



Certificate of Accreditation

On-Site Wastewater Management System

This Certificate of Accreditation is hereby issued by the Director of Building Control acting pursuant to Section 18(1) of the *Building Act 2016* (accreditation of products) and the National Construction Code as applicable.

System:	Green Loo GL 90 (3EP Max.) Waterless Composting Toilet System
Manufacturer or Supplier:	Green Loo Pty Ltd, , ACN 624 421 156
Of:	95/54 Gemvale Road, Reedy Creek, Queensland 4227

This is to certify that the Green Loo GL 90 Waterless Composting Toilet system, (the 'system') described in Schedule 1, is accredited as an on-site wastewater management system in single dwellings (within plumbing installations in Tasmania). This accreditation is subject to the conditions of accreditation and permitted uses specified in Schedule 2, and in accordance with the *Building Act 2016*.

Peter John Graham
Director of Building Control
Consumer, Building and Occupational Services

Date of Issue: 2 October 2020

Certificate Number: DOC/20/84144

This Certificate of Accreditation is in force until **2 October 2025**, unless withdrawn earlier at the discretion of the Director of Building Control.

Schedule I: Specification

Informative

Green Loo Waterless Composting Toilet System GL90

General Description

The Green Loo composting toilet systems are designed to receive and treat human waste and reduce such wastes after a composting period into an innocuous waste that is capable of being disposed of from within the premises without nuisance or risk to health.

Specification

The Green Loo GL 90 is a split system composting toilet system comprised of a toilet pedestal housed inside the toilet room, and 2 removable composting containers, housed below floor. There is a ventilation pipe and a liquid waste drainage device attached to the in-use composting container.

The composting process inside of the Green Loo is equipped with a convenient drain tube to drain excess liquid not evaporated to be dispersed via a gravel filled dispersal trench. Any excess liquid which is not used up in the composting process or evaporated through the vent system is drained out through the absorption trench attached to the back of the unit.

An air venting system is attached to the rear of the Green Loo system to prevent any foul odours from developing. This ventilation system consists of a 100 mm PVC pipe, along with a continuous running fan to increase air flow. This fan can be powered by either mains electricity or solar energy with the aid of solar panels (not included).

The composting capacity and usage of the Green Loo model is expressed in the following table with a diagram of the system shown below.

Model	Dimensions	Composting Container	Equivalent full time adult residential use	Estimated Composting Time
GL90	600 l X 600 w X 450 h	90 Litres	3	3 months (minimum)

Approximate Energy Consumption

Model	Electrical Equipment	Rating	Daily average hours of operation	Consumption, kWh/year	Estimated annual cost at @ \$0.2659/kWh As at July 2020, Aurora Energy tariff 3 l
GL90	IP68 fan	3 W	24	26.3 kWh	\$7

Schedule 2: Conditions of Accreditation

I. Definitions

Where included in this Certificate of Accreditation and Schedules:

AS/NZS 1547 means the Joint Australian/New Zealand Standard *AS/NZS 1547:2012 On-site domestic-wastewater management*

AS/NZS 1546.2 means the Joint Australian/New Zealand Standard *AS/NZS 1546.2:2008 On-site domestic wastewater treatment units, Part 2: Waterless Composting Toilets*

AS/NZS 3000 means the Joint Australian/New Zealand Standard *AS/NZS 3000 Wiring rules*

AS/NZS 5667 means the Joint Australian/New Zealand Standard *AS/NZS 5667.1:1998 Water quality – Sampling, Part 1: Guidance on the design of sampling programs, sampling techniques and preservation and handling of samples*

BOD5 means 5-day Biochemical Oxygen Demand

Council means the Municipal Council having jurisdiction

Commissioned means when the test results from a NATA Certified Laboratory show that the water quality requirements for the system have been met and all pre-commissioning tests have been carried out in accordance with AS/NZS 1547 on all associated equipment including the land application system

Designer means a person who is accredited under the *Building Act 2016* or a *Plumber* who has a speciality in the area of designing on-site waste water management system installations

Director means the Director of Building Control

EC means electrical conductivity

E. coli means *Escherichia coli* of the family *Enterobacteriaceae* which is a bacterium used in public health as an indicator of faecal pollution

g/m³ means grams per cubic metre, which is equivalent to milligrams per litre (mg/L)

Informative defines the application of Schedule 1, which is for information and guidance only

Manufacturer means **Green Loo Pty Ltd**

NATA means National Association of Testing Authorities

NCC means the National Construction Code

Normative defines the application of Schedule 2, which is an integral part of the Certificate of Accreditation

Permit means a Permit issued by the *council* pursuant to Part 12 of the *Building Act 2016*

Permit authority means a person or body authorised for that purpose by the *council* of the municipal area in which the on-site waste water management system is installed

Plumber means a person who holds an appropriate class of licence under the *Occupational Licensing Act 2005* as a Plumber Practitioner (Certifier)

Supplier means the party that is responsible for ensuring that products meet and, if applicable, continue to meet, the requirements on which the certification is based. The supplier for the Green Loo GL90 is **Green Loo Pty Ltd**

System means **Green Loo GL90**

TSS means Total Suspended Solids

2. General

- 2.1** For each installation the owner/occupier of the premises must make an application for a permit to a permit authority to install a system as a waste water management system in accordance with Part 12 of the *Building Act 2016*.
- 2.2** For each installation the application to the permit authority must include:
- a) Plans and specification of the nominated system
 - b) Where applicable, a site plan drawn to scale showing the location and type of any proposed waste water management system for the premises and state the method of managing greywater generated on-site
 - c) A statement detailing the proposed method of disposal of the composted end product, the frequency of such disposal and the estimated volume of composted end product to be removed.
 - d) A statement about whether the system is likely to produce a liquid component and how it is proposed to dispose of the liquid. The statement shall be supported by detailed plans of any necessary liquid disposal system.
 - e) A copy of the Certificate of Accreditation which includes details of the supplier.
- 2.3** When issuing a permit the permit authority is to satisfy itself that, the designer's choice of the system configuration is appropriate for the proposed site conditions and use.
- 2.4** This Certificate of Accreditation is valid up until the date nominated on the front page of this accreditation. Any application for variation or renewal must be accompanied by Product Certification to AS/NZS 1546.2 that has been issued by a JAS-ANZ accredited Conformity Assessment Body (CAB) and other required documentation in accordance with the latest Application for Accreditation Form. The Certificate of Accreditation may be withdrawn by the Director at any time and is not transferable.
- 2.5** The supplier must supply the owner and occupier, of each installation, with a user manual setting out the following:
- a) the treatment process
 - b) procedures to be followed in the event of a *system* failure
 - c) emergency contact number
 - d) care, operation, monitoring and maintenance requirements, and
 - e) service procedure.
- 2.6** Each application to a permit authority to install a system must be accompanied by a site-and- soil evaluation report and design report in accordance with AS/NZS 1547 as appropriate.
- 2.7** The supplier must provide the following information to each permit authority where it is intended to install a system in their jurisdiction:
- Statement of warranty
 - Statement of service life
 - Quality Assurance Certification
 - Installation Manual
 - Owner's Manual
 - Engineering Drawings on A3 format
 - Detailed system Specifications
 - Copy of Certificate of Accreditation and Schedules

- 2.8** Any proposed modifications to the system’s specified processes, equipment, materials, fittings or manuals must be authorised by the Director and may be subject to additional verification and/or testing.
- 2.9** Discharge of liquid waste from the Green Loo system must be drained to a below ground absorption trench, designed and installed as per AS/NZS 1547:2012.

Product approval documentation

The following documents are referenced as part of this Accreditation:

Document	Document date
Global Certification Pty Ltd – Product Certificate of Registration No. 625 AS/NZS 1546.2:2008 Waterless Composting Toilets 3 EP Level	29/08/2020
Global Certification Pty Ltd – Product Certificate Report of GL90 to AS/NZS 1546.2:2008 Report Number 3192/1	14/01/2020
Green Loo GL90 Dry Composting Toilet Owners – Installation- Operation Manual	

3. Installation and Commissioning

- 3.1** All plumbing work carried out in connection with the system installation must satisfy the requirements of the *Building Act 2016* and the NCC and be carried out by a licensed plumber with appropriate training and qualifications.
- 3.2** All electrical work must be carried out by a licensed electrician and in accordance with the relevant provisions of AS/NZS 3000.
- 3.3** All pipework that forms part of the installation shall be certified and authorised through the application of the WaterMark Certification Scheme.
- 3.4** The sanitary compartment containing the system must not open directly into a habitable room or pantry unless access is by a permanently ventilated airlock, hallway or circulation space. A permanently ventilated air lock (which may be a circulation space) must be provided with ventilation which the greater of –
- 8000 mm², or
 - 1/500th of the floor area of the circulation space.

Refer to the NCC for further details.

Note: Competing appliances such as wood fired heating appliances, gas fired heaters and other forms of mechanical ventilation may need an air intake installed from outside the building. The Green Loo systems have active vents. Competing appliances and their intake air requirements and venting arrangements need to be taken into consideration.

4. Maintenance and Monitoring

- 4.1 Each installation must be serviced and monitored in accordance with the conditions of accreditation, the conditions of the *permit* and *manufacturer's* instructions.

5. Performance

- 5.1 Maximum design capacity as specified by the *supplier* is up to two (3) persons for the GL 90.

6. On-going Management

- 6.1 The mechanical aspects of the system shall be maintained in accordance with the *manufacturer's* instructions and appropriate spare parts such as an extractor fan should be on hand in case of failure, as recommended by the *supplier*.
- 6.2 The system must be operated in accordance with the following by:
- a) The removal of compost from the *system*
 - b) Conducting periodic checks of the system, including liquid drainage (if required) to a suitable land application solution / absorption trench
 - c) Conducting periodic checks of the compost moisture level and appearance
 - d) In accordance with the supplier's Supplementary Instructions and manufacturer's Owner's Manual.
- 6.3 Unless otherwise directed by the *permit authority*, the composted end product is to be:
- a) buried on site within an area where it will not come into contact with consumable plants or surface waters prior to its application to land. The minimum cover of soil over the deposited end product must be 300 mm, and
 - b) Burial should be a minimum of 30 meters from any water source and 6 meters from any sub-soil or open drainage system, or
 - c) Transported off site to an authorised disposal site.

7. Permitted use

- 7.1 The *system* is designed to receive and treat human waste from toilet pedestals in domestic premises.
- 7.2 The *system* is not intended for the disposal or treatment of grey water. See clause 2.2(b).

8. Winter use

- 8.1 The *systems* are suitable for continuous or periodic use during the cold winter months.

Note: The *systems* are not insulated. Therefore, in non-heated or non-insulated enclosures/rooms the compost may freeze in the drum. Composting will occur satisfactorily between 5 and 50 degrees Celsius.

8.2 Limited winter use

For limited winter use (i.e. only a couple of weekends a month) in cold temperatures, the system can be used as a holding tank. However, adequate space must be provided in the system. The fan or extractor must be operated in accordance with the manufacturer's instructions.

Note: These requirements are only applicable to limited use, e.g. planning on using the system once a month or so during the winter months. If the system is used more frequently during the winter months, the extended winter use conditions apply.

8.3 Extended winter use

For continuous use or extended use during winter (i.e. every weekend, or residential use), the system must be kept warm (at least 15°C) to maintain the composting activity.

The fan or extractor must be run continuously in accordance with the manufacturer's instructions.

8.4 Systems installed in locations subject to low temperatures, such as Lake St. Clair, Cradle Mountain or the central highlands of Tasmania locations above 900m Australian Height Datum (AHD), must install insulation around the container and vent pipe or installed in an area that can be heated to 15 degrees.

9. Appendix A – GL90 Model

Schematic diagram

