



Tasmanian
Government

Certificate of Accreditation

On-Site Waste Water Management System

This Certificate of Accreditation is hereby issued by the Minister for Construction pursuant to Section 18 of the *Building Act 2016*.

System:	Waterless Composting Toilet System Models EcoLet Non-electric, Manual, Automatic and Automatic XL
Supplier:	Ecoflo Waste Water Management Pty Ltd ABN 33 606 583 895
Of:	6 Hurricane Street, Banyo, QLD 4014

This is to certify that the **EcoLet Treatment System** (the system) as described in Schedule I, has been accredited for use as an on-site waste water management system in single dwellings (within plumbing installations in Tasmania). This accreditation is subject to the conditions and permitted uses specified in Schedule 2, and the Plumbing Code of Australia as applicable.

Dale Webster

Director of Building Control

Delegate of the Minister for Construction

Date of Issue: 20 April 2018

Certificate No: BSR0632/2013

This Certificate of Accreditation is valid until 20 April 2023

Unless withdrawn earlier at the discretion of the Director of Building Control

Schedule I

Informative

EcoLet Waterless Composting Toilet Systems

General Description

EcoLet™ NE

The EcoLet™ NE is designed for 2 people, full time, or 4 people, part time. It is completely non-electric, and is suitable for remote locations, using 2 exchangeable composting bins, one under the seat inside the chamber and one composting bin with a lid stored externally, to be rotated with bin inside unit when full. The NE is supplied with vent pipe for good natural draft, but has no heater or fan to aid in the evaporation of excess liquid. Therefore, a drain tube is provided to evacuate the liquids to an approved waste water management system.

EcoLet™ Manual

The EcoLet™ Manual is designed for 2 people, full time, or 3 people, part time. It is a semi-automatic system, using 240v power. This model contains an electric heater and fan to aid the composting process by evaporating excess liquids, regulating the temperature and providing additional air flow to the compost mixture. The toilet is provided with a T-handle at top which requires a couple of times after each use to mix and aerate the compost by the internal mixing devices.

EcoLet™ Automatic

The EcoLet™ Automatic is designed for 3 people, full time, or 4 people, part time. It is a fully automatic system, using 240v power. This model is similar to the Manual but has a fully automatic mixing mechanism which is operated by lowering the seat after each use.

EcoLet™ Automatic XL

The EcoLet™ XL is designed for 4 people, full time, or 6 people, part time. It is a fully automatic system, using 240v power. This unit is fully automatic, has a 40% larger chamber, two heating elements, ventilation fan, advanced mixing mechanism, and excess liquid sensor.



EcoLet NE, showing exchangeable compost bin and vent pipe fittings



Treatment Process

Human excreta and toilet paper, together with regularly added humus starter is gradually decomposed in a ventilated (aerobic) environment. Composting of the pile is encouraged by rotation of the mixer arms, either manually or by electric motor. An electric extractor fan, where fitted, draws air over the compost pile and also maintains negative air pressure in the compost chamber to reduce the risk of odours escaping. Finished compost is collected in a tray and removed for disposal as required. Correct composting temperature range is achieved by an internal heating element or by maintaining the ambient temperature of the room.

Approximate Energy Consumption

Model	Electrical equipment	Rating	Daily average hours of operatio	Consumption, kWh/year	Estimated annual cost at \$0.27/kWh
EcoLet Non-electric	None				
EcoLet Manual	Fan Heater	25 watts 225 watts	24 hrs/day 4 hrs/person/day	Fan 219 kWh Heater 328 to 656 kWh	\$148.00 (1 pers) \$237.00 (2 pers)
EcoLet Automatic	Fan Heater Mixer motor	25 watts 305 watts 45 watts	24 hrs/day 4 hrs/person/day 0.25 hrs/day	219 kWh 445 to 1335 kWh 4 kWh	\$180.00 (1 pers) \$420.00 (3 pers)
EcoLet Automatic XL	Fan Heater Mixer motor	25 watts 305 watts 45 watts	24 hrs/day 4 hrs/person/day 0.25 hrs/day	219 kWh 445 to 1780 kWh 4 kWh	\$180.00 (1 pers) \$540.00 (4 pers)

Note: The table provides the estimated electricity usage based on the suppliers advice.

Schedule 2

(Normative)

Conditions of Accreditation

1. Definitions

In this schedule:

AS/NZS 1546.2 means 'Joint Australian/New Zealand Standard 'AS/NZS 1546.2:2008 On-site domestic wastewater treatment units, Part 2: Waterless composting toilets';

AS/NZS 1547 means 'Joint Australian/New Zealand Standard 'AS/NZS 1547:2000 On-site domestic wastewater management';

AS/NZS 3000 means 'Joint Australian/New Zealand Standard "AS/NZS 3000:2000 Wiring rules';

Council means 'the Municipal Council having jurisdiction'

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 waste water management system installations';

Director means 'the Director of Building Control';

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

Manufacturer means '**Swedish Ecology AB, Sweden**' **NATA** means 'National Association of Testing Authorities'

PCA means 'Vol. 3 of the National Construction Code (Plumbing Code of Australia)';

Permit means 'a Permit issued by the *council* pursuant to section 154 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 *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 **EcoLet** is **BICO Pty Ltd**.

System means '**EcoLet** waterless composting toilet models **Non-electric, Manual, Automatic, and Automatic XL**'.

2. General

- 2.1 This Certificate of Accreditation is valid from 20 April 2018 until 20 April 2023. Any application for variation or renewal must be accompanied by Product Certification 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.
- 2.2 The Certificate of Accreditation may be withdrawn by the Director at any time and is not transferable.
- 2.3 Each system must be provided with a comprehensive manual with details of:
 - i. Installation procedures to ensure correct installation of the unit,
 - ii. Maintenance procedures necessary to ensure the efficient and safe operation of the unit, and
 - iii. Health and safety requirements for operation and maintenance.

- 2.4 For each installation the owner of the premises must make an application for a permit in accordance with Sections 154 through 156 of the Building Act 2016.
- 2.5 For each installation the application to the permit authority must include:
 - a) Plans and specification of the nominated system.
 - b) Where applicable, and in addition to (a) documentation detailing proposed waste water management system for managing excess liquid from compost tank and greywater generated on-site; and
 - 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.
- 2.6 When issuing a *permit* the *permit authority* is to satisfy itself that, the designer's choice of the system configuration is optimal for the proposed site conditions and use.
- 2.7 All plumbing work carried out in connection with the system must satisfy the requirements of the *Building Act 2016* and the Plumbing Regulations, and be carried out by a *plumber*.
- 2.8 All electrical work must be carried out by a licensed electrician and in accordance with relevant provisions of *AS/NZS 3000*.
- 2.9 The location, lighting and ventilation of a room in which a system is installed must satisfy the requirements of the Building Code of Australia.
- 2.10 The termination and location of the vent must comply with *AS/NZS 3500, Part 2: Sanitary plumbing and drainage*.

3. Maintenance and Monitoring

- 3.1 Each installation must be serviced and monitored in accordance with the conditions of accreditation, the conditions of the permit and manufacturer's requirements. At the end of the second anniversary of the accreditation date and each anniversary thereafter, the supplier shall provide a list of all installed systems by anniversary year of installation to the Director.
- 3.2 The Director may randomly select up to 5 (five) or 10% of the installed systems (whichever is the greater) from each year of installation for testing by the supplier. The supplier, at its own cost, shall arrange sampling to be organised by an independent body accepted by the Director. Samples for *E. coli* and salmonella are to be determined by a NATA registered laboratory or laboratory accepted by the Director. The results are to be reported to the Director by:
 - a) Address of premises;
 - b) Date sampled;
 - c) Sample identification;
 - d) *E. coli*;
 - e) Salmonella;
 - f) Service history; and
 - g) Graphs of accumulative data for faecal coliforms and salmonella results for each anniversary group.

4. Performance

The composting capacity and maximum usage of the system models are shown in Appendix 'B'.

5. Ongoing Management

- 5.1 Unless otherwise directed by the permit authority, the composted end product is to be disposed of:
- i. by burial on the premises at a depth of 300 mm with a minimum cover of 100 mm in an area which is not intended to be used for at least three (3) months for the cultivation of food for human consumption; and
 - ii. in such a manner and location so as not to pollute groundwater or surface waters.

6. Permitted use

- 6.1 The *system* is designed to receive and treat human waste from toilet pedestals in domestic premises.

7. Winter or cold climate use

The composting chamber of the *system* must be kept warm (at least 18°C) to maintain the bacterial activity and composting process. If necessary, the composting chamber or the space where the composting chamber is located must be heated to maintain the correct composting temperature.

Systems installed in locations subject to low temperatures (e.g. Lake St. Clair, Cradle Mountain or locations above 900m Australian Height Datum (AHD)), must install R1 value insulation around the vent pipe.

Appendix A

Typical schematic drawing of EcoLet models

(Informative)

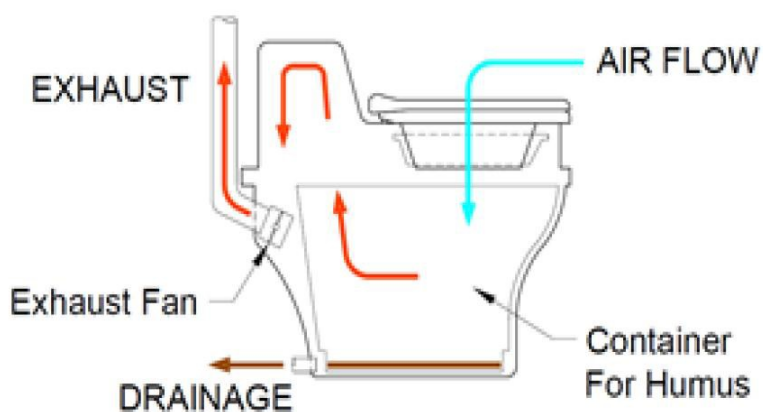


Figure 1: EcoLet Non-electric

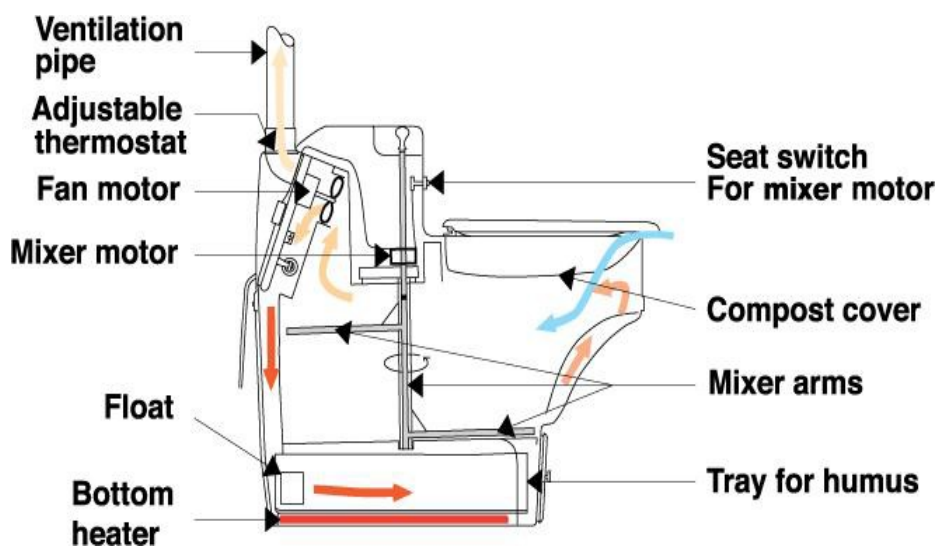


Figure 2: EcoLet Manual / Automatic; airflow and general layout

Appendix B

Specifications (Normative)

MODEL	OPERATION	USAGE	ELECTRICAL RATING	DIMENSIONS	FOOTPRINT DIMENSIONS	MATERIALS
ecoLet NE	Batch Composter	2 people full time 4 people part time	Non Electric	Height = 64cm Width = 40cm Depth = 74cm	65cm x 74cm NB includes room to remove tray	Outer casing of ABS Plastic. Metal components of Stainless Steel.
ecoLet Manual	Semi Automatic	2 people full time 3 people part time	240V 250W max - heater 225W + fan motor 25W	Height = 68cm Width = 55cm Depth = 74cm	55cm x 135cm NB includes room to remove tray	Outer casing of ABS Plastic. Mixing device and other important metal components of Stainless Steel.
ecoLet Automatic	Fully Automatic	3 people full time 4 people part time	240V 320W max - heater 250W + mixer motor 45W + fan motor 25W	Height = 68cm Width = 55cm Depth = 74cm	55cm x 135cm NB includes room to remove tray	Outer casing of ABS Plastic. Mixing device and other important metal components of Stainless Steel.
ecoLet Automatic XL	Fully Automatic	4 people full time 6 people part time	240V 380W max - heater 310W + mixer motor 45W + fan motor 25W	Height = 66cm Width = 65cm Depth = 79cm	65cm x 135cm NB includes room to remove tray	Outer casing of ABS Plastic. Mixing device and other important metal components of Stainless Steel.

NOTE: Rated capacities are in accordance with the manufacturers recommendations for the various models.

Appendix C

Parts List

(Informative)

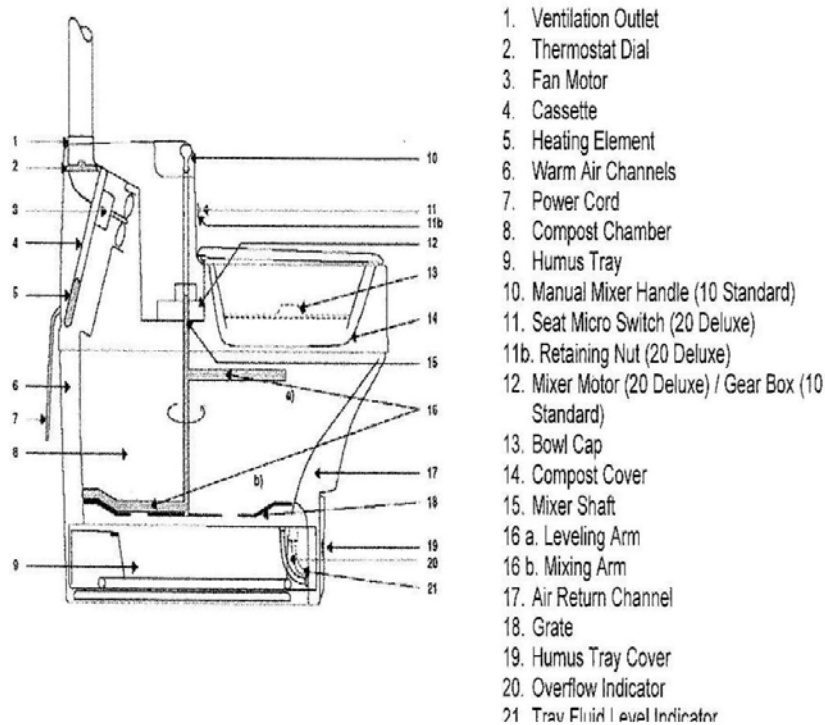


Figure 1 – EcoLet Manual / Automatic

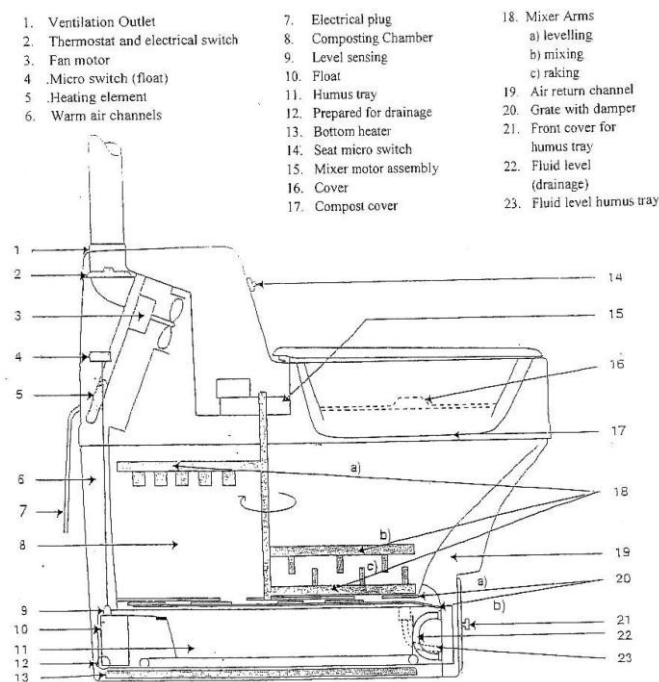


Figure 2: EcoLet Automatic XL