

Building and Plumbing Newsflash 534

On-site sewerage facility requirements

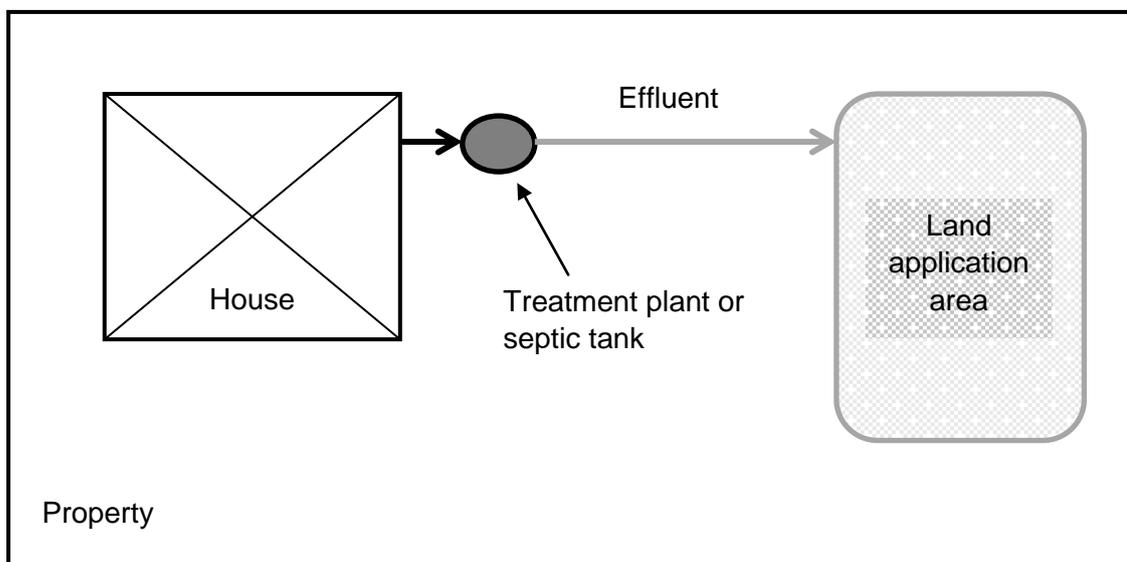
Purpose

To advise on the approval, installation, operation and service requirements for on-site sewerage facilities that are used for the treatment and disposal of effluent on properties in un-sewered areas.

Background

Many areas of Queensland are not connected to a sewage network. In these areas an on-site sewerage facility is used for treating, storing and disposing of sewage generated on the property. An on-site sewerage facility can comprise of:

- treatment plant—which uses mechanical, biological and/or filtration methods to treat effluent to an secondary or advanced secondary level, or
- septic tank—which uses biological methods to treat effluent to a primary level, and
- land application area—the approved part of the property where effluent is disposed. Depending on the level of treatment, this may be either above or below ground.



If effluent is not managed appropriately it can pose a serious risk to public health from micro-organisms that can cause illness, such *E. coli*, *Giardia* and hepatitis A. It is important that an on-site sewerage facility has all relevant approvals and is properly installed, operated and serviced to perform safely according to legal requirements and the manufacturer's specifications.

Application

Local government approvals

Where an on-site sewerage facility is to be installed, a plumbing application must be made to the local government. The requirements for an on-site sewerage facility are provided under the *Plumbing and Drainage Act 2003* (PDA), the Queensland Plumbing and Wastewater Code (QPW Code) and its referenced Australian Standards, these being:

- AS/NZS 1546.1:1998—On-site domestic wastewater treatment units—Septic tanks
- AS/NZS 1546.3:2001—On-site domestic wastewater treatment units—Aerated wastewater treatment systems, and
- AS/NZS 1547:2000—On-site domestic wastewater management.

An application for an on-site sewerage facility must be assessed by the local government in accordance with the QPW Code (Parts 1 and 3), which includes the siting of the facility and layout of the land application area.

In assessing a plumbing application for an on-site sewerage facility, the local government may also attach conditions to its approval. For example, this could include:

- the method of disposal for the treated effluent (above or below ground)
- the design of the land application area on the property where the wastewater is to be disposed based on the relevant soil type and its potential impact on surface and groundwater, and
- proximity to neighbouring properties and any sensitive environmental areas.

Chief executive approvals

In addition to the local government's approval, under the PDA a treatment plant must also have a chief executive approval issued by the Department of Housing and Public Works (department) before it can be installed. Generally, the chief executive approval is obtained by the manufacturer of each treatment plant model. The following types of treatment plants currently require a chief executive approval:

- secondary
- advance secondary, and
- advanced secondary with nutrient removal.

A chief executive approval is required for treatment plants designed to treat sewage for less than 21 equivalent persons. For treatment plants designed to service 21 or more equivalent persons approval must be obtained from the Department of Environment and Heritage Protection prior to installation.

A chief executive approval is not required for:

- a septic tank
- the method of disposal for the treated effluent
- the land application area, and
- chemical, composting or incinerating toilet or a dry-vault (waterless) toilet.

The department assesses the treatment plant's performance. To receive a chief executive approval, the manufacturer must undertake testing with an accredited testing agency and present the results to the department to demonstrate that the treatment plant meets the minimum water quality criteria specified under the QPW Code.

A list of approved treatment plants is available on the department's website via the link '[On-site](#)

[sewerage facilities](#)'. Local governments are advised to use this approved list for guidance when assessing a plumbing permit for an on-site sewerage facility that includes a treatment plant.

Compliance

Assessment requirements

The QPW Code and referenced Australian Standards sets performance criteria and acceptable solutions for the management, site and soil evaluation, design, installation and operation of an on-site sewerage facility.

The performance criteria accommodate both conventional and innovative designs and technologies. Compliance with the QPW Code's performance criteria is mandatory. Acceptable solutions are provided as a simple and direct manner of meeting the performance criteria.

When assessing an application for an on-site sewerage facility consideration is given by local government to the:

- type of treatment i.e. primary (via septic tank), secondary or advance secondary (via a chief executive approved treatment plant)
- volume and type of wastewater discharge to the treatment plant
- relevant design loading rate for the soil category (for example, via a permeability test), and
- appropriate layout of the land application area.

As the method of disposing of effluent to a land application area is largely determined by the standard of treatment, the QPW Code and referenced Australian Standards provide for the type of disposal method that can be used. For example, the installation of a septic tank which provides only for primary treatment of effluent will restrict the disposal to sub-surface options, such as absorption trenches and transpiration beds.

The standard of treatment will also affect other considerations, including minimum set-back distances which are stated in the QPW Code. For example, the distance from a watercourse or bore used for human consumption will be less for an on-site sewerage facility consisting of a treatment plant that treats effluent to an advanced secondary standard than it will be for an on-site sewerage facility incorporating a septic tank.

Alternative Solutions

Consideration of an alternative solution is permitted under the *Standard Plumbing and Drainage Regulation 2003* (section 8B). An alternative solution can be proposed by the manufacturer or applicant where it can be demonstrated that the on-site sewerage facility, including its method of disposal for the treated effluent and its land application area can still satisfy the relevant performance criteria of the QPW Code and is shown to be at least equivalent to the relevant acceptable solution.

A local government may consider and decide to approve an alternative solution. Each application must be assessed on its particular circumstances. In assessing an alternative solution the local government has the responsibility to ensure that all public health, safety and environmental risks are taken into account in its consideration of the application. The local government can also impose approval conditions, such as monitoring and testing requirements, and state set-back distances from neighbouring properties and sensitive environmental area to avoid any potential nuisances and avoid potential contamination to local waterways.

Installation

A person who installs an on-site sewerage facility, including a treatment plant or septic tank, must

hold a current licence in one of the three following licence classes, issued under the PDA:

- plumber and drainer's licence (NB. not 'plumbing only')
- drainer's licence, or
- restricted drainer's licence for on-site sewerage facility (with 'install' condition stated on the licence).

Operation

To ensure the on-site sewerage facility operates as designed and to protect public health, it must continue to comply with the QPW Code and its referenced Australian Standards, the manufacturer's specifications and, where applicable, the local government's approval conditions after it is installed. For example, the manufacturer's specifications may recommend the use of laundry detergents with low phosphorus, sodium and nitrogen content.

Servicing (maintenance)

It is the property owner's responsibility to maintain an on-site sewerage facility. It is essential that the facility is regularly maintained in accordance with the manufacturer's specifications and approval conditions.

Property owners are advised to check the manufacturer's specifications to confirm the frequency of maintenance of their on-site sewerage facility. For some facilities, this may involve the routine addition of chlorination as part of the manufacturer's servicing requirements by a licenced service agent. For a septic tank, this would include regularly checking the sludge level and having it pumped out by a suitably licensed operator.

A person who maintains a treatment plant must hold a current licence in one of the three following categories, issued under the PDA:

- plumber and drainer's licence with an on-site sewerage facility endorsement
- drainer's licence only with an on-site sewerage facility endorsement, or
- restricted drainer's licence for on-site sewerage facility (with 'maintain' condition stated on the licence).

It is the responsibility of the service agent to provide the local government and the property owner with an accurate written report on the condition of the treatment plant within one month of each maintenance service. A local government may undertake an audit of a treatment plant to determine the accuracy of their records and also the frequency of its servicing.

Penalties

Under the PDA, penalties apply for installers, service agents and property owners where the on-site sewerage facility does not comply with relevant requirements, including maintenance.

Installers

A penalty of up to \$18,785 per offence may apply where a person installs a treatment plant without an appropriate licence. A penalty of up to \$18,785 may apply for building or installing an on-site sewerage facility that does not have a chief executive approval (other than a septic tank).

Service agents

A penalty of up to \$4554 may apply to a person who services a treatment plant if they do not provide a written report on the condition of the plant to the local government within one month after servicing it. A penalty of up to \$11,385 may apply to a service agent that provides a report about the plant that is false or misleading.

Property owners

Where a property owner fails to comply with conditions of a compliance certificate for the treatment plant, such as regular servicing requirements or re-directing effluent to a non-approved discharge point, they may be subject to a penalty of up to \$18,785.

More information

Further information can be found via the link '[On-site sewerage facilities](#)' on the department's website at: www.hpw.qld.gov.au

Contact for further information

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