



Certificate of Accreditation (Amended)

On-Site Wastewater Management System

This Certificate of Accreditation is hereby issued by the Minister for Building and Construction pursuant to Section 18(1) of the *Building Act 2016* and the *Plumbing Code of Australia* as applicable.

System:	Green Loo GT 120 and GT 330, GT 120 Eco Remote Waterless Composting Toilet
Manufacturer or Supplier:	Pikkuvihreä, Taalintehtaankatu 6 20750 TURKU FINLAND 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 GT 120 and GT 330, GT 120 remote Waterless Composting Toilet**, (the 'system') described in Schedule 1, is accredited as an on-site wastewater management system for use in a single dwelling 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
Department of Justice

Date of Amendment: 16 October 2020

Certificate Number: DOC/20/83494

This Certificate of Accreditation is in force until 27 September 2023 unless withdrawn earlier at the discretion of the Director of Building Control

Document Development History

Version	Certificate Number	Approved by	Amendment Notes
27 September 2018	DOC/18/73348	Director of Building DEW	First issue
16 October 2020	DOC/20/83494	Director of Building PJG	VI issue (cover sheet, Schedule 1 and 2 model GT120 Eco Remote information added)

Schedule I: Specification

Informative

Green Loo waterless composting toilet models: GT 120, GT 330 and GT 120 Eco Remote

General Description

The Green Loo composting toilet GT series 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 within the premises without nuisance or risk to health.

Specification

The Green Loo GT120 and GT330 are composting toilets comprises of a composting chamber removable rectangular tank, inside which a capillary double base sits, with a ventilation pipe and a liquid waste drainage device attached to the rear of the chamber. The Green Loo GT 120 and GT330 composting chamber sits directly under a toilet pedestal to which it is connected by a waste chute to allow an unaffected transfer of the waste from the pedestal to the composting chamber.

The Green Loo GT 120 Eco Remote option allows a vacuum toilet pedestal to be installed remotely from the composting that is not directly connected above. The composting chamber, with a ventilation pipe and a liquid waste drainage device attached to the rear of the chamber. The waste from the vacuum toilet is evacuated into a removable composting container up to 15m away from the toilet. Refer to the manufactures manual for further details.

The composting process inside of the Green Loo composting container is enhanced by the addition of the capillary double base. This allows liquid waste to be absorbed back into the composting mass via the capillary effect, hence boosting the composting process. Any excess liquid which is not used up in the composting process or evaporated through the vent pipework is drained out through the absorption trench attached to the back of the composting unit. The absorption trench consists of a length of PVC pipe (2 meters for the 120 model and 4 meters for the 330 model) buried underground, downhill of the Green Loo GT series. This is connected to the system via a hose, thus allowing any excess liquid to expel from the system in a safe manor.

Access to the composting chamber is provided by removing the lid to the composting tank, and wheeling the system backwards using the heavy duty wheels attached to the bottom of the system.

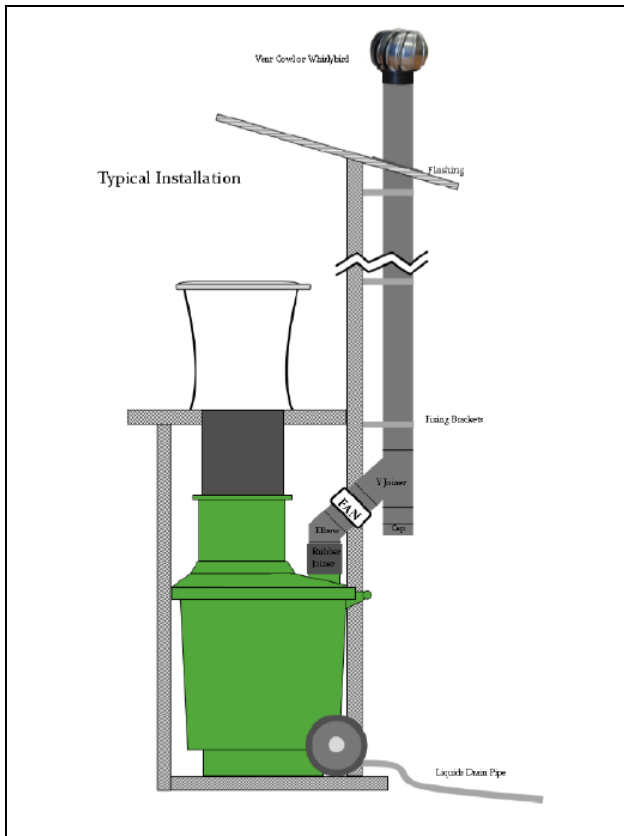
An air venting system is attached to the rear of the Green Loo composting chamber to prevent any foul odours from developing. This ventilation system consists of a 100 mm PVC pipe, along with a continuous running fan to increase air flow. This fan can be powered by either mains electricity or solar energy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

The composting capacity and usage of the Green Loo GT models are expressed in the following table with a diagram of the models shown below.

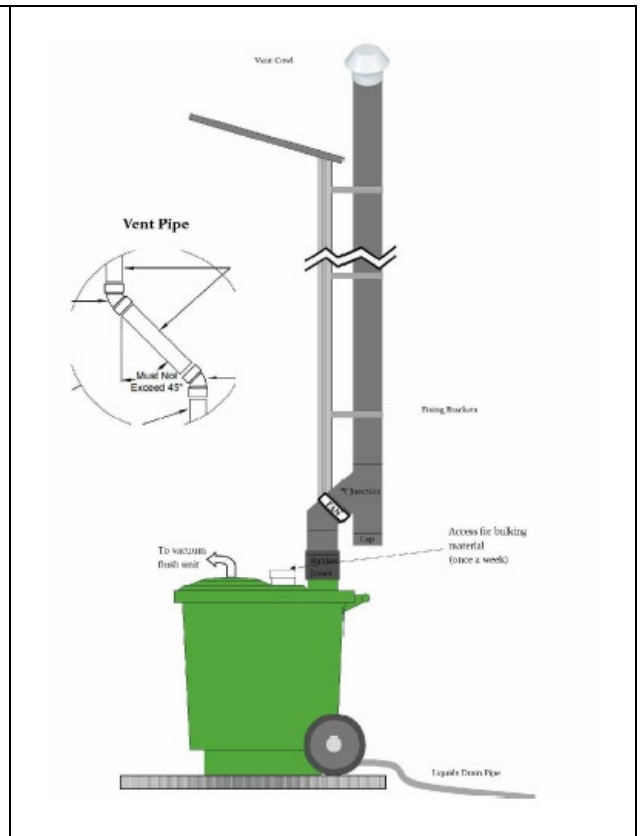
Model	Outer Tank Dimensions (mm)	Composting Chamber	Equivalent full time adult residential use	Estimated Composting Time
GT 120	600w X 600d X 700h	120 Litres	4	3 months (minimum)
GT 120 Eco Remote	600w X 600d X 700h	120 Litres	4	3 months (minimum)
GT 330	660w X 760d X 920 h	330 Litres	8	3 months (minimum)

Approximate Energy Consumption

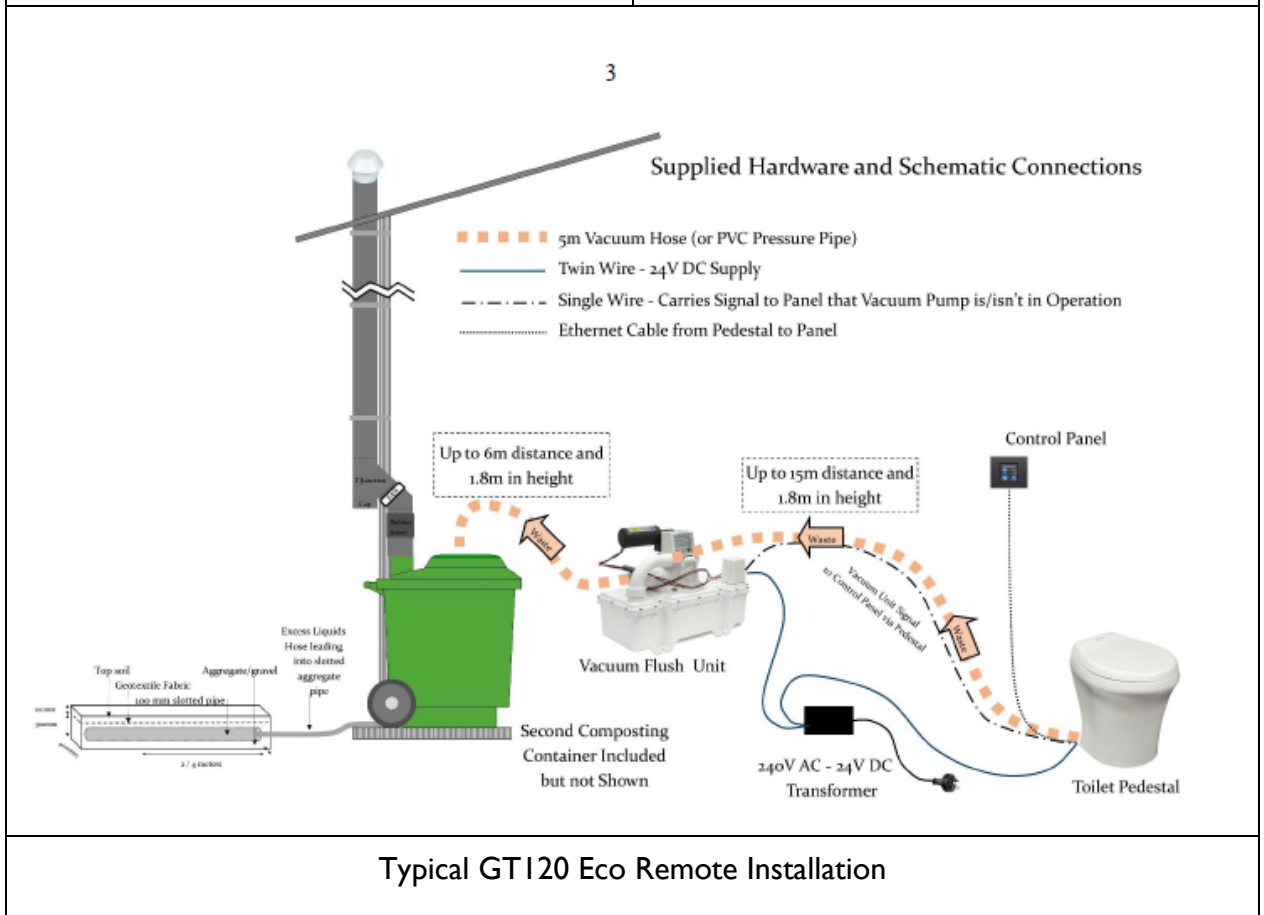
Model	Electrical Equipment	Rating	Daily average hours of operation	Consumption, kWh/year	Estimated annual cost at \$0.27/kWh
GT 120	Sirocco YX2521-Maglev fan	3.8 W	24	33.3 kWh	\$9.00
GT 120 Eco Remote	IP 68 Fan	3.8 W	24	26.3 kWh	\$7.10
	Domestic VG4 Vacuum Pump	100 W	0.2	7.5 kWh	\$2.00
	Domestic 4800 Vacuum Toilet	30 W	0.1	1.1 kWh	\$0.30
	Domestic Flush Panel	1 W	24	8.8 kWh	\$2.40
GT 330	Sirocco YX2521-Maglev fan	3.8 W	24	33.3 kWh	\$9



Typical GT120 and GT330 composting chamber with toilet above installation



Typical GT120 Eco Remote composting chamber with vacuum toilet (remote) installation



Schedule 2 – Conditions of Accreditation

Normative

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’

Designer means ‘a person who is accredited under the *Building Act 2016* or a *Plumber* who has a specialty in the area of designing on-site wastewater 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 ‘**Pikkuvihreä**’

NATA means ‘National Association of Testing Authorities’

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

PCA means ‘Vol. 3 of the National Construction Code (Plumbing Code of Australia)’

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 wastewater 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 GT 120 and GT 330, GT 120 Eco Remote is **Green Loo Pty Ltd**

System means **Green Loo GT 120 and GT 330, GT120 Eco Remote**

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 wastewater 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:
- Plans and specification of the nominated system;
 - Where applicable, a site plan drawn to scale showing the location and type of any proposed wastewater management system for the premises and state the method of managing greywater generated on-site;
 - 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.
 - 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.
 - 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** The Certificate of Accreditation is valid for five (5) years from the date of issue or until withdrawn by the Director.
- 2.5** 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.
- 2.6** Discharge of liquid waste from the Green Loo composting chamber 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. 624 AS/NZS 1546.2:2008 Waterless Composting Toilets 4 EP Level	29/08/2020
Global Certification Pty Ltd – Product Certificate Report of GT120 Eco Remote to AS/NZS 1546.2:2008 Report Number 3192/2	9/01/2020
Green Loo GT 120 Family ECO REMOTE 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 *Plumbing Code of Australia* 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 –

- a) 8000 mm²; or
- b) 1/500th of the floor area of the circulation space.

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 units 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 four (4) persons for the GT 120 and GT120 Eco Remote or eight (8) persons for the GT 330.

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.

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; or
 - b) 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.

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 composting tank. 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.

Systems without an in-built heating element may require the use of a space heater or other means of heating the area (such as solar) in order to maintain proper composting temperature.

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 vent pipe.

Appendix A – 330 Model

Schematic diagram

Green Toilet 330

technical information





Green Toilet 330

- Height 920 mm
- Waste shaft, flexible 200 mm
- Width of the container w/wheels 660 mm
- Depth 820 mm
- Diameter of the ventilation pipe 110 mm
- Connection of urine pipe between the wheels from the back
- Diameter of the urine hose 29,5 mm
- length 1,5 m
- Weight: container 15 kg,
- whole package w/peat 35 kg
- Volume 330 l
- Material: LDPE-plastic, manufactured in Finland





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Appendix B – I 20 Model

Schematic diagram

Green Toilet Family 120

technical information





700 mm

300 mm adjustable

600 mm



Capillary double base



110

140

220

295

150

85

Green Toilet Family 120

Height 700 mm
 Waste shaft, adjustable height 300 mm
 Width of the container 600 mm, depth 600 mm, height 700 mm
 Diameter of the ventilation pipe 110 mm, length 1.0 m
 Diameter of flexible pipe 110 mm, length 500 mm
 Diameter of urine hose 29.5 mm, length 1.5 m
 Gross weight 24 kg, container weight 10 kg

Item package includes: container, capillary double base, waste shaft, wheels, 2 x ventilation pipes, pipe joint, flexible pipe, 2 x ventilation pipe holders, ventilation hat, urine canister (20 l) and hose, styrofoam seat, and dry material.

Volume 120 l
 Material LDPE-plastic, manufactured in Finland



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