



Tasmania

Certificate of Accreditation

On-Site Waste Water Management System

This Certificate of Accreditation is hereby issued by the Minister for Justice and Workplace Relations pursuant to Section 59(2) of the Building Act 2000 and Part G2 of the Tasmanian Plumbing Code.

System: **Waterless Composting Toilet System
Models CM8,10,14,20,40 & 60**

Manufacturer/ **BICO Pty Ltd, trading as Clivus Multrum Australia**

Supplier: **ABN 60 123 041 805**

Of: **3/14 Hinkler Court, Brendale, QLD 4500**

*This is to certify that the **Clivus Multrum** Treatment System (the system) as described in Schedule 1, has been accredited for use as an on-site waste water management system in single dwellings and non-residential facilities (within plumbing installations in Tasmania). This accreditation is subject to the conditions and permitted uses specified in Schedule 2, and in accordance with the Tasmanian Plumbing Code.*

Dale Webster
Director of Building Control
Delegate of the Minister for Justice and Workplace Relations

Date of Issue: 15 November 2013

Certificate No: BSR0559/2013

This Certificate of Accreditation is in force from 11 October 2013 to 10 October 2014

SCHEDULE I

Clivus Multrum Waterless Composting Toilet Systems

(Informative)

General Description

The Clivus Multrum waterless composting toilet system is designed to receive and treat human waste from toilet pedestals in domestic or non-residential facilities.

System Components (see also schematic drawings in appendix A, below)

The system consists of three major components.

1. Toilet pedestal.
2. Waste chute.
3. Composting tank and vent pipe.

Capacity and dimensions of the composting tanks may be found in appendix B below. For further details refer to the appropriate Owner's Manual.

Energy consumption

Estimated electricity usage based on *supplier's* advice:

Electrical equipment	Rating	Daily average hours of operation as specified by manufacturer	Consumption, kWh/year	Estimated annual cost at \$0.27/kWh
Fan, 12 volt	5 watts	24 hrs/day	44 kWh	\$12.00

Description of Treatment Process

Human excreta and toilet paper, together with a carbon-rich bulking agent such as wood shavings, is gradually decomposed in a ventilated environment. The bulking agent is added regularly to maintain the optimum carbon/nitrogen ratio, to improve air flow and promote bacterial growth. Baffles and air channels distribute air flow and promote the aerobic composting process. The volume of the organic material is continually reducing as fresh material is added to the top of the pile. Finished compost can be removed from the bottom of the pile when appropriate. The electric extractor fan maintains negative air pressure in the compost chamber to reduce the risk of odours escaping.

Schedule 2

Conditions of Accreditation

(Normative)

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 2000* 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 '**Clivus Multrum Pty Ltd**'

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 82 of the *Building Act 2000*';

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 **Clivus Multrum CM models is BICO Pty Ltd.**

System means '**Clivus Multrum** waterless composting toilet system **models CM8, CM 10, CM14, CM20, CM40 or CM60**'.

TPC means the 'Tasmanian Plumbing Code'.

2.0 General

- 2.1 This Certificate of Accreditation is valid from 11 October 2013 until 10 October 2014. 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* to install a *system* as a waste water management system in accordance with Section 79 of the *Building Act 2000* and Part 3 of the *Plumbing Regulations 2004*.
- 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 2000*, TPC 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.

3.0 Installation and Commissioning

- 3.1. Each *system* installation must be inspected and checked by the *designer* or the *designer's agent*. The *designer* on completion is to certify that the *system* has been constructed, installed and *commissioned* in accordance with its design, the conditions of accreditation and any additional requirements set out in the *permit*.

4.0 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* requirements.
- 4.2 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*. 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.

5.0 Performance

The composting capacity and maximum usage of the system models are shown in the following table:

Model	Rated Capacity uses/day/year	Power (for fan)
CM8	20/d or 8,000/yr	Electric
CM10	25/d or 10,000/yr	Electric
CM14	38/d or 14,000/yr	Electric
CM20	50/d or 20,000/yr	Electric
CM40	110/d or 40,000/yr	Electric
CM60	160/d or 60,000/yr	Electric

NOTE: Maximum uses/visits are in accordance with the manufacturers recommendations for the various models. For example the CM8 is rated for up to 8,000 uses/visits per year, and so on up to the CM60 which is rated for up to 60,000 uses/visits per year. For residential and non-residential/public facilities use the design factors and information given in AS/NZS1546.2, Appendix E, should be taken into account.

6.0 On-going Management

6.1 Unless otherwise directed by the permit authority, the composted end product is to be:

- (a) buried for 6 – 12 months 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 100 mm; or
- (b) retained for an additional period of three months in a lidded compost bin and at the completion of this period the compost may be used as a soil conditioner without any further treatment.

7.0 Permitted use

7.1 The system is designed to receive and treat human waste from toilet pedestals in domestic premises or non-residential facilities.

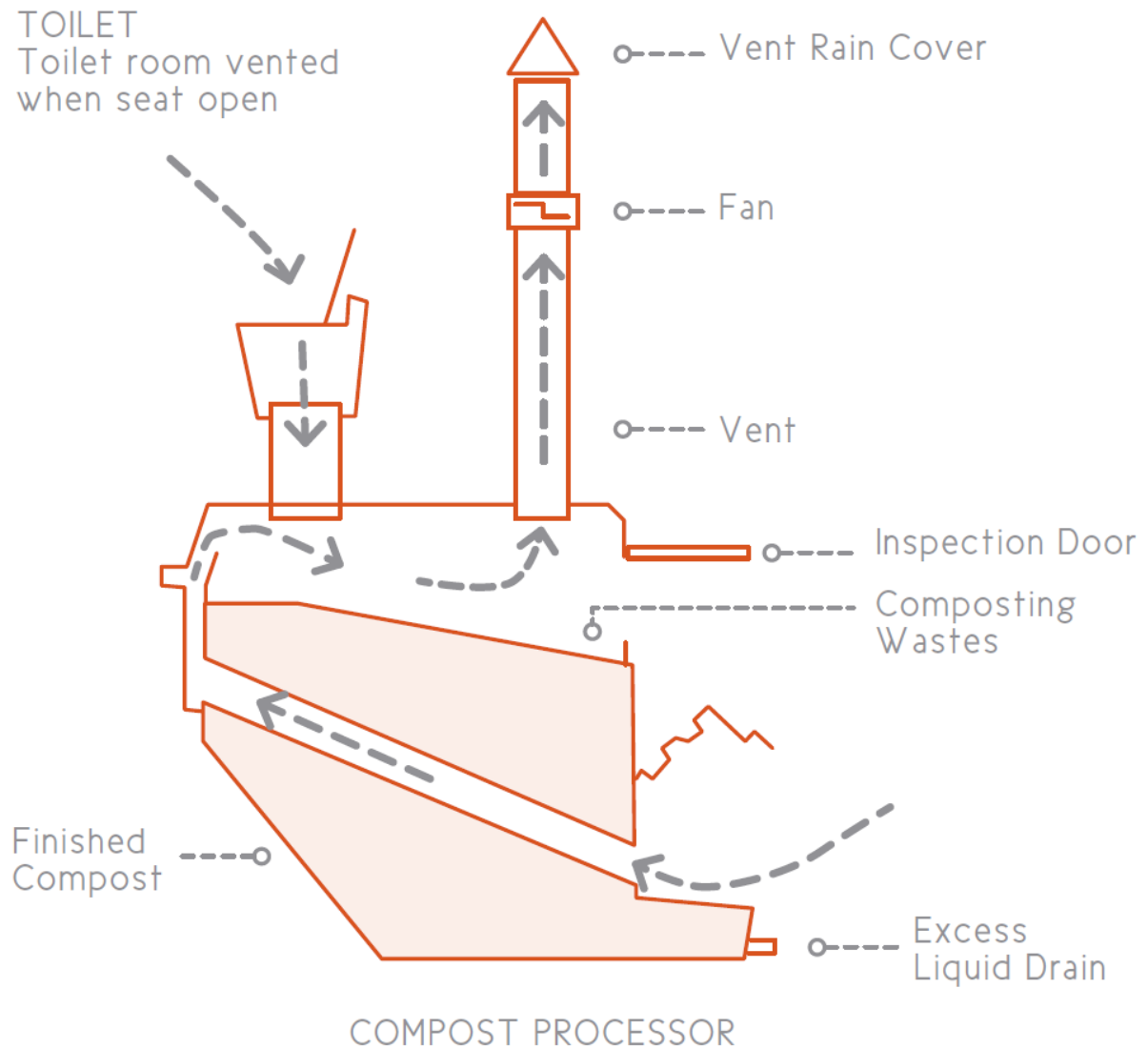
8.0 Winter or cold climate use

The composting chamber of the system must be kept warm (at least 15°C) to maintain the bacterial activity and composting process. If necessary, 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 Clivus Multrum installation



Appendix B

Compost chamber dimensions and capacity

NOMINAL CAPACITY
 Daily | 20 visits (average)
 Annual | 8000 visits

The Clivus CM8 is ideal for typical domestic applications.

Side view dimensions: 140 (top width), 900 (top length), 1080 (height), 300 (bottom width), 370 (bottom length), 1550 (total length).

Front view dimensions: 1010 (width), 220 (height), 1250 (length).

NOMINAL CAPACITY
 Daily | 25 visits (average)
 Annual | 10000 visits

The Clivus CM10 is ideal for domestic + small public applications, especially where two pedestals are required.

Side view dimensions: 140 (top width), 900 (top length), 1080 (height), 300 (bottom width), 370 (bottom length), 1550 (total length).

Front view dimensions: 1320 (width), 220 (height), 1550 (length).

NOMINAL CAPACITY
 Daily | 38 visits (average)
 Annual | 14000 visits

The Clivus CM14 is ideal for larger households and small public facilities. The CM14 has the lowest profile of all the CM models when partially buried.

Side view dimensions: 100 (top width), 1330 (top length), 1080 (height), 400 (bottom width), 470 (bottom length), 2050 (total length), 1440 (internal length).

Front view dimensions: 1350 (width), 580 (height), 500 (lower height), 1500 (length).

NOMINAL CAPACITY
 Daily | 55 visits (average)
 Annual | 20000 visits

The Clivus CM20 is ideal for large houses or small public facilities.

Side view dimensions: 1600 (height), 130 (top width), 105 (top width), 740 (height), 75 (height), 670 (bottom width), 2400 (total length).

Front view dimensions: 1600 (height), 980 (width), 1200 (length).

NOMINAL CAPACITY
 Daily | 110 visits (average)
 Annual | 40000 visits

The Clivus Multrum CM40 is ideal for medium to high usage public facilities, especially in locations where water is in short supply.

Side view dimensions: 1780 (height), 60 (top width), 1540 (top length), 780 (height), 80 (height), 890 (bottom width), 1440 (internal length), 2430 (total length).

Front view dimensions: 1120 (height), 1650 (width), 300 (height), 1630 (length), 1890 (length).