



# **Certificate of Accreditation**

## **Sewage Management Facility**

### **Domestic Greywater Treatment System**

*This Certificate of Accreditation is issued by the Secretary of the NSW Ministry of Health pursuant to Clause 41(1) of the Local Government (General) Regulation 2005.*

**System:**            *Rootzone model G700 DGTS*

**Manufacturer:** *Rootzone Australia Pty Ltd*

**Of:**                    *655 Menangle Road, Douglas Park, NSW, 2569*

*The Rootzone model G700 Domestic Greywater Treatment System as described in Schedule 1, has been accredited as a sewage management facility for use in single domestic premises in NSW. This accreditation is subject to the conditions of accreditation and permitted uses specified in Schedule 2.*

*Director, Environmental Health  
for Secretary (delegation PH335)*

**Issued:** *17 September 2019*

**Certificate No:** *DGTS010*

**Expires:** *31 December 2024*

## Schedule 1: Specification

### Rootzone model G700 Greywater Treatment System

#### General Description

The Rootzone model G700 greywater treatment system is designed to treat the greywater waste stream from a residential dwelling occupied by a maximum of 8 persons. The Rootzone model G700 greywater treatment system consists of the following components:

- For flat sites only, a pump well and a submersible pump needs to be provided at some point between the dwelling and the vertical bed. An emergency overflow pipe connects the pump well to the sewer.
- A vertical flow reed bed filter constructed in a ReIn Slimline 2100 litres rainwater tank (above or below ground). The reed bed contains:
  - a) At the base gravel to a depth of 900 mm;
  - b) Rootzone filter media to a depth of 1000 mm on top of a shade cloth overlaying the gravel;
  - c) Advanced seedlings of *Baumea articulate* reed species;
  - a) An emergency outlet pipe at the top of the gravel section drains by gravity to sewer. On a flat site a pump well and pump may be necessary;
- An effluent storage chamber or tank with a pump (the pump size is dependent on the end use of the treated effluent i.e. internal re-use and/or irrigation).
- A UV light disinfection unit located on the outlet of the pump external to the reed bed filter in a weatherproof enclosure.
- An irrigation pump is located in the pump well within the vertical flow reed bed. The final effluent after disinfection is pumped to an effluent storage tank or direct to irrigation.
- An alarm system for the pump(s) and/or UV disinfection unit.

Note: Reeds can only be planted from October to the end of February as advanced seedlings. However the system will function satisfactorily without the reeds before planting.

#### Treatment process:

- Where the vertical distance between the greywater outlet pipe from the dwelling and the top of the reed bed filter is less than half a metre, the raw greywater is collected in a pump well and then pumped into the distribution pipe at the top of the vertical flow reed bed filter. On a sloping site raw greywater flows directly from the dwelling to the reed bed filter.
- Greywater trickles vertical through the Rootzone filter media into the gravel storage area below.
- At the base of the gravel the treated effluent flows into a pump well from where the effluent is pumped to an external UV disinfection unit and then to the dwelling for internal re-use and/or to a land application system for irrigation. Disinfection is not required for sub-surface irrigation.

## Schedule 2: Conditions of Accreditation

### 1. General

- 1.1. The owner/occupier of the premises shall make an application to the local council to install a Rootzone model G-700 greywater treatment system as a waste management facility in accordance with Section 68, Part C of the *Local Government Act 1993* and Clause 28 of the *Local Government (General) Regulation 2005*.
- 1.2. The Rootzone model G700 greywater treatment system shall be supplied, constructed and installed in accordance with the design as submitted and accredited by the NSW Ministry of Health.
- 1.3. Any modification or variations to the accredited design of the Rootzone model G700 greywater treatment system shall be submitted for separate consideration and variation of the Certificate of Accreditation by the Secretary of the NSW Ministry of Health.

- 1.4. Each Rootzone model G700 greywater treatment system shall be permanently and legibly marked on a non- corrosive metal plaque or equivalent, attached to the lid with the following information:
  - The brand name of the system;
  - The manufacturer's name or registered trademark;
  - The month and year of manufacture.
- 1.5. The manufacturer shall supply the owner/occupier of the premises with an owner's manual, which sets out the care, operation, maintenance and on-going management requirements of the system.
- 1.6. The manufacturer shall provide the following information to each local authority where it is intended to install a greywater treatment system in their area once Ministry accreditation has been obtained. Alternatively the information may be uploaded to the Rootzone Australia website.
  - Statement of warranty
  - Statement of service life
  - Quality Assurance Certification
  - Installation Manual
  - Service Manual
  - Owner's Manual
  - Service Report Form
  - Engineering Drawings on A3 format
  - Detailed Specifications
  - A4 Plans
  - Accreditation documentation from NSW Health.

## **2. Installation and Commissioning**

- 2.1 The local council should require that on completion of the installation of the Rootzone model G700 greywater treatment system, the system is inspected and checked by the manufacturer or the manufacturer's agent. The manufacturer or the agent is to certify that the system has been installed and commissioned in accordance with its design, conditions of accreditation and any additional requirements of the local council.
- 2.2 The local council should require that all electrical work must be carried out by a licensed electrician and in accordance with the relevant provisions of AS/NZS 3000.

## **3. Maintenance**

- 3.1 The local council shall require the owner/occupier of the premises to enter into an annual service contract with Rootzone Australia Pty Ltd or a service contractor authorised by Rootzone Australia Pty Ltd and registered with the local council as an authorised person to carry out maintenance work.
- 3.2 The Rootzone model G700 greywater treatment system shall be serviced at three monthly intervals in the first year after installation and then annually thereafter in accordance with the details set out in the owner's and service manual.
- 3.3 At each service a check shall be made of all mechanical, electrical and functioning parts of the system including:
  - The condition of the pump well and sump pump,
  - The operation of the alarm system and UV disinfection unit,
  - The growth of the reed species on the vertical reed bed,
  - The operation of the effluent storage tank and pump.
- 3.4 A service report sheet, in triplicate, shall be completed for each service. The original shall be given to the owner, the duplicate forwarded to the local council and the triplicate retained by the service contractor.

#### 4. On-going Management

4.1 The owner's manual prepared by the manufacturer shall contain a plan for the on-going management of the Rootzone model G700 greywater treatment system. The plan shall include details of:

- the treatment process,
- procedures to be followed in the event of a system failure,
- emergency contact numbers,
- maintenance requirements,
- inspection and sampling procedures to be followed as part of the on-going monitoring program developed by the local authority.

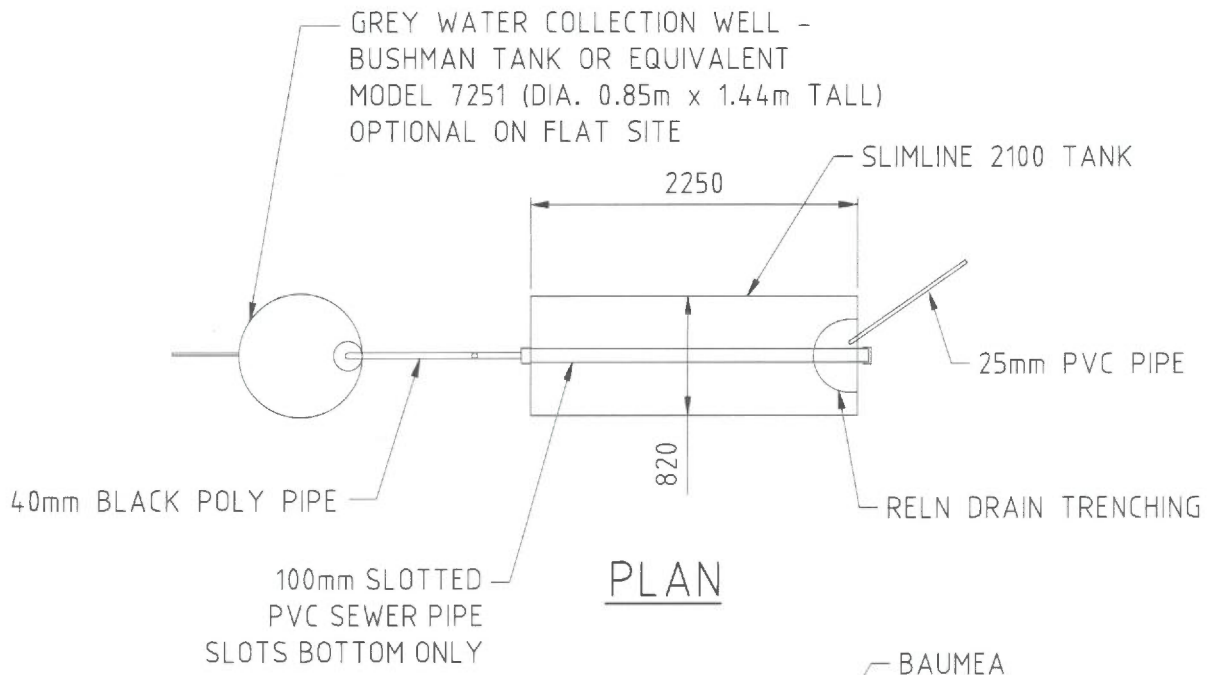
4.2 Effluent from the Rootzone model G700 greywater treatment system taken in any random grab sample shall comply with the following standard:

- |                            |                         |
|----------------------------|-------------------------|
| • BOD <sup>5</sup>         | less than 20 mg/L       |
| • SS                       | less than 20 mg/L       |
| • Thermotolerant coliforms | less than 10 cfu/100 ml |

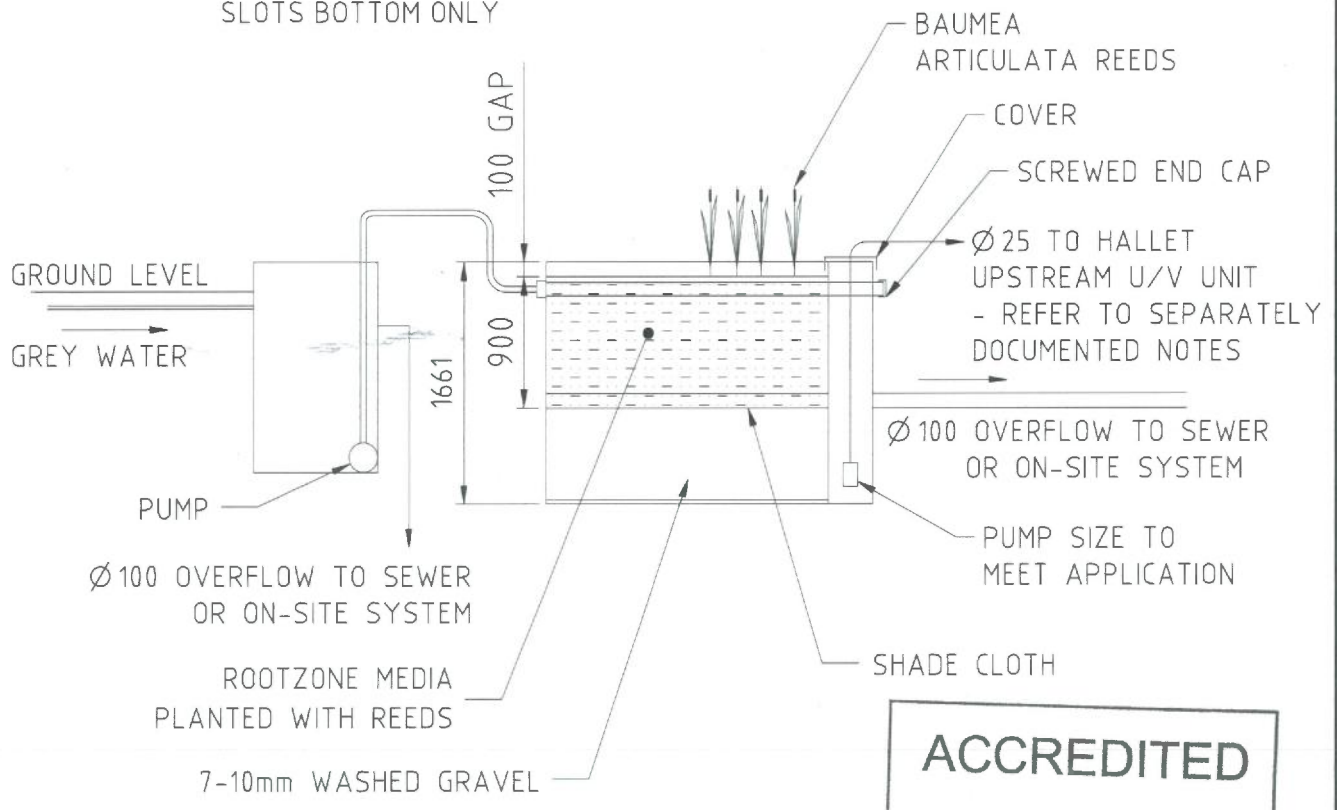
#### 5. Permitted uses

5.1 The effluent from the Rootzone model G700 greywater treatment system is suitable for re-use for the following purposes:

- toilet flushing;
- cold water supply to washing machine;
- garden purposes by irrigation of a type approved by the local council.



PLAN



ELEVATION

**ACCREDITED**  
 17 SEP 2019  
 NSW MINISTRY OF HEALTH

AMENDMENTS	TITLE: ROOTZONE GREY WATER TREATMENT MODELS G700	SCALE: 1:50	DRAWN: I. CARDILLO
		DATE: 15.02.04	CHECKED:
		DRAWING No. 05023-01	

