Tasmanian Government

Certificate of Accreditation

On-Site Waste Water Management System

This Certificate of Accreditation is hereby issued by the Minister for Building and Construction pursuant to Section 18(2) of the *Building Act 2016* and the Plumbing Code of Australia as applicable.

System: WormSmart – Model AWSP
1800PF-3000 & 4000L

Manufacturer or Supplier: WormSmart T/A Property Werx PTY LTD

Of: 60 Country Club Drive, Safety Beach
VIC, 3936

This is to certify that the WormSmart Waste Systems as described in Schedule 1, 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 Building and Construction

Date of Issue: 9 August 2017

Certificate Number: DOC/17/61420

This Certificate of Accreditation is valid until 9 August 2022 subject to conditions unless withdrawn earlier by the Director

SCHEDULE 1: Specification
(Informative)

WormSmart – Model AWSP

System Description

The BioLogical Waste Systems, WormSmart AWSP 1800PF ("the system") collect and treat domestic and commercial sewage and disperses the primary treated effluent to land.

All Waste Single Pipe (AWSP) 1800 PF

I. Treatment system components (see Figure 1):
   a) A 400L collection sump with suitably sized sump pump installed (where applicable). The sump and pump are only required where the outlet pipe from the premises is not high enough for the raw sewage to flow by gravity into the inlet of the WormSmart system.

   b) A 3000L UV-stabilised, rota-moulded polyethylene Everhard tank containing:
      i. single wastewater inlet pipe,
      ii. a raised platform consisting of layers of plastic mesh, geotextile and bags filled with plastic media,
      iii. a 4m high air vent pipe fitted with an insect-proof mesh,
      iv. a effluent storage chamber with a suitably sized Orange pump.

   c) an audio-visual alarm with mute (maximum-24 hours) facilities connected to all pumps.

II. Treatment process:
   a) Wastewater enters the tank and flows onto an arched plastic mesh in the middle of the plastic and fabric filter platform.
   b) The solid organic material (bio-solids) builds up on the platform and is aerobically decomposed by worms and micro-organisms; while the wastewater and worm castings particles flow through the bio-solids and filter media and collect in the chamber below.
   c) Effluent flows into the pump well and is pumped into the land application system.

SCHEDULE 2: Conditions of Accreditation

Normative

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 1546.1 means the Joint Australian/New Zealand Standard '*AS/NZS 1546.1:2008 On-site domestic wastewater treatment units, Part 1: Septic Tanks*';

AS/NZS 3000 means the Joint Australian/New Zealand Standard '*AS/NZS 3000:2000 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*';

BOD_5 means '5-day Biochemical Oxygen Demand unless otherwise stated';

Council means 'the Municipal Council having jurisdiction';

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

Designer means 'a person who is licensed 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';

FOG means Fat, Oil and Grease

g/m^3 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 'WormSmart, T/A Property Werx PTY LTD**'**;

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 section 25 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 is 'WormSmart, T/A Property Werx PTY LTD.

System means 'WormSmart Model AWSP 1800PF System**'.**

TN means 'Total Nitrogen';

TP means 'Total Phosphorus;

TSS means 'Total Suspended Solids'.

General

1. No modifications or variations to the system may be made unless the manufacturer has prior approval from the Director of Building Control in writing.
2. The system is approved subject to the relevant municipal council being satisfied that the installation shall be installed and maintained in accordance with *Australian Standards AS/NZS 1546.1 (On-site domestic wastewater treatment units: Septic tanks) and AS/NZS 1547 (On-site domestic wastewater management)* (as amended):
    a) The design, manufacture, installation and maintenance of the treatment system, and
    b) The design, installation and maintenance of the land application system.
3. A permanent, clear and indelible notice must be attached to the system in a prominent position. The Notice must include:
    a) Manufacturer's name and phone number,
    b) Model number of the system, and
    c) Date of installation.

Performance

4. Hydraulic and organic loading:

    The system is approved for the treatment of sewage on residential and commercial premises with the following maximum hydraulic and organic loads:

Model	Hydraulic load (L/day)	Biological oxygen demand (g/day)
WormSmart ASWP 1800PF	1800	800

5. Estimated Electricity Usage for a 4 person household with average wastewater flows and loads:

    The system must be connected to a continuous 240V 50Hz AC power supply. A weather-proof isolating switch must be provided at the power outlet. The power supply must have its own clearly marked designated residual-current device (RCD) protected circuit breaker in the fuse box with no other appliances connected.

Electrical Components	Power Consumption (Watts)	Daily Hours of Operation	kWh/year	Approx Cost/yr @ ~ $0.22 kWh
Suitably sized sump pump 1 (where required)	Typically 350 to 750	0.25	32 - 68	$7 - $15
Orange Effluent Pump	350 to 750	0.25	32 - 68	$7 - $15
Orange Excavation Pit Drainage Pump	350 to 750	0.1	40	$3 - $6

Permitted End Uses

6. Dispersal to land via:

    a. soil absorption trenches;
    b. evapo-transpiration beds/trenches;
    c. a mound system

Installation

7. When a treatment system is purchased, the supplier must provide or make available to the homeowner a copy of the following documents:
    - Statement of warranty and of service life;
    - Schematic drawing and detailed specifications (Figure 1);
    - Owner/occupier's operation instruction manual;
    - Service agreement contract;
    - Sample service report form;
    - A full description of the treatment train and mechanical and electrical component parts;
    - A copy of this Accreditation.

    The premises owner must supply a copy of any of the above documents as required by the local council, as part of the application for a permit to install or to use this onsite wastewater treatment system.

8. Installation of the treatment system must be carried out in accordance with the manufacturer's specifications, this Accreditation and the most recent version of the *Tasmanian Building Regulations.*

9. The land application system and the pipework connecting the treatment system to the house drainage system and to the dispersal area must be installed by a person licensed in Tasmania with the Department of Justice as a licensed Plumber (Drainage) work. The installation shall be in accordance with the most recent versions of;

    a. Australian Standard AS/NZS 1546.1 *On-site domestic wastewater treatment units: Part 1 Septic tanks;*
    b. Australian Standard AS/NZS 1547 *On-site domestic wastewater management;* and
    c. *Tasmanian Building Regulations.*

10. The electrical components of the treatment system must be installed by a licensed electrician in accordance with this Accreditation and the manufacturer's specifications set out in the Installation Manual .

11. The system must be installed so that easy and ongoing access to all chambers and equipment is ensured for the purpose of inspection and maintenance. All access openings must be watertight and located above ground surface level, to prevent the ingress of storm water.

12. A permanent, legible and indelible notice listing the manufacturer's name and contact details, the model name and number and the date of installation of the treatment system, must be attached to the system in a prominent position.

Maintenance and monitoring

13. An alarm system must be installed in an appropriate location to indicate any failure or fault in the system. The alarm must have suitable visual, audio and muting (maximum 24 hour) facilities.

14. The maximum permissible noise level from the treatment system (except the alarm) shall be 40 dB at a distance of 1.0 m.

15. Maintenance of the treatment and land application system must be carried out in accordance with the manufacturer's specifications by an accredited service technician at 3 months, 6 months and 12 months in the first year after installation and commissioning, and then annually thereafter. An accredited service technician is a person who:
    a. has been suitably trained by the system manufacturer regarding the installation, operation and service requirements of the system; and
    b. is accredited by the system manufacturer in writing to undertake the service.

Reporting

16. The service technician must submit the following reports to the local council after each inspection:
    a. treatment system inspection and maintenance reports;
    b. land application system inspection and maintenance report.

Figure 1: Typical Cross Section of System