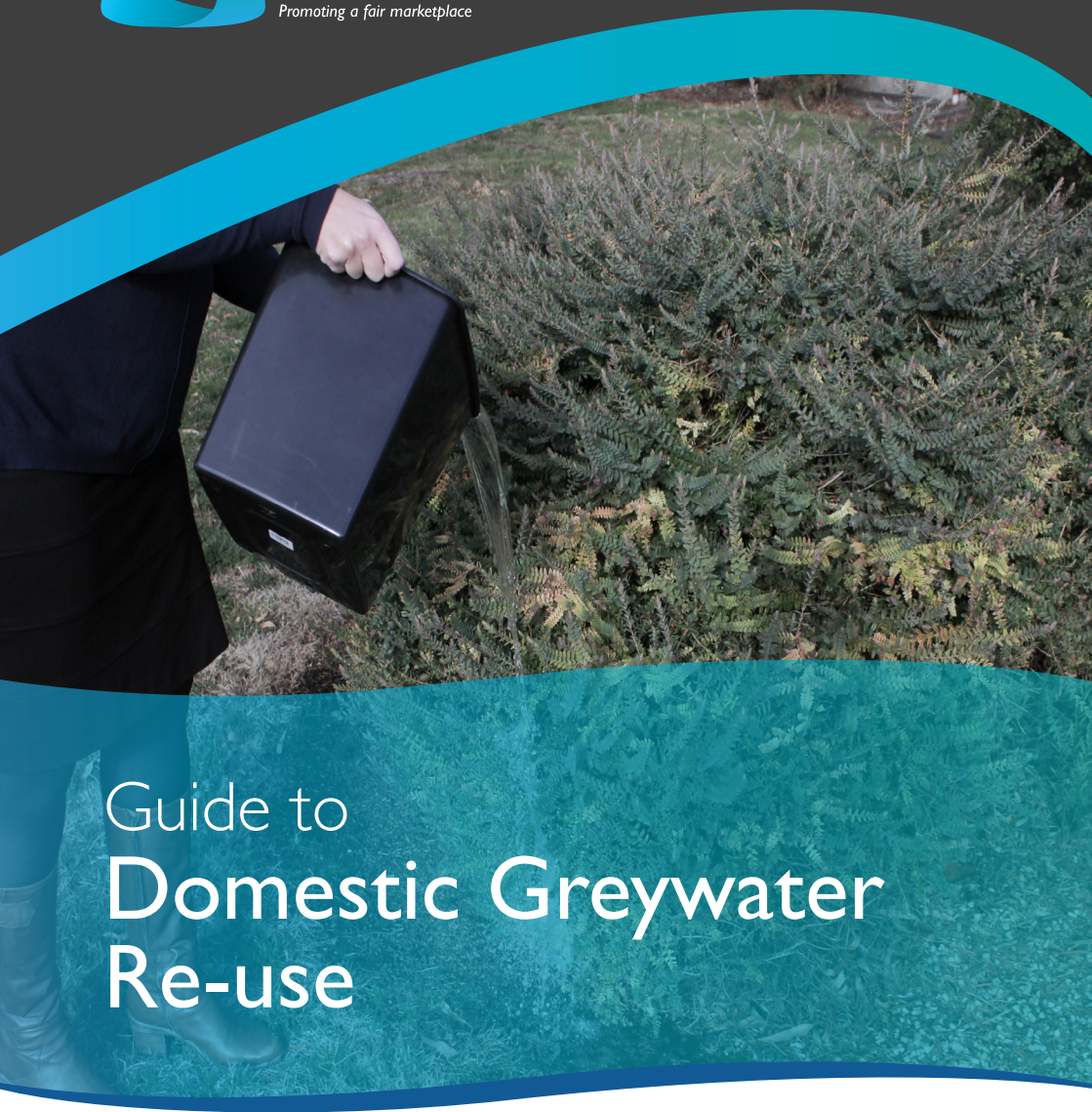




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Consumer, Building &  
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# Guide to Domestic Greywater Re-use

Consumer, Building and Occupational Services  
Department of Justice





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This Guide is a resource and reference document and is for general information only.

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## 1. Purpose

To provide guidance on acceptable methods for domestic greywater re-use or recycling in Tasmania.



## 2. Definitions

Term	Definition
AS/NZS1546.4	Australian & New Zealand Standard – On-site domestic wastewater treatment units Part 4: Domestic greywater treatment systems
BOD5	Greywater 5 day Biochemical oxygen demand measured in mg/L
E. coli	<i>Escherichia coli</i> bacteria measured as organism per 100mls
Greywater	Wastewater from hand basins, kitchen sink, dishwasher, bath, spa bath (excluding a spa pool), shower or laundry, but does not include toilet or urinal wastewater)
Greywater diversion device (GDD)	A device that collects and directs untreated greywater (excluding the kitchen sink or dishwasher) to a sub-surface irrigation area in dry weather and does not allow storage of greywater for more than 24 hours or treatment of greywater. A GDD may include a coarse screen filter to remove hair, lint and coarse particles. In wet weather untreated greywater is discharged to the sewer or on-site wastewater management system.
Domestic greywater treatment system	A system or device that collects, treats and disinfects greywater for re-use that has been tested in accordance with AS/NZS1546.4
mg/L	Milligrams per litre of greywater
Primary treated greywater	Greywater filtered by coarse screening and is used for greywater diversion
Secondary treated greywater (Level 3)	Wastewater complies with the criteria specified in AS/NZS 1546.4 Table 2.1 - (BOD5/SS/E. coli) 20/30/10
Secondary treated (Level 2)	Wastewater complies with the criteria specified in AS/NZS 1546.4 Table 2.1 - (BOD5/SS/E. coli) 10/10/10
Suspended solids (SS)	Suspended solids in greywater measured in mg/L
Tertiary treated greywater (Level 1)	Wastewater complies with the criteria specified in AS/NZS 1546.4 Table 2.1 - (BOD5/SS/E. coli) 10/10/1



### 3. Application

This Guide applies to buildings that are either connected to a reticulated sewerage scheme or on-site wastewater management system.

### 4. Guide principles

- 4.1 Greywater is a valuable resource which when re-used or recycled appropriately can reduce demand for potable water. It is not clean water and contains contaminants such as disease causing microorganisms, chemicals, hair, lint, skin, fats, oils and nutrients.
- 4.2 The quality of greywater will vary considerably depending on what is discharged into a plumbing fixture. A resident can significantly improve greywater quality by selecting detergents that are low in sodium, phosphorous, boron or disinfectants.
- 4.3 Storage of untreated greywater in a holding tank for more than 24 hours is not permitted as the water quality degrades and offensive odours may be emitted.
- 4.4 Greywater recycling or re-use must:
- Not create an unacceptable risk to the health of the building occupants, neighbouring residents or members of the public
  - Be applied in a sustainable manner without damaging soil structure or negatively impacting on vegetation
  - Not involve greywater being directly applied onto fruit or vegetables
  - Be applied within the boundaries of the property generating the greywater and be set back a sufficient distance (specified in the *Director's Guidelines - on-site wastewater management systems*) from the property boundaries to prevent run-off onto neighbouring properties or public land.
- 4.5 Only treated greywater (Level 1 or 2) from a greywater treatment system may be surface irrigated onto the land. Direct bucketing is not considered to be surface irrigation because the person applying the water can both control the amount of water applied (to prevent over irrigation) and avoid generating aerosols.

4.6 Greywater plumbing must:

- Not be cross connected with either potable water or stormwater plumbing
- Use appropriate lilac coloured pipe work and fittings in accordance with AS/NZS4130:2009 and AS/NZS3500 – Part 1 & 5; and
- Where necessary use appropriate backflow prevention and safety signage.

4.7 During periods of wet weather when greywater recycling is not appropriate, greywater must be diverted into a sewerage system or on-site wastewater management system (as appropriate).

Example of an on-site wastewater management system



## 5. Greywater re-use options

### 5.1 Selecting the appropriate re-use option

There are three categories of greywater re-use options

1. treatment systems
2. diversion
3. manual bucketing.

The type of option selected will depend on what the water is to be used for and how much land is available.

### 5.2 Greywater treatment systems

Greywater treatment systems must be designed and tested in accordance with AS/NZS1546.4 and be accredited by the Director of Building Control. *The Director's – Determination accreditation and maintenance of plumbing installations* specifies the accreditation process.

An overflow from the treatment system must be installed and connected to the sewer or on-site wastewater management system in the event of treatment system malfunction or during wet weather when re-use is not appropriate.

An assessment of site suitability for greywater land application must be completed in accordance with *the Director's Guidelines for On-site Wastewater Management Systems* to determine if a property is suitable for greywater re-use.

A plumbing permit application is required including a plumbing design (prepared by a licensed wastewater designer) specifying the greywater treatment system and irrigation area.

The permit will be assessed by the local Council Environmental Health Officer and plumbing surveyor. Greywater treatment systems require ongoing maintenance and must be serviced by a licensed contractor. A formal maintenance contract will be required.

### 5.3 Greywater diversion

Greywater diversion devices must have a WaterMark or otherwise be authorised for use by the Director of Building Control to ensure that the product has been tested and certified for use in Australia. Some retail or on-line outlets sell overseas non-compliant products.

Diversion devices must have an overflow connected to the sewer or to an existing on-site wastewater management system and be installed by a licensed plumber. The associated land application area must be designed by a licensed wastewater designer and a plumbing permit is required.

All diversion devices should have coarse screening for removal of solids.

Where greywater diversion is used in association with an on-site wastewater management system, that system must be sized for all wastewater. This will ensure the system has sufficient capacity when greywater is not being diverted.

### 5.4 Manual bucketing

If greywater is collected directly from the bath, basin or laundry and manually tipped onto established plants a plumbing permit is not required.

Obtain advice on vegetation that is suitable for greywater application from your local nursery.

Plumbing Regulation Advisory Note – March 2008 provides further information on manual bucketing of greywater.

## 6. Use of greywater

Appendix 1 outlines acceptable (✓) and unacceptable (✗) greywater re-use options.

## 7. References

- AS1546.4:2016 – On-site domestic wastewater treatment units Part 4: Domestic greywater treatment systems
- Code of Practice for the Re-use of Greywater in Western Australia, Department of Health Western Australia 2010
- Code of Practice: Onsite wastewater management, EPA Victoria 2013
- NSW Guidelines for Greywater Reuse in Sewered Areas, Single Household Residential Premises, Department of Water & Energy NSW 2008

## Appendix I – Domestic greywater recycling and re-use

Use	Tertiary Treated (Level 1)	Secondary treated (Level 2)	Secondary treated (Level 3)	Greywater diversion	Manual bucketing
Lawn watering (sub-surface)	✓	✓	✓	✓*	✗
Lawn watering (spray irrigation designated fixed pop up sprinklers)	✓	✗	✗	✗	✗
Irrigation (covered surface drip)	✓	✓	✗	✗	✗
Watering garden plants	✓	✓	✓	✓	✓
Watering fruit and vegetables	✗	✗	✗	✗	✗
Toilet or urinal flushing**	✓	✓	✗	✗	✗
Cold water supply to automatic clothes washing machine**	✓	✗	✗	✗	✗

\* must use appropriate sub-surface irrigation pipes for greywater that has only been screened not treated

\*\* greywater supply pipes and fittings must be lilac recycled water to prevent cross connections

## FURTHER INFORMATION

For more details about Domestic Greywater Re-use contact

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