 - c. in another way, stated in the permit issued for the installation of the facility; or
- (c) a dry-vault toilet or a chemical, composting or incinerating toilet.

on-site sewage treatment plant means a sewage treatment plant that is, or is designed to be part of an on-site sewage facility installed on premises.

on-site wastewater management system means a system installed on premises that receives and treats wastewater generated on the premises and applies the resulting effluent to an approved disposal or *land application area* (including an *on-site sewerage facility* but excluding a *greywater use facility*).

outdoor irrigation system means a network of permanent piping connected to *emitters* which has been designed and installed to water a specific landscape area.

performance requirement means a requirement which states the level of performance which a *Performance Solution* or *Deemed-to-Satisfy Solution* must meet.

performance solution means a method of complying with the *Performance Requirements* other than by a *Deemed-to-Satisfy Solution*.

plant means an *on-site sewage treatment plant* or a *greywater treatment plant*.

point of connection has the meaning given by the Plumbing Code of Australia.

premises group means the land comprised in two or more premises, all the owners of which have mutual rights and obligations under the *Body Corporate and Community Management Act 1997* or the *Building Units and Group Titles Act 1980* for their respective ownerships, and includes the *common property* forming part of—

- (a) if the premises are lots included in a *community titles scheme* under the *Body Corporate and Community Management Act 1997*—

- (b) if the premises are lots under the *Building Units and Group Titles Act 1980*—the parcel of which the premises form part.

public area means an area to which the public has lawful access, for example, a footpath.

rainwater tank means a covered *tank* or combination of covered *tanks* used to collect rainwater from a building roof.

secondary quality effluent means effluent quality which meets the performance and effluent compliance criteria treatment levels specified in AS1546.3.

secondary treatment plant means an on-site sewage treatment plant that produces effluent of a quality equal to or higher than secondary quality effluent.

site and soil evaluation report means an assessment of the legal constraints, financial consequences, and the risks to public health and the environment of an on-site sewage treatment facility or greywater use facility.

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sole-occupancy unit, in relation to a building, means

- (a) a room or other part of the building for occupation by one or a joint owner, lessee, tenant, or other occupier to the exclusion of any other owner, lessee, tenant, or other occupier, including:
 - (i) a dwelling; or
 - (ii) a room or suite of associated rooms in a building classified under the Building Code of Australia as a *class 2, 4, 5, 6, 7 or 8* building; or
- (b) any part of the building that is a *common area* or *common property*.

storey means a space within a building which is situated between one floor level and the floor level next above, or if there is no floor next above, the ceiling or roof above, but not-

- (a) a space that contains only-
 - (i) a lift shaft, stairway or meter room; or
 - (ii) a bathroom, shower room, laundry, water closet, or sanitary compartment; or
 - (iii) accommodation intended for not more than 3 vehicles; or
 - (iv) a combination of the above; or
- (b) a mezzanine.

supply pipe means a pipe for supplying water within premises.

tank means –

- (a) a covered tank, or combination of covered tanks used to collect stormwater and recycled water; or
- (b) a rainwater tank.

trickle top-up system means a system that provides an approved plumbing connection between the *water service provider's water supply* and a *rainwater tank* in accordance with AS/NZS 3500.1.

water meter means a device, and related equipment, for measuring the volume of water supplied to premises.

Example of equipment related to the device— a pulse meter associated with the device.

water service means

- (a) water harvesting or collection, including, for example, water storages, groundwater extraction or replenishment and river water extraction; or
- (b) the transmission of water; or
- (c) the reticulation of water; or
- (d) drainage, other than stormwater drainage; or
- (e) water treatment or recycling.

water service provider for premises, means the person registered under the *Water Supply (Safety and Reliability) Act 2008*, Chapter 2, Part 3, as the *water service provider* for retail *water services* for the premises.

A1.2 Referenced standards

- (a) A reference in a *Deemed-to-Satisfy Solution* 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 reference in a document listed in **Table A3.1** (primary document) to another document (secondary document) is a reference to the secondary and other documents as they existed at the time of publication 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 QPW code references a document, 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 Solutions*.

(a) commences on **xxxxx**; and

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A1.3 Compliance with all Performance Requirements

Plumbing and drainage systems must be so designed, constructed and installed that they comply with the relevant provisions of the PCA and the *Performance Requirements* of this code.

Part A3 Documents Adopted by Reference

A3.1 Schedule of referenced documents

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

Table A3.1 Schedule of referenced documents

Document No.	Date	Title	QPWC Clause
AS/NZS 1546	2008	Part 1: Septic Tanks	A1.1, F1.1, F1.2, F1.4
	2008	Part 2: Waterless composting toilets	
AS 1546	2017	Part 3: Secondary treatment systems	
	2016	Part 4: Domestic greywater treatment systems	
AS/NZS 1547	2012	On-site wastewater management	F.1, F.2, F1.3
AS/NZS 3500	2018	Part 1: Water Services	B1.1, B1.6, B2.1, C2.1, C2.2, C 2.3, F1.1, F1.2
		Part 2: Sanitary plumbing and drainage	
		Part 4: Heated Water	
AS 3565	2010	Part 1: Meters for cold and heated drinking and non-drinking water supplies – technical requirements	B1.2
		Part 4: Meters for water supply – In-service compliance testing	B1.2

A3.2 Restrictions and exclusions

The following Australian Standards are restricted in its application:

- AS/NZS 3500.1, section 6, applies only to—
 - the method of preventing the water supply to premises being contaminated or polluted; and
 - the method of jointing, supporting or fixing of the plumbing; and
 - the use of an item allowed under section (91 v37) in the *Plumbing Regulation 2018*
- AS/NZS 3500.4 the reference in clause 1.11.2 (b) to ‘all other situations’ applies only to class 1, 2, 3 or 4 buildings.

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

Section B – Water Services

Part B1 Cold Water Services

B1.0 Scope.

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

Objective

BO1 The objective of this Part is to –

- (a) safeguard people from illness, injury or loss (including *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 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 *water service provider's* infrastructure, property and the environment.

B1.1 Building supply pipes to water main standard

Performance Requirements

P1 Supply pipes for *premises* or a *premises group* must provide an efficient water supply for the premises or premises group.

Deemed-to-Satisfy Solutions

D1 The design and installation of supply pipes supplying *premises* or *premises group* must comply with:

- (a) AS/NZS 3500.1; or
- (b) design requirements for water infrastructure published by the Local Government or *water service provider* for the area.

Notes;

1. In this section - *premises group* includes a proposed *premises group*.
2. *Premises* mains (water) are not the property of the *water service provider*. *Water service providers* are not responsible for the maintenance of the *premises* mains downstream from the connection point to the *water service providers* water main.

B1.2 Water meters for new premises

Performance Requirements

P1 The *water supply* to a *meterable premises* must be fitted with a device (*water meter*) to measure the amount of water supplied to the premises.

P2 A *water meter* must be located so it is easy to read and maintain.

P3 A *water meter* must be properly maintained.

P4 The installation of a *water meter* includes a device which allows for the restriction of the flow of water from the *water service* to the *water meter*.

Deemed-to-Satisfy Solutions

D1 Each *water supply* to a *meterable premises* is to be fitted with a *water meter* which—

- (a) measures only the water supplied by that *water supply* to that *meterable premises*; and
- (b) is approved by the *water service provider*; and
- (c) complies with relevant requirements of the *water service provider* that may be imposed under the *Water Supply (Safety and Reliability) Act 2008*.

D2 The *water meter* is—

- (a) located so that it can be easily maintained and read from a *common area*, *common property* or *public area*; and
- (b) installed—
 - (i) in a *common area*; or
 - (ii) in *common property*; or
 - (iii) less than 3m from a property boundary within a *public area*.

D3 A *water meter* is to be maintained in accordance with AS 3565.4.

D4 The *water meter* has a *complying valve*.

B1.3 Water conservation for class 1 and class 2 buildings

Performance Requirements

P1 For lots which have a *class 1* or *class 2* building, in areas serviced by a *water service provider*, *outdoor irrigation systems* installed or replaced on or after 1 March 2009 must facilitate the efficient use of water.

Deemed-to-Satisfy Solutions

D1 For lots which have a *class 1* or *class 2* building, in areas serviced by a *water service provider*, *outdoor irrigation systems* installed or replaced on or after 1 March 2009 comply with Queensland Water Commission guidelines for an *efficient irrigation system* - 'Efficient Irrigation for Water Conservation' when:

- (a) connected to a *water service provider's water service*; or
- (b) connected to a *rainwater tank* where the *rainwater tank* has a continuity of supply from a *water service provider's water service* through either:
 - (i) a *trickle top-up system*; or
 - (ii) an *automatic switching device* where the off take is located downstream of the *automatic switching device*.

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

B1.4 Water storage tanks

Performance Requirements

P1 Water from a *tank* must not contaminate the *drinking water* within a *water service providers water supply system*.

Deemed-to-Satisfy Solutions

D1 Where a *tank* is installed, the *water service providers water supply system* is protected from the potential of back-flow, by the installation of—

- (a) a *back-flow prevention device* that complies with AS/NZS 3500.1; or
- (b) for a rainwater *tank*, a dual-check valve with an atmospheric port.

Note;

1. Approval may be required from the *water service provider* or local government authorising any connection or discharge of the water service provider's water supply to a tank used to store water obtained from another source.

B1.5 Integrated basins and Water Closet (WC) cisterns

Performance Requirements

P1 Installation of an integrated system must avoid the likelihood of contamination of any water supply service.

P2 Installations intended for personal hygiene must be provided with a suitable cold water supply.

Deemed-to-Satisfy Solutions

D1 An integrated system may only be installed in a residential building classified under PCA as a class 1a, 2, 4 or 10a building.

D2 Water supplied to the integrated system must be—

- (a) drinking water or rainwater; and
- (b) supplied to the basin directly from the system tap when the toilet is flushed.

D3 The basin must be attached to the top of the WC cistern.

D4 Water from the basin must be discharged directly into the WC cistern.

D5 Water from the WC cistern must be discharged into a sanitary drain through the toilet pan.

In this section—

integrated system means a toilet that has, as an integral part, a basin that discharges *greywater* from the basin directly into the WC cistern.

system tap means a tap connected to a supply pipe that supplies water to the integrated system.

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

Part B2 Heated Water Services

B2.0 Scope

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

Objective

BO2 The Objective of this Part is to—

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

Functional Statements

BF2.1 Sanitary fixtures, sanitary appliances and supply outlets provided with *heated water* must have a safe and adequate piped *heated water* supply.

BF2.2 The *heated water* supply must be conveyed through *plumbing* installations in a way that—

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

B2.1 Installation of solar heated water systems

Performance Requirements

P1 The collectors for a solar *heated water* system must be installed to maximise solar gain and minimise energy loss.

Deemed-to-Satisfy Solutions

D1 The collectors for a solar heated water system must be installed in accordance with AS/NZS 3500.4, subject to D2 of this Part.

D2 For applying AS/NZS 3500.4, the reference in clause 6.5.1.2 and 6.5.1.2 A (a) of the standard to '45°' is taken to be a reference to '90°'.

Notes:

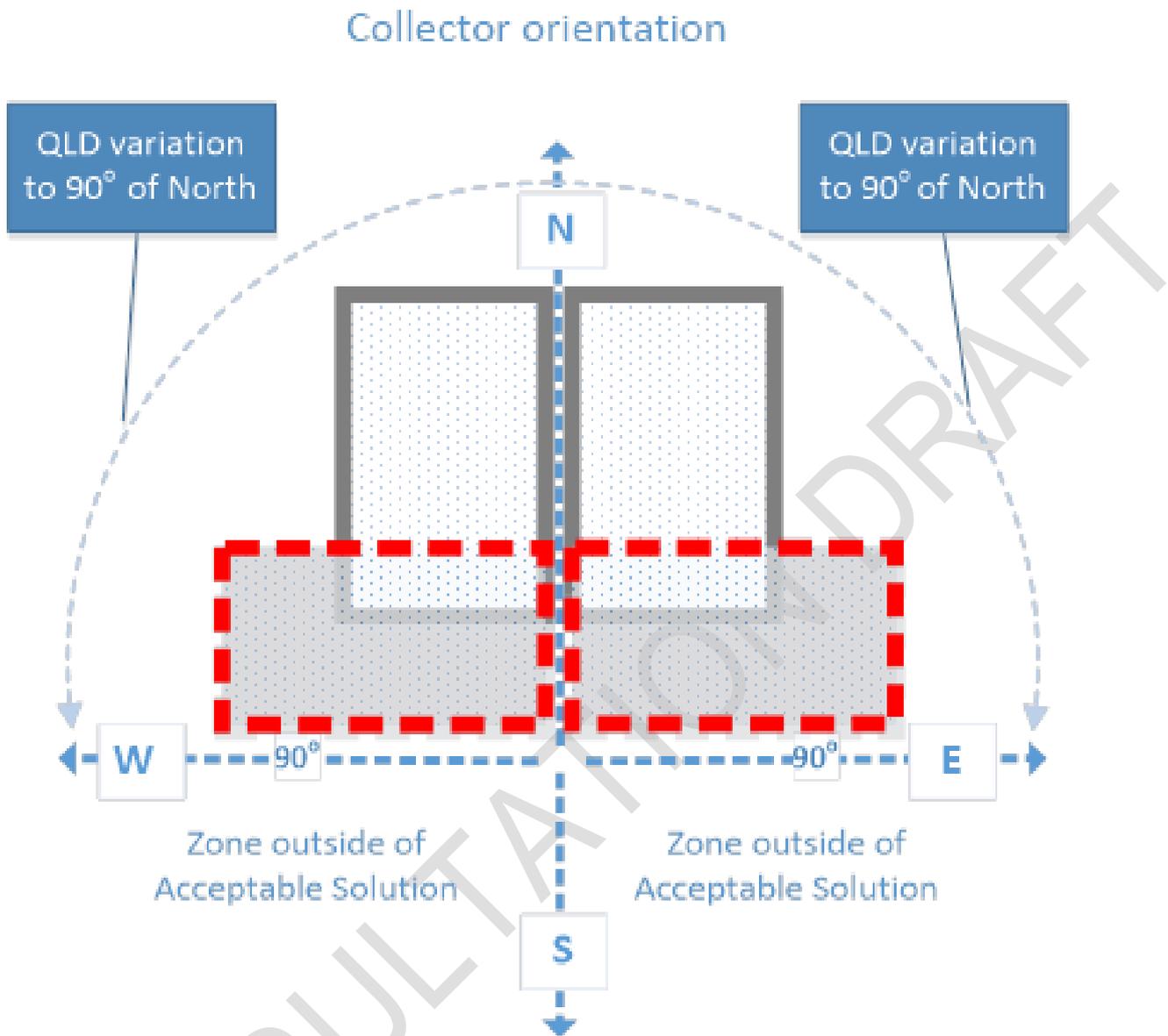
1 Clause 6.5.1.2 and 6.5.1.2 A (a) provides that collectors must be installed so they face no more than 45° east or west of true north.

2 Under D2 orientation of a collector panel for a solar heated water system will comply with the Deemed to Satisfy Solution requirement if it is installed within 90° east or west of true north, refer to Figure 1

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

Figure 1- Orientation of collectors



Part B3 Non Drinking Water Services

Refer to Part B3 of the PCA.

Part B4 Fire-Fighting Water Services

Refer to Part B4 of the PCA and *Building Act 1975*.

Part B5 Cross-Connection Control

Refer to Part B5 of the PCA.

Part B6 Rainwater Harvesting and Use

Refer to Part B6 of the PCA.

(a) commences on xxxx; and

(b) replaces the version of this Part published on 27 October 2017.

Section C – Sanitary Plumbing and Drainage Systems

Part C1 Sanitary Plumbing Systems

C1.0 Scope

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

Objective

CO1 The Objective of this Part is to –

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

Functional Statements

CF1.1 Sanitary fixtures and sanitary appliances must be provided with an adequate disposal system.

Part C2 Sanitary Drainage Systems

C2.0 Scope

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

Objective

CO2 The Objective of this Part is to –

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

Functional Statements

CF2.1 Sanitary fixtures and sanitary appliances must be provided with an adequate disposal system that does not impact adversely on occupants of the premises, property, the environment or the *sewerage service provider* infrastructure.

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

C2.1 Building sanitary drain to sewerage system standard

Performance Requirements

P1 Sanitary Drainage for *premises* or a *premises group* must provide efficient drainage for the *premises* or *premises group*.

Deemed-to-Satisfy Solutions

D1 The design and installation (of the main lines) of a sanitary drain supplying premises or premises group must comply with:

- (a) AS/NZS 3500.2; or
- (b) design requirements for sewer infrastructure published by the Local Government or *sewerage service provider* for the area.

Notes

1. In this section *premises group* includes a proposed *premises group*.
2. Main line means a drain that provides connection points for multiple buildings but doesn't include main drains or branch drains of a single premises.
3. *Premises* mains (sewer) are not the property of the *sewerage service provider*. *Sewerage service provider* are not responsible for the maintenance of the premises mains downstream from the connection point to the *sewerage service provider* sewer main.

C2.2 Connection of appliances and fixtures to grease arrestors

Performance Requirements

P1 The connection of an appliance or fixture used in a commercial premises that has the potential to discharge greasy waste to a sewerage system must be connected in such a way as to prevent grease entering the sewer.

Deemed-to-Satisfy Solutions

D1 Any appliance or fixture installed in a commercial premises that as part of the appliance or fixture discharge, may contain greasy waste water must connect to the sewerage system through a grease arrestor.

D2 An appliance or fixture discharging to the arrestor must be fitted with a fixture trap and vented in a way that is compliant with AS/NZS 3500.2.

D3 If the grease arrestor is collecting greasy discharges from floor areas, a 100mm floor waste must be connected to the inlet pipe of the arrestor.

C2.3 Requirements for grease arrestors

Performance Requirements

P1 Grease arrestors must be:

- (a) designed, constructed and installed to avoid the likelihood of grease entering the sewerage system and to prevent foul air or odours.
- (b) located in an accessible location and in a manner to avoid illness, injury and loss to people.

Deemed-to-Satisfy Solutions

D1 A grease arrestor must —

- (a) be of a size and design approved by the *sewerage service provider*;
- (b) be approved for installation by the *sewerage service provider*;
- (c) be installed in an accessible position to enable servicing, preferably outside a building, and as close as practicable to the appliance or fixtures the arrestor serves, and;

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

- (d) have a gas-tight lid suitable for load likely to be imposed and if the grease arrestor is in an area subject to motor vehicle traffic, a suitable gas-tight heavy-duty lid.

D2 The size of the grease arrestor outlet must be at least 100mm and fitted with a trap.

D3 Grease arrestors must be provided with inlet and outlet ventilation by means of two vent pipes each not less than 100mm in diameter.

D4 Inlet vents may be terminated as either;

- (a) a low-level vent complying with AS/NZS 3500.2 clause 3.9.2.3; or
- (b) a high-level vent complying with AS/NZS 3500.2 clause 6.9.4.

D5 Outlet vents must be terminated as a high-level vent complying with AS/NZS 3500.2 clause 6.9.4.

D6 The clean-out point for the arrestor must be accessible.

C2.4 Vent pipes to be covered

Performance Requirements

P1 A vent pipe must terminate at the upper end of a sanitary drain or plumbing installation in a manner that prevents the egress or ingress of animals, vermin or insects whilst still ensuring sufficient ventilation of the sanitary drainage system can occur.

Deemed-to-Satisfy Solutions

D1 A vent pipe must have a vent cowl over the termination point of the vent pipe that has the same effective ventilation capacity as the vent pipe.

D2 If the vent pipe is connected to an on-site sewage facility, the vent cowl must be a mosquito proof type of cowl.

Section D – Excessive Noise

Refer to Section D of the PCA.

Section E – Facilities

Refer to Section E of the PCA.

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

Section F1 – On-site Wastewater Management Systems

Part F On-site Wastewater Management Systems

F1.0 Scope

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

Objective

FO1 The Objective of this Part is to –

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

Functional Statements

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.

F1.1 On-site Wastewater Management Systems

Performance Requirements

P1 *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 risks associated with the dispersal of wastewater to the *land application area* are minimised; and
- (b) protect the environment by ensuring—
 - (i) surface and ground water are not polluted; and
 - (ii) soil productivity is maintained or enhanced; and
- (c) minimise the impacts on and maintain and enhance *amenity* by ensuring it has no adverse impact on—
 - (i) the built environment; and
 - (ii) persons on and nearby the premises, for the *design life* of the facility.

P2 *On-site wastewater management systems* that facilitate on-site storage, treatment, disposal or re-use of wastewater must be designed, constructed and installed—

- (a) with adequate treatment and storage capacity for the volume of waste and frequency of disposal;
- (b) with adequate size, strength and rigidity for the nature, flow rates, volume of wastes and/or waste products which must be processed;
- (c) with adequate vehicle access for collection, if required;
- (d) to avoid the likelihood of contamination of any *drinking water* supplies;
- (e) to avoid the likelihood of contamination of soils, ground water and waterways;
- (f) from materials which are impervious both to the waste for which disposal is required and to water;
- (g) to avoid the likelihood of foul air and gases accumulating within or entering into buildings;

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

- (h) to avoid the likelihood of unauthorised access by people to permit cleaning, maintenance, measurement and performance sampling;
- (i) to avoid the likelihood of surface water and stormwater entering the system;
- (j) to avoid the likelihood of uncontrolled discharge;
- (k) to permit the manufacturer's, model, serial number and design capacity to be easily identifiable after installation;
- (l) to minimise nuisance e.g. noise to the occupants of neighbouring properties; and
- (m) so that the installation throughout its design life will continue to satisfy the requirements of items (a) to (l).

Deemed-to-Satisfy Solutions

D1 Wastewater must be disposed of in a *land application system* which complies with **F1.3** of the QPW code.

D2 The size determination, design and installation of septic tanks must be in accordance with AS/NZS 1546.1.

D3 The size determination, design and installation of secondary treatment systems must be in accordance with AS 1546.3.

D4 The *on-site wastewater management system* must be operated and maintained in accordance with the designer's or manufacturer's instructions.

D5 The size determination, design, construction, installation, replacement, repair, alteration and maintenance of *land application systems* must be in accordance with AS/NZS 1547.

D6 The design, construction, installation, replacement, repair, alteration and maintenance of all sanitary plumbing and drainage systems must be in accordance with AS/NZS 3500.

F1.2 Grey Water

Performance Requirements

P1 A *greywater use facility* must be designed, constructed, installed and maintained in such a manner as to—

- (a) protect public health by ensuring that risks associated with the use and/or disposal of *greywater* to the *land application area* are minimised; and
- (b) protect the environment by ensuring—
 - (i) surface and ground water are not polluted; and
 - (ii) soil productivity is contained or enhanced.
- (c) minimise the impacts on and maintain and enhance the amenity by ensuring it has no adverse impact on—
 - (i) the built environment; and
 - (ii) persons on and nearby the premises for the design life of the facility.

P2 A *greywater use facility* must be designed, constructed and installed—

- (a) with adequate treatment and storage capacity for the volume of waste and frequency of disposal;
- (b) with adequate size, strength and rigidity for the nature, flow rates, volume of wastes and/or waste products which must be processed;
- (c) with adequate vehicle access for collection, if required;
- (d) to avoid the likelihood of contamination of any drinking water supplies;
- (e) to avoid the likelihood of contamination of soils, ground water and waterways;
- (f) from materials which are impervious both to the waste for which disposal is required and to water;
- (g) to avoid the likelihood of foul air and gases accumulating within or entering into buildings;
- (h) to avoid the likelihood of unauthorised access by people to permit cleaning, maintenance, measurement and performance sampling;
- (i) to avoid the likelihood of surface water and stormwater entering the system;
- (j) to avoid the likelihood of uncontrolled discharge;

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

- (k) to permit the manufacturer, model, serial number and designed capacity to be reasonably easily identifiable after installation;
- (l) to minimise nuisance e.g. noise to the occupants of neighbouring properties; and
- (m) so that the installation throughout its design life will continue to satisfy the requirements of items (a) to (m).

Deemed-to-Satisfy Solutions

D1 Either -

- (a) *greywater* is disposed of in a manner appropriate for its potential end use as listed in Appendix 1 - Table T1A, T1B or T1C; or
- (b) where *greywater* is disposed of to a *land application area*, it complies with **F1.3** of the QPW code.

D2 The size, determination, design and installation of greywater treatment plants must be in accordance with AS/NZS 1546.4.

D3 The size, determination, design, construction, installation, replacement, repair, alteration and maintenance of *land application systems* must be in accordance with AS/NZS 1547.

D4 The greywater use facility must be operated and maintained in accordance with the designer's or manufacturer's instructions.

D5 The design, construction, installation, replacement, repair, alteration and maintenance of all sanitary plumbing and drainage systems must be in accordance with AS/NZS 3500.

F1.3 Land Application Systems

Performance Requirements

P1 A *land application system* 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;
- (b) avoid the likelihood of the creation of unpleasant odours or the accumulation of offensive matter;
- (c) avoid the likelihood of the ingress of effluent, foul air or gases entering buildings;
- (d) avoid the likelihood of stormwater run-off entering the system;
- (e) avoid the likelihood of root penetration or ingress of ground water entering the system;
- (f) protect against internal contamination;
- (g) provide adequate access for maintenance;
- (h) incorporate adequate provisions for effective cleaning;
- (i) avoid the likelihood of unintended or uncontrolled discharge;
- (j) avoid the likelihood of blockage and leakage;
- (k) avoid the likelihood of damage from superimposed loads or ground movement;
- (l) provide ventilation to avoid the likelihood of foul air and gases from accumulating in the system; and
- (m) avoid the likelihood of contamination of any drinking water supplies;
- (n) avoid the likelihood of contamination of soils, ground water and waterways; and
- (o) ensure that the installation throughout its design life will continue to satisfy the requirements of items (a) to (n).

Deemed-to-Satisfy Solutions

D1 The design of a *land application system* must take into account a site and soil evaluation report produced as a result of an on-site inspection carried out in accordance with AS/NZS 1547.

D2 The *land application system* complies with the setback distances set out in the Appendix and AS/NZS 1547.

D3 The design of a *land application system* for a greywater treatment plant must take into account the estimated greywater generated for a premises outlined in Table T2 for sewered areas and Table T3 for unsewered areas.

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

D4 The *land application area* and any pump or motor are not located adjacent to bedrooms, living rooms or recreational areas of the premises or neighbouring properties.

F1.4 Composting, chemical and incinerating toilets

Performance Requirements

P1 Composting, chemical, and incinerating toilets must be designed, constructed, installed and maintained in such a manner as to:

- (a) protect public health by ensuring that risks associated with the dispersal of wastewater are minimised; and
- (b) protect the environment by ensuring -
 - (i) surface and ground water are not polluted;
 - (ii) soil productivity is maintained or enhanced; and
- (c) minimise the impacts on and maintain and enhance amenity by ensuring it has no adverse impact on -
 - (i) the built environment; and
 - (ii) persons on and nearby the premises, for the design life of the facility.

Deemed-to-Satisfy Solutions

D1 Composting, chemical, and incinerating toilets must be designed, constructed, maintained and installed:

- (a) with adequate storage capacity for the volume of waste and frequency of treatment of solids; and
- (b) with adequate ventilation in the entire structure and chamber; and
- (c) with as much natural lighting in the entire structure as possible; and
- (d) to avoid untreated waste coming into contact with any person, or spill from it, when it is being operated, maintained, removed or cleaned; and
- (e) to allow all waste liquids or spills to be contained and trapped, to prevent the liquids or spill being released outside the chamber when it is being operated, maintained, removed or cleaned; and
- (f) to withstand adverse effects from the environment including, for example, by heat, cold, humidity, gasses or sunlight; and
- (g) to ensure the entire structure or the chamber and any associated inspection and access covers and/or extensions are integrally sound, and exclude penetration by roots, and entry or infiltration of rain, groundwater, insects and vermin; and
- (h) to avoid the likelihood of a child falling through the pedestal opening; and
- (i) is finished in a way that provides a smooth surface internally and externally and free of recesses; and
- (j) to allow access when it is being maintained, contents removed or cleaned; and
- (k) to reduce the likelihood of unauthorised access by people; and
- (l) to ensure its controls and working parts are easily used and can't be accidentally disturbed; and
- (m) from materials which are durable and capable of withstanding normal operating conditions for the *design life* of the facility.

The structure must:

- a) comply with the minimum floor dimensions and minimum useable floor area set out in the Building Code of Australia.

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

The structure's door must be:

- (a) constructed from a material that is impervious, opaque, impact and corrosion resistant and washable; and
- (b) fitted to ensure privacy; and
- (c) able to be latched closed from the inside and outside.

The toilet must:

- a) have a toilet seat.

D2 Requirements specifically for composting toilets

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

D3 Requirements specifically for chemical toilets

The chamber must:

- (a) be designed in a way that ensures it will remain structurally sound when lifted, hoisted or transported, including when the toilet is full; and
- (b) if it is a freestanding unit, be fitted with suitable lifting loops or points to facilitate loading and off-loading from a delivery vehicle; and
- (c) if it is a freestanding unit, be anchored against ground movement or seismic loads.

The chamber floor must be:

- (a) constructed from a material that is impervious, impact and corrosion resistant and washable; and
- (b) unbroken and slip resistant; and
- (c) raised above ground level and resist lateral and uplift loads.

The chamber roof must be:

- (a) constructed from a material that is impervious, translucent, impact and corrosion resistant and washable.

The toilet must:

- (a) not include straight-drop or recirculation of contaminated material; and
- (b) be fitted with a water seal bowl incorporating a counterbalanced flap arrangement that, when closed, is capable of holding a minimal water seal.

The waste holding tank must:

- (a) be moulded in 1 piece from impervious and impact and corrosion resistant material; and
- (b) have a minimum capacity of 230L; and
- (c) have a suitable draw-off point through which the waste holding tank is emptied with a device to enable emptying of the tank without spillage; and
- (d) have a draw-off point that is secured so that it can't be tampered with or opened by a person, other than a person authorised by the local government for the area in which the toilet is located.

If it includes a urinal, the urinal must be:

- (a) suitably trapped into the waste holding tank; and
- (b) capable of being flushed with non-drinking water.

If it has a flushing mechanism, it must be:

- (a) effective; and
- (b) watertight; and
- (c) of durable quality; and
- (d) capable of providing a minimum of 200mL for each flush.

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

If it includes a non-drinking water tank it must be:

- (a) not less than 20% of the volume of the toilet's waste holding tank.

If the water tank is connected directly to a water supply it must be:

- (a) constructed with a reticulation that provides a 40mm air break between the top water level and the water inlet.

D4 Requirements specifically for incinerating toilets

The incinerating toilet must be designed in a way that ensures during the incineration cycle or normal operation; –

- (a) it is fitted with an automatic safety valve to stop incineration; and
- (b) the flue effluents are free from particulate matter; and
- (c) the flue effluents are free from faecal and urine odours; and
- (d) the flue pipe must be designed in a way that ensures it does not block the flue ways; and
- (e) ensures after it is installed it is obvious when the burner is alight; and
- (f) includes an ash removal tray that is easy to remove and clean; and
- (g) handles or knobs or parts that are removable, including, for example, the ash removal tray, to ensure a person removing the part has minimal contact with hot surfaces; and
- (h) the incineration cycle does not alter the function of any components of the toilet or cause permanent deterioration of the toilet's surface finishes or surroundings; and
- (i) the waste deposited onto the burning grid is reduced to ash in one firing cycle; and
- (j) it must be capable of maintaining a CO/CO₂ ratio of less than 0.02; and
- (k) ensures if the burning cycle is interrupted, the toilet is capable of beginning a further completing burning cycle when the lid is closed; and
- (l) ensures sufficient inlet air is available to achieve efficient and effective combustion.

If the incinerating toilet uses gas, it must be fitted with –

- (a) a way of testing the gas pressure; and
- (b) a cut-off switch that cuts off the gas supply when the pressure is more than the capacity for which the toilet has been designed; and
- (c) a flame safeguard system; and
- (d) a pilot turn-off provision; and
- (e) a manual shut-off valve that is upstream from the other controls on the pilot and main burner lines; and
- (f) fitted with a built-in draught diverter; and
- (g) its burner and ignition systems and bleed line terminations must be protected against heat damage; and
- (h) its burner and ignition systems must be interlocked with the lid in a way that ensures the interlock system cannot be bypassed; and
- (i) its burner and ignition systems and sensing devices must be fitted in a way that ensures they are stable.

Any insulation material in an incinerating toilet must:

- (a) be fixed in a way that ensures it can't slip or become dislodged from the toilet; and
- (b) not contain asbestos; and
- (c) be odour and fume free; and
- (d) be reactive to the application for which it is being used.

Appendix

Part 1 – Greywater Requirements

Table T1A – Potential end uses of greywater where a greywater treatment plant is installed on premises generating less than 3kL (<3kL) per day

Potential End Uses	Parameter	Effluent Compliance Value
End uses with a high level of human contact, including: <ul style="list-style-type: none"> Sanitary flushing Laundry use (cold water source to washing machines) Vehicle washing Path/Wall wash-down 	Biochemical oxygen demand (BOD5) Total suspended solids (TSS) Thermo-tolerant organisms (org/100ml) pH Turbidity Disinfection	≤10 mg/L ≤10 mg/L <10 6.5 – 8.5 <2 NTU (95%ile) / <5 NTU (maximum) Cl: 0.2 – 1.0 mg/L residual (where used as primary disinfection)
End uses with a medium level of human contact, including: Lawn and garden spray irrigation	Biochemical oxygen demand (BOD5) Total suspended solids (TSS) Thermo-tolerant organisms (org/100ml) pH Turbidity Disinfection	≤20 mg/L ≤30 mg/L <30 6.5 – 8.5 <5 NTU (95%ile) Cl: 0.2 – 1.0 mg/L residual (where used as primary disinfection)
End uses with a low level of human contact, including: <ul style="list-style-type: none"> Lawn and Garden manual bucketing, surface broadcasting, sub-surface irrigation 	Biochemical oxygen demand (BOD5) Total suspended solids (TSS) Thermo-tolerant organisms (org/100ml) pH Disinfection	≤240 mg/L ≤180 mg/L N/A N/A N/A

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

Table T1B – Potential end uses of greywater where a greywater treatment plant is installed on premises generating greater than 3kL (>3kL) per day

Potential End Uses	Parameter	Effluent Compliance Value
End uses with a high level of human contact, including: <ul style="list-style-type: none"> Sanitary flushing Laundry use (cold water source to washing machines) Vehicle washing Path/Wall wash-down 	Biochemical oxygen demand (BOD5) Total suspended solids (TSS) Escherichia coli (95% of samples taken over a 12 month period) Escherichia coli (maximum) pH Turbidity Disinfection (where chlorine is used as primary disinfection) (residual must be maintained at point of use for sanitary flushing and laundry use)	≤10 mg/L ≤10 mg/L <1 cfu/100ml 10 cfu/100ml 6.5 – 8.5 <1 NTU (95%ile) / 5 NTU (maximum) Cl: 0.2 – 1.0 mg/L residual
End uses with a medium level of human contact, including: <ul style="list-style-type: none"> Lawn and garden spray irrigation 	Biochemical oxygen demand (BOD5) Total suspended solids (TSS) Escherichia coli (95% of samples taken over a 12 month period) Escherichia coli (maximum) pH Turbidity	≤10 mg/L ≤10 mg/L <10 cfu/100ml <100 cfu/100ml 6.5 – 8.5 <5 NTU (95%ile)
End uses with a low level of human contact, including: <ul style="list-style-type: none"> Lawn and Garden drip or sub-surface irrigation (no pooling on surface) 	Biochemical oxygen demand (BOD5) Total suspended solids (TSS) Escherichia coli (95% of samples taken over a 12 month period) Escherichia coli (maximum)	≤20 mg/L ≤30 mg/L <100 cfu/100ml <1000 cfu/100ml

(a) commences on **xxxxx**; and

(b) replaces the version of this Part published on 27 October 2017.

Table T1C – End uses of greywater where a closed loop greywater treatment system is installed on premises

End Use	Parameter	Effluent Compliance Value
End uses in closed loop greywater treatment system with little or no human contact for use in a washing machine	Escherichia coli (maximum) *	10 cfu/100ml in any single sample. Less than 1cfu//100ml in any follow-up sample

* Note - Total dissolved solids, oil and grease and total suspended solids effluent compliance values for the operational functionality of the system may be conditioned as part of the testing approval.

Table T2 - Estimate of greywater generated by an average house in a sewerred area (3-bedroom home and four occupants)

Greywater flow	Litres/person/day
Daily greywater flow from bathroom	60
Daily greywater flow from laundry	35
Total for bathroom and laundry	95

Table T3 - Estimate of greywater generated by an average house in an unsewered area

Greywater flow total for bathroom and laundry	Bedrooms	Litres/day
1-5	3	600
6-7	4	840
8	5	960
9-10	6	1200

Part 2 – Setback Distances

Table T4 - Setback distances for subsurface land application area for a greywater treatment plant or an on-site sewage treatment plant

Feature	Horizontal Separation Distance (metres)		
	Up slope	Down slope	Level
Distance from the edge of trench/bed excavation or subsurface irrigation distribution pipework to the nearest point of the feature			
Property boundaries, pedestrian paths, footings of buildings, walkways, recreation areas, retaining wall footings.	2	4	2
In ground swimming pools.	6	6	6
In ground potable water tank.	6 *	6 *	6 *

*Note: For Primary effluent the distance from an in-ground potable water tank must be 15 metres.

Table T5 - Setback distances for surface irrigated land application area for a greywater treatment plant or an on-site sewage treatment plant

The separation distances are based on a spray plume with a diameter not exceeding 1 m or a plume height not exceeding 0.3 m above the finished surface level. Distances are given in metres from the edge of the irrigated wetted area to any point of the feature.

Feature	Horizontal Separation Distance (metres)
Property boundaries, pedestrian paths and walkways.	2
Water edge of a swimming pool.	6
Dwellings, recreation areas.	10*

* Note: For Primary effluent the distance from an in-ground potable water tank must be 15 metres.

Table T6 - Setback distances from a greywater diversion device

Feature	Setback Distance (metres)
Property boundaries, pedestrian paths, and driveways.	1.0
Footings of buildings.	1.5
Retaining wall footing.	1.0
In ground swimming pool surrounds.	1.0
In ground potable water tank.	6.0
Bores intended for human consumption.	50

**Table T7 - Setback distances for on-site sewerage facilities and greywater use facilities
(Protection of surface water and groundwater)**

Feature	Separation	Distance	(metres)
For onsite – see Appendix 1	Advanced Secondary	Secondary	Primary★
For greywater – see T1A or, T1B	High	Medium	Low
Top of bank of permanent water course; or Top of bank of Intermittent water course; or Top of bank of a lake, bay or estuary or, Top water level of a surface water source used for agriculture, aquaculture or stock purposes or; Easement boundary of unlined open stormwater drainage channel or drain. Bore or a dam used or likely to be used for human and or domestic consumption	10	30	50
Unsaturated soil depth to a permanent water table (vertically)	0.3	0.6	1.2

★ Note: Primary effluent typically has a BOD (Biochemical Oxygen Demand) of between 120 -240 mg/L and Total Suspended Solids of between 65 -180 mg/L.