

Greywater guidelines for plumbers

Greywater System Application Requirements for Residential Properties in Sewered and Unsewered Areas are outlined in this fact sheet.

Background

Greywater systems consist of all wastewater flows from the plumbing fixtures within the residence / building except for kitchen and toilet waste. Spa pools and swimming pools are also excluded.

A greywater system is part of an overall property wastewater management system. Information on the management of the **whole system** is required as part of the application.

Note that all greywater systems must also be able to divert to an operating permanent wastewater system (see below) attached to the dwelling unless otherwise authorised by the Department of Health.

Options for a permanent wastewater system disposal include:

- Connection to an SA Water sewerage system, a private or a council wastewater collection scheme.
- A septic tank (for a minimum of six persons) with effluent disposal by subsurface soakage or connection to a communal wastewater treatment system (CWMS) formerly known as septic tank effluent disposal schemes (STEDS).
- A composting toilet or other type of blackwater treatment / disposal system approved for installation in SA for blackwater in association with a suitable greywater disposal system.

Types of greywater systems

Temporary Systems

Manual bucketing onto lawn and garden areas using greywater from the bathroom or laundry, or temporary use of a hose manually fitted to the washing machine outlet is permitted subject to the advice provided in the fact sheet 'Manual bucketing & temporary diversion of greywater' on our [Onsite Systems](#) webpage.

Permanent Systems

Permanent greywater systems can be separated into two types:

- Domestic Greywater Diversion Devices, which divert greywater without storage or treatment, and
- Domestic Greywater Treatment Systems, which collect and treat greywater to a higher quality.

See Table 2 for an installation checklist for greywater systems.

Product approvals

Plumbing products that permanently divert greywater require *WaterMark* certification to be connected to SA Water's systems and the Department of Health (all areas) requires such products to be approved by them for the diversion, treatment, disposal or reuse of greywater before they are sold or installed in SA.

A list of products approved by the Department of Health and authorised by SA Water can be found on our [Approved Wastewater Products for marketing, sale and installation in SA](#) page.

Note that it is an offence to install a product which is not approved in SA.

- More information on the product approval process see 'Draft Guidelines for Greywater System Product Approvals' on our [Alternative Onsite Systems](#) webpage.



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Installation Approvals

An installation approval is required for approved devices that divert, treat or reuse greywater. Installation approvals issued by the relevant authority should incorporate:

- Specific product approval requirements where necessary.
- Installation and operational instructions provided by the product manufacturer.
- Any conditions specific for the site.

Section 36 of the Sewerage Act provides for an authorisation to be granted by SA Water to allow the discharge of some or all of the waste material covered by the application, to a system other than SA Water's sewerage system. This provision can be used when application is made to SA Water for the installation of a greywater reuse system. SA Water's primary interest under S36 is on permanent greywater diversion systems.

Note that all systems must be installed by a licensed plumbing contractor (including the reuse system). SA Water will also require that approval be obtained from the Department of Health for the design of the system.

Approvals required

In areas which are serviced by an SA Water sewerage system, approval must be obtained from SA Water and the Department of Health for the installation.

If the area is serviced by a community wastewater management system, then an exemption to disconnect flows from that scheme will also be required by the authority who owns the system. In most cases this is the local Council.

In areas not serviced by an SA Water sewer scheme and where there is no community wastewater management system such as a STEDS, the Department of Health is the relevant authority (this may be subject to change - contact the Department of Health on 8226 7100 for more information).

Table 1: Relevant Authorities

Agency	SA Water sewered area	Area served by Community Wastewater Management System e.g STEDS	On site wastewater system
SA Water	√	√	
Dept of Health*	√	√	√
Local Council		√	

* Note that this may change in 2008.

Application Form

An application form for **Installation of a Greywater System** has been developed to assist applicants in providing the required information for assessment. To download the form, 'Application to Install a Permanent Greywater System in South Australia' go to our [Alternative Onsite Systems](#) webpage.

The form lists all required information for installation of a greywater system.

More information can be obtained from Wastewater Management on (08) 8226 7100.

SA Water Requirements

If the system is to be installed in an SA Water sewered area, it is a legislative requirement that an authorisation from SA Water is received prior to installing the greywater system.

On receipt of the application, the relevant authority will arrange for the necessary details to be forwarded to SA Water in order to obtain the authorisation. SA Water will then:

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- Consider and assess the application to ensure it meets regulatory and legislative requirements;
- If appropriate, issue an authorisation to the property owner, which may include conditions applicable to the authorisation;
- Audit the property after installation at no charge to the applicant to ensure the device has been installed in line with the conditions of authorisation and current plumbing standards. The plumber must book this inspection with SA Water and upon completion of the work, provide SA Water with both a Certificate of Compliance of the kind issued by SA Water, and an “as constructed” drawing of the installation.

SA Water will arrange an encumbrance to be placed on the property in the form of a property advice letter once the greywater device has been installed and audited. This will ensure that prospective purchasers are made aware that a greywater system is installed on the property. The encumbrance advice will be sent to the applicant upon completion.

For more information contact SA Water on 1300 650 950.

Assessment details

The following points should be noted in assessing information for greywater device installation approval:

Table 2: Information required for an application

Requirement	Dept of Health	SA Water	Local council	Comments
Approvals (see Table 1)	√	√	√	Local council approval is required for areas with a communal system such as a STEDS.
Fee	\$172	No fee	No fee	
Site plan (see 'Assessment Details' and Appendix 1, pg 6)	√	√		Sub surface discharge is required for all diversion systems. See 'SA Water Requirements', pg 2 for treatment systems. See 'Setback Distances', pg 4.
Greywater Plumbing layout	√	√		Show all plumbing work to be carried out
Soil report (see 'Site Plan', pg 4)	√			This may not be required in all cases check with the Department of Health.
Application form (see 'Application Form', pg 2)	√			To download the form, 'Application to Install a Permanent Greywater System in South Australia' go to our Alternative Onsite Systems webpage.

Table 3: Information required post-construction

Requirement	Dept of Health	SA Water	Local council	Comments
SA Water Certificate of compliance	√	√		A Certificate of Compliance of the kind issued by SA Water is required to be provided to SA Water within 7 days of completing the work, for all works completed by the Licensed Plumbing Contractor.
“As Constructed” drawing	√	√		An “as constructed” drawing is also required to be provided to SA Water within 7 days of completing the work, for all works completed by the Licensed Plumbing Contractor.

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Type of product to be used

For diversion devices, which do not treat greywater before irrigation, the method of irrigation must be via a sub-surface system, with requirements specific to each product.

For greywater treatment systems, treated and disinfected greywater can be surface irrigated in accordance with the requirements of the SAHC Code (download from our [Onsite Systems](#) webpage)

- Waste Control Systems - Standard for the Construction, Installation and Operation of Septic Tank Systems in South Australia and
- Supplement B – Aerobic Wastewater Treatment Systems.

Subsurface irrigation is also allowed for greywater treatment systems provided a soil assessment is received which shows that the soils are suitable for subsurface irrigation and is designed in accordance with *AS/NZS 1547 Onsite Domestic Wastewater Systems*.

Site plan

The following information must be included in the plans submitted as part of the application (see Appendix A for an example of the required plan):

- A map showing the location of the property.
- A scaled plan of the property and all adjacent land and buildings and the use to which the property and nearby land is put.
- A site plan showing the location of the residence / building(s), boundaries, recreation areas, greywater treatment or diversion system, disposal area of final effluent and blackwater treatment and/or disposal unit where necessary.
- Details of site characteristics, such as topography, proximity to any watercourses, bores, marine environment, etc (see Appendix 1).

Setback distances

Treatment Unit/ Pump Sump

Installation of any greywater pump sump or treatment system module must take into account locations of other structures and site constraints. Setbacks from these units should comply with the following criteria unless the design is supported by an assessment from a suitably qualified engineer:

- 2.5 m from buildings and boundaries
- 10 m from any watercourse.

Irrigation System

Unless otherwise indicated in the product approval, installation of the greywater reuse component of the system must take into account the Department of Health requirements for setback distances outlined in SAHC Code 'Waste Control Systems - Standard for the Construction, Installation and Operation of Septic Tank Systems in South Australia' and 'Supplement B – Aerobic Wastewater Treatment Systems' (download from our [Onsite Systems](#) webpage). These include:

- *On a flat or gently sloping site, gradient less than 1.0% (1:100)*
 - 0.5 metres from boundaries,
 - 1.5 metres from buildings, including those erected on adjoining allotments.
- *On a sloping site, gradient greater than 1.0% (1:100)*
 - 0.5 metres from upslope boundary,
 - 1.5 metres upslope from lower boundaries,
 - 1.5 metres downslope from buildings,
 - 3.0 metres upslope from a lower cut face/bench,
 - 3.0 metres upslope from buildings, including those erected on adjoining allotments.

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- *From swimming pools including surrounding paved areas*
 - 3.0 metres on flat ground,
 - 3.0 metres downslope,
 - 6.0 metres upslope.
- *From any well, bore, dam used or likely to be used for human or domestic use*
 - 50 metres.
- *From a water source used for agricultural, aquacultural or stock purposes*
 - 50 metres.
- *From any watercourse identified on a current series 1:50 000 Department of Environment and Natural Resources topographic map and used or likely to be used for human or domestic use*
 - 50 metres
- *From the pool level for the River Murray and Lakes*
 - 100 metres and above the 1956 flood level.

Soil details

Greywater contains many impurities, including nutrients, nitrogen and phosphorus, which may harm the environment. Great care must be taken when designing land application areas to ensure that they are sustainable.

There are some contaminants which are not capable of being treated or degraded in the soil. Therefore, the land application area must be capable of adsorbing, absorbing, assimilating or treating the chemical impurities and nutrients without medium term and long term degradation of the soil, or the surrounding environment.

For permanent greywater systems, the relevant authority can seek a site and soil assessment from a geotechnical engineer or scientist.

Soil assessments can be arranged to coincide with other soil testing such as bore logs at the time of building to minimise the cost. The Yellow Pages provides a listing of appropriately trained and qualified persons.

The soil assessment must be site specific. It must state the suitability of the soils to accept subsurface irrigation with greywater, and recommend appropriate Effluent Percolation Rate (EPR) or Direct Irrigation Rate (DIR) of the soils on the site. The report should also provide recommendations on the total irrigation area required and any other conditions relevant to the sustainable reuse of greywater.

Further information

The following fact sheets and guidelines on the use and operation of greywater systems can be downloaded from our [Alternative Onsite Systems](#) webpage

Installation and operation of permanent greywater systems:

- Installation of Permanent Onsite Domestic Greywater Systems
- Draft Guidelines for Greywater System Product Approvals
- Public and Environmental Health Considerations: Greywater Use

Manual bucketing of greywater:

- Manual bucketing and temporary diversion of greywater

Setback distances (download from our [Onsite Systems](#) webpage):

- Supplement B – Aerobic Wastewater Treatment Systems

Information on detergents etc:

- www.lanfaxlabs.com.au/

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Contact

Wastewater Management Section – Department of Health

1st floor, Citi Centre Building

11 Hindmarsh Square, Adelaide SA 5000

Postal: PO Box 6, Rundle Mall, Adelaide SA 5000

Tel 08 8226 7100

Fax 08 8226 7102

ABN 97 643 356 590

Email: public.health@health.sa.gov.au

Web: www.health.sa.gov.au/pehs/environ-health-index.htm

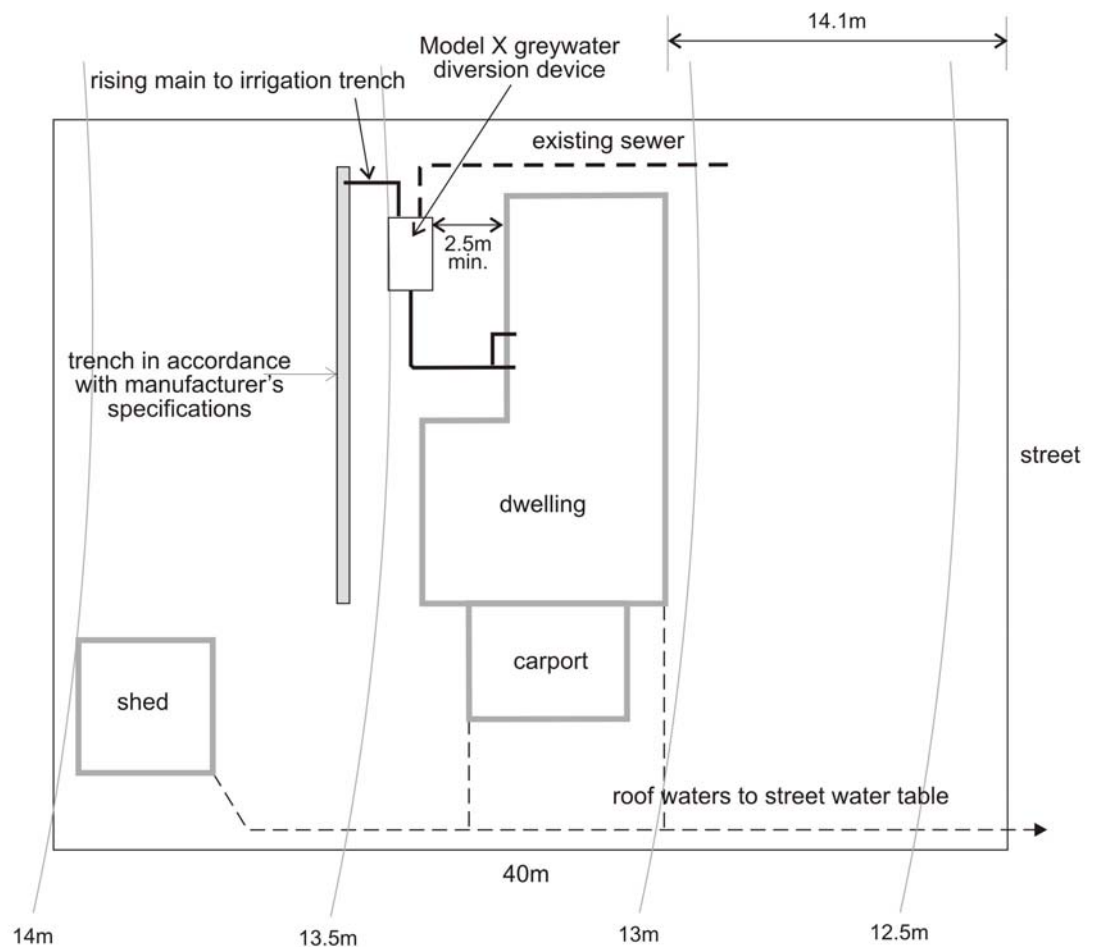
SA Water

Tel: 1300 650 950

Fax: 08 8410 0050

Email: cc@sawater.com.au

Appendix 1



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