



Certificate of Accreditation

On-Site Waste Water Management System

This Certificate of Accreditation is hereby issued by the Director of Building Control pursuant to Section 18(1) of the *Building Act 2016* and the accreditation of product.

System:	WormSmart AWSP 1800PF 3000L & 4000L
Manufacturer or Supplier:	Property Werx PTY LTD
Of:	42 Production Drive Wauchope NSW 2446

This is to certify that the WormSmart WSP 1800PF as described in Schedule 1, has been accredited for use as a Primary Treatment on-site waste water management device in single premises (within plumbing installations in Tasmania). This accreditation is subject to the conditions and permitted uses specified in Schedule 2, and in accordance with the *Building Act 2016*.

Henry Hodgson
Delegate for the Director of Building Control
Consumer, Building and Occupational Services
Department of Justice

Date of Issue: 07th July 2023

Certificate Number: DOC/23/45142

This Certificate of Accreditation is in force until 07th July 2028 unless withdrawn earlier at the discretion of the Director of Building Control

Document Development History

Version date	Certificate number	Approved by	Amendment notes
			Original Issue

Schedule I: Specification

Normative

System Description

The WormSmart natural Waste System is a primary treatment System designed to process and treat all domestic waste water including all organic waste from a kitchen garbage grinder in a single polypropylene tank.

All wastewater is directed to the tank through one common pipe using the standard plumbing in most existing homes. The WormSmart waste disposal system breaks down the solids-faeces, toilet paper and other organic matter-by way of Vermiculture (worm composting). The wet decomposition chamber incorporated in the units design acts like a mini ecosystem; much the same way as nature works on the floor of the rainforest, which is why we call our system Bio-Logical. Vermiculture, like nature, is an effective process of converting faecal matter into vermicastings (Worm castings) and pumped to the land application area.

Worms eat 50% of their own body weight per day. The grinding and tumbling action within the gut reduces sludge particle size exposing a greater surface area to a range of enzymes and a host of bacteria. After excretion by the worms, the particles continue to be exposed to an aerobic environment. The vertical pipe extending from the tank draws air through the system and extracts air by way of a wind driven vent. The worms breed rapidly within this mini ecosystem and readily convert raw sewage and other organic kitchen waste into increased worm biomass and vermicast (worm excreta).

This is ideal fertiliser promoting plant growth and conditions the soil to which it is introduced. The above process takes place in the upper section of the tank which utilises a series of trays, filters and bio-media to separate the sewerage into solids and liquid waste water. The waste water is filtered and exposed to bacteria which helps to treat the effluent. The worms consume solids and paper and excrete worm castings which build up slowly to a predetermined level and then act as natural filtration. All effluent is collected in the bottom section of the tank and pumped to the land application area. Unlike most other septic systems, the WormSmart system will benefit from addition of vegetable scraps via a kitchen disposal grinder unit mounted in your sink. The design promotes the development of beneficial bacteria and fungi centre to the beneficiation process.

The WormSmart natural waste system is suitable for use at domestic premises for a maximum of 10 people and is subject to approval by the appropriate local authority.

This model has been assessed as a Septic Tank as per AS/NZS1546.1.2008, incorporating Vermiculture technologies.

Installation in Tasmania's alpine areas will require confirmation from the supplier of additional installation requirements.

Additional care must be taken to protect the Vermiculture system from harsh chemicals etc. Refer to the owner's manual for information.

Schedule 2: Conditions of Accreditation

Definitions in this schedule:

AS/NZS 1547 means the Joint Australian/New Zealand Standard 'AS/NZS 1547:2008 On-site domestic-wastewater management'

AS/NZS 1546.1 means the Joint Australian/New Zealand Standard 'AS/NZS 1546.3:2017 On-site domestic wastewater treatment units, Part 1: Septic Tanks'

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 AWTS have been met and all pre-commissioning tests have been carried out in accordance with AS/NZS 1547 on all associated equipment and the sub-surface irrigation system'

Designer means 'a person licensed to design on-site waste water management system installations and may include but not be restricted to appropriately trained professional engineers, soil scientists, land surveyors and plumber certifiers'

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

Manufacturer means as listed on Certificate of Accreditation

N means 'Nitrogen' NATA means 'National Association of Testing Authorities'

PCA means 'Plumbing Code of Australia'

Permit means 'a Permit issued by the council pursuant to section 82 of the Building Act'

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'

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 means as listed on Certificate of Accreditation

System means as listed on Certificate of Accreditation

TSS means 'Total Suspended Solids'.

1.0 General

- 1.1 The *system* must be supplied, constructed and installed in accordance with the design submitted and accredited by the *Director*.
- 1.2 The *system* must not be installed in a plumbing installation other than in accordance with the conditions of permit issued by the *Permit Authority*.
- 1.3 Each *system* must be permanently and legibly marked on a non-corrosive metal plaque or equivalent, attached to the lid with the following information:
- The brand and model name or designation of the system
 - The manufacturer's name or registered trademark
 - Top load limitations, and
 - The month and year of manufacture.
- 1.4 The *supplier* must supply the owner and occupier, of each installation, with a user manual setting out the following:
1. the treatment process
 2. procedures to be followed in the event of a system failure
 3. emergency contact number
 4. care, operation, monitoring and maintenance requirements, and
 5. inspection and sampling procedures to be followed as part of the on-going monitoring and program required by the permit authority.
- 1.5 Any proposed modifications to the *system's* specified processes, equipment, materials, fittings or manuals must have prior authorisation in writing from the *Director* and may be subject to additional verification or testing.
- 1.6 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.
- 1.7 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
 - System compatibility with area specific climate zone
 - Statement of service life
 - Quality Assurance Certification
 - Installation Manual
 - Service Manual
 - Owner's Manual
 - Service Report Form
 - Engineering Drawings on A3 format
 - Detailed Specifications
 - Certificate of Accreditation and Schedules.

- I.8 This Certificate of Accreditation is valid for five (5) years from the date of issue or until withdrawn by the *Director*.
- I.9 Where a *system* has been found not to operate satisfactorily during its serviceable life, and as a result require modification to achieve the required water quality limits, all installed *systems* are to be modified accordingly.
- I.10 When granting a *permit* the *permit authority* is to satisfy itself that the *designer's* choice of the *system* configuration is optimal for the proposed use and site conditions.
- I.11 The *system* must not be deployed to areas where seasonal climatic conditions will negatively affect its proper operation (refer to *manufacturer's* specifications).
- I.12 Prior to the granting of a *permit* to install a *system* the following reports must be submitted with an application to the *permit authority*.

Site-and-soil evaluation report

The site and soil evaluation report is to detail results of an assessment of the individual lot(s) for the public health, environmental, legal and economic factors which are likely to impinge on the location and design of a land-application. (Refer to AS/NZS 1547 and associated appendices).

Design report

The Design Report is to include the following:

- (a) Relevant aspects of the Site-and-soil Evaluation Report.
 - (b) A report on the selection of the land-application. (Refer to AS/NZS 1547, and associated appendices for further information).
 - (c) A report on the selection of the wastewater-treatment system. (Refer to AS/NZS 1547, and associated appendices for further information).
 - (d) Sufficient information to show that the relevant performance requirements set out in the PCA have been met.
 - (e) A loading certificate which sets out the design criteria and the limitations associated with use of the system and incorporates such matters as:
 - (i) System capacity (number of persons and daily flow)
 - (ii) Summary of design criteria
 - (iii) The location of and use of reserve areas
 - (iv) Use of water efficient fittings, fixtures, or appliances
 - (v) Allowable variation from design flows (peak loading events)
 - (vi) Consequences of changes in loading (due to varying wastewater characteristics)
 - (vii) Consequences of overloading the system
 - (viii) Consequences of under-loading the system
 - (ix) Consequences of lack of operation, maintenance and monitoring attention, and
 - (x) Any other relevant considerations related to the use of the system.
- I.13 The following reports must be submitted to the *permit authority* and owner and be made available to the *Director* upon request after *commissioning* of the *system*:

Installation and commissioning report

The Installation and Commissioning Report is to cover the ‘as-constructed’ records of the *system* installation together with the results of *commissioning* tests to demonstrate correct construction and installation and is to be provided to the owner and *permit authority* on completion of the work. (Refer to and AS/NZS 1547 and associated appendices).

Product approval documentation

The following documents are referenced as part of this Accreditation:

Document	Document date
Certificate of Conformity 3785-2921-01	01.06.2022

2.0 Installation and Commissioning

- 2.1 The installation and operation of the *system* must comply with the conditions of accreditation and the *manufacturer’s* instructions.
 - 2.2 All plumbing work carried out in connection with the *system* installation must satisfy the requirements of the *Building Act* and the *Plumbing Code of Australia* and be carried out by a licensed plumber with appropriate training and qualifications.
 - 2.3 Where applicable, all electrical work must be carried out by a licensed electrician and in accordance with relevant provisions of *AS/NZS 3000*.
 - 2.4 If the *system* requires a 240V 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 circuit breaker in the electricity supply fuse box.
 - 2.5 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*.
- Note:** Where the *designer* is not available to supervise the installation, the *designer* shall obtain signed certification from the installing plumber stating that the installation has been constructed/installed and *commissioned* in accordance with its design, the conditions of accreditation and any additional requirements of the *council* and/or *permit authority*.
- 2.6 Where discharging wastewater to a land application by irrigation, a lockable sampling tap or gate valve is to be provided on the outlet pipe to the irrigation.
 - 2.7 A report is to be prepared by the *council* approved plumbing contractor detailing the inspection of the installation and be accompanied by a certificate certifying that the *system* is operating and performing adequately.
 - 2.8 Copies of the following reports/certificates must be submitted to the *council* and the owner as soon as practicable after the commissioning of the *system* and after each scheduled or unscheduled service or inspection for the period specified in the *permit*:
 - (a) The initial plant installation and commissioning report
 - (b) All required laboratory analytical test reports, and
 - (c) All inspection and maintenance reports.

2.9 Copies of any report or certificate required by the conditions of accreditation must be made available to the *Director* on request.

2.10 The *designer* is to provide a statement warning the user of which items and products that must not be placed in the *system*.

3.0 Maintenance and monitoring

3.1 In accordance with the Act, each installation must be cleaned and de-sludged at not less than 3 yearly intervals or as conditioned on the Plumbing Permit.

Notes:

- (1) The Septic Tank is to be pumped out and cleaned by a contractor licensed by the EPA for the removal of waste.
 - a. The system is to be de-sludged strictly in accordance with the *manufacturer's* recommendations and the sludge is to be disposed of in accordance with the Tasmanian Biosolids Reuse Guidelines and the conditions of *permit*.
 - b. Only persons with a waste transport business Environment Protection Notice are to be engaged for the removal, transporting and disposal of accumulated sludge removed from the *system*.
 - c. Any waste material removed from the system must be collected and disposed of or utilised by an approved facility or agency.
 - d. Measures are to be put in place during servicing that will protect the environment, personnel and any other persons who could be affected by the activity.
- (2) Outlet filter to be cleaned annually by owner or competent person

3.2 A copy of the service report and pumping/de-sludging certificate is to be provided to the occupant and *council*. Each service report is to contain a statement reminding the user of which items and products that must not be placed in the *system*.

4.0 Permitted uses

6.1 The effluent is suitable for land application by way of the following forms:

- (a) sub-surface by:
 - (i) trenches, beds, mounds, evapo-transpiration in accordance with the relevant provisions of AS/NZS 1547.

Note: Each of the above forms of irrigation is subject to consent from the *permit authority* and the relevant provisions of AS/NZS 1547.

6.2 Where it is not practicable for effluent from the system to be applied in accordance with AS/NZS 1547 the method of discharge must satisfy contemporary relevant regulatory requirements to the satisfaction of the *permit authority*.