



# Certificate of Accreditation

## On-Site Wastewater 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* (accreditation of products).

<b>System:</b>	Taylex® Advanced Blower System 1500 a) Concrete ABS 1500 (10EP) and b) Poly ABS 1500 (10EP)
<b>Manufacturer or Supplier:</b>	Taylex Australia Pty Ltd ABN: 43 646 051 989
<b>Of:</b>	56 Prairie Rd, Ormeau, QLD 4208

This is to certify that the Taylex® Advanced Blower System as described in Schedule 1, is accredited as an AWTS for use in plumbing installations in Tasmania for single dwellings.

This accreditation is subject to the conditions and permitted uses specified in Schedule 2, and the National Construction Code.

**Peter John Graham**  
**Director of Building Control**  
Consumer, Building and Occupational Services  
Department of Justice

**Date of Issue:** 5 April 2022

**Certificate Number:** DOC/20/89089(V2)

This Certificate of Accreditation is in force until 6 November 2025, unless withdrawn earlier at the discretion of the Director of Building Control

## Document Development History

Version	Date	Application	Sections amended
1.0	6/11/20	New Models to AS1546.3:2017 Secondary Treatment System	Original release
2.0	5/4/22	Taylex Industries P/L are now trading under a new company name Taylex Australia P/L Product approval documentation. Documents updated	Page 1 Cover page 7 Page 10

# Schedule I: Specification

## General Description

The Taylex® Concrete Advanced Blower System 1500 and Taylex® Poly Advanced Blower System 1500 are designed to treat the wastewater from a residential dwelling up to 1,500 Litres per day or 10 Equivalent Persons (10EP) with a daily flow of 150 Litres per person and an average daily BOD5 70g per person. The Taylex® ABS1500 and PABS 1500 are each contained in one vertical axis type cylindrical collection well.

Both models have been assessed as Advanced Secondary Treatment Systems in AS/NZS 1546.3:2017.

For treatment system schematic drawings and flow path, refer to Appendix A.

For Engineering drawings refer to Appendix B.

For treatment system components list refer to Appendix C.

System Components (refer to Appendix C for specifications of both the concrete and the polyethylene tank options). Capacities of the polyethylene tank are similar to those of the concrete tank described in the following tables.

**Taylex® Concrete Advanced Blower System 1500 model ABS1500**

Australian Standards Compliance		
Effluent Testing	AS1546.3:2017	
Tank Design and Testing	In Ground	AS1546.1:2008
	Above Ground	AS3735:2001
System Model	ABS1500	Concrete
Treatment Level	Advanced Secondary	

Tank Capacity		
Total Tank Capacity	9320L	
Operating Capacity	5880L	

System Chamber Capacities		
Primary Chamber	1684L	
Secondary Chamber	842L	
Aeration Chamber	2071L	
Clarifier Chamber	662L	
Irrigation Chamber	621L	
Maximum Hydraulic Loading Capacity	1,500 litres per day	

Design Parameters		
Parameter	Total Per Day	Total Per person per day
Daily flow	1500L	150L
Maximum Organic Loading BOD <sup>5</sup>	700g	70g
Total Suspended Solids (TSS)	700g	70g
Total Nitrogen (TN)	150g	15g
Total Phosphorus( TP)	25g	2.5g

Effluent Compliance: AS1546.3:2017		
Biochemical Oxygen Demand (BOD <sup>5</sup> )	≤10mg/l	
Total Suspended Solids (TSS)	≤10mg/l	
E. Coli	≤10cfu/100ml	

Temperature		
Operating Temperature C°	Minimum	Maximum
	-2°C	45°C

Electricity Consumption		
Kilowatt hours per day (kWh/d)	2.21	
Kilowatt hours per 1000L (kWh/1000L)	1.62	

Servicing and Maintenance	
Servicing Frequency	Every 3 months

**Taylex® Poly Advanced Blower System I500 model PABS I500**

Australian Standards Compliance		
<b>Effluent Testing</b>	AS1546.3:2017	
<b>Tank Design and Testing</b>	<b>In Ground</b>	AS1546.1:2008
	<b>Above Ground</b>	AS3735:2001
<b>System Model</b>	<b>PABS1500</b>	POLY
<b>Treatment Level</b>	Advanced Secondary	

Tank Capacity		
<b>Total Tank Capacity</b>	7108L	
<b>Operating Capacity</b>	6066L	

System Chamber Capacities		
Primary Chamber	1708L	
Secondary Chamber	911L	
Aeration Chamber	2067L	
Clarifier Chamber	685L	
Irrigation Chamber	685L	
Maximum Hydraulic Loading Capacity	1,500 litres per day	

Design Parameters		
Parameter	Total Per Day	Total Per person per day
Daily flow	1500L	150L
Maximum Organic Loading BOD <sup>5</sup>	700g	70g
Total Suspended Solids (TSS)	700g	70g
Total Nitrogen (TN)	150g	15g
Total Phosphorus (TP)	25g	2.5g

Effluent Compliance: AS1546.3:2017		
Biochemical Oxygen Demand (BOD <sup>5</sup> )	≤10mg/l	
Total Suspended Solids (TSS)	≤10mg/l	
E. Coli	≤10cfu/100ml	

Temperature		
Operating Temperature C°	<b>Minimum</b>	<b>Maximum</b>
	-2°C	45°C

Electricity Consumption		
Kilowatt hours per day (kWh/d)	2.21	
Kilowatt hours per 1000L (kWh/1000L)	1.62	

Servicing and Maintenance	
Servicing Frequency	Every 3 months

## Energy consumption

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

Electrical Equipment	Watts	Daily operation (hours)	kWh/year	Estimated ~Annual Cost @ ~\$0.20/kWh
Nitto Blower	86	16	502	\$100
Davey D25 irrigation pump	390	0.6	85	\$17

## Description of Treatment Processes

Wastewater enters the primary chamber where the bulk of the organic and inorganic solids are retained, by either settling to the bottom of the chamber or floating to the surface.

The clarified sewage flows into a second anaerobic settling chamber before passing through the Taylex disk filter into the aeration chamber. Organic material in the wastewater is consumed primarily by anaerobic microbes in the first two chambers and by aerobic microbes in the aeration chamber.

The 80 litre per minute Blower forces air through an air diffuser which is centrally located 300mm above the base of the aeration chamber. This supplies oxygen to aerobic microbes in the biomass suspended in the water and attached to the fixed Media Substrate.

The Blower is pre-set to operate continuously when commissioned. This is reviewed at the first service and may be reduced in blocks of ten minutes to a minimum of thirty minutes on and thirty minutes off. This enables the aeration time to optimally match the organic loading.

The biologically treated water flows from the aeration chamber through a 100mm P.V.C junction into the clarification chamber to allow settling of suspended particles to occur. A sludge return pipe located in the clarification chamber is activated during servicing to transfer accumulated settled sludge back to the primary chamber for further treatment.

The clarified effluent is then disinfected as it flows over chlorine tablets into the effluent storage chamber (pump-well). A ball bearing float switch attached to the pump triggers the irrigation pump to periodically discharge the effluent to the irrigation field. A high-level alarm located in the pump well detects high water levels.

The primary tank is de-sludged every three years or as deemed necessary by the service agent.

The treatment plant is fitted with a control panel containing a programmable logic controller (PLC).

The treatment system can be switched to the power saving mode, when no sewage flows are generated for an extended period of time (e.g. holidays). In this mode, aeration is reduced to the minimum required to supply the microbes with oxygen to ensure they remain viable.

The system is designed for domestic waste water flows in accordance with AS/NZS 1546.3 and is capable of achieving a BOD<sub>5</sub> less than or equal to 10 g/m<sup>3</sup> and a TSS less than or equal to 10 g/m<sup>3</sup> if required.

## Schedule 2: Conditions of Accreditation

### 1.0 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 1546.3** means the Joint Australian/New Zealand Standard 'AS/NZS 1546.3:2017 On-site domestic wastewater treatment systems, Part 3: Secondary treatment systems'

**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'

**AWTS** means Aerated Wastewater Treatment System. A system which uses the processes of aeration followed by clarification to achieve biological treatment of wastewater

**BOD<sub>5</sub>** 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 who has a specialty in the area of designing on-site waste water management system installations and may include but not be restricted to appropriately trained professional engineers, soil scientists, land surveyors and plumbers'

**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/m<sup>3</sup>** means grams per cubic metre

Manufacturer means 'Taylex® Australia Pty Ltd'

**N** means 'Nitrogen'

**NATA** means 'National Association of Testing Authorities'

**PCA** means 'Plumbing Code of Australia 2019'

**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 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 for the **Taylex® Concrete Advanced Blower System (ABS 1500) and Poly Advanced Blower System (PABS 1500) is Taylex Australia Pty Ltd'**

System means 'Taylex® option a) Concrete ABS 1500 and b) Poly ABS 1500

**TSS** means 'Total Suspended Solids'.

## 2.0 General

- 2.1 The system must be supplied, constructed and installed in accordance with the design submitted and accredited by the *Director*.
- 2.2 The system must not be installed in a plumbing installation other than in accordance with the conditions of permit issued by the *Permit Authority*.
- 2.3 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.
- 2.4 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.
- 2.5 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.
- 2.6 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.
- 2.7 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
  - 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.
- 2.8 This Certificate of Accreditation is valid for five (5) years from the date of issue or until withdrawn by the *Director*.



- 2.9 At each anniversary of the accreditation date the *supplier* must submit to the *Director* a list of all *systems* installed in Tasmania during the previous 12 months. The *Director* may randomly select up to 10% of the installed systems in any one calendar year. The *Director* will nominate a NATA accredited laboratory for all sampling and will be tested for *BOD<sub>5</sub>* and *TSS* and Chlorine residual. The sampling and testing of the selected systems is to be done at the *supplier's* expense. The following results must be reported to the *Director*:
- Address of premises
  - Date inspected and sampled
  - Sample identification number
  - Chlorine Residual
  - BOD<sub>5</sub>
  - TSS, and
  - Service history.
- 2.10 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.
- 2.11 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.
- 2.12 The system must not be deployed to areas where seasonal climatic conditions will negatively affect its proper operation (refer to *manufacturer's* specifications).
- 2.13 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 Clause 4.1.5 and associated appendices to 4.1).

### 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, Clause 4.2.4 and associated appendices to Clause 4.2 for further information).
- (c) A report on the selection of the wastewater-treatment system. (Refer to AS/NZS 1547, Clause 4.3.6 and associated appendices to Clause 4.3 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 underloading 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.

2.14 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 Clause 4.5.6.3 and associated appendices to Clause 4.5).

### Inspection and Maintenance Report

Maintenance reports cover ongoing inspection and maintenance operations in order to monitor the operation of the installation. (Refer to AS/NZS 1547 Clause 3.7.4 and associated Appendix 3A).

2.15 Where the supplied pump is not suitably rated for the proposed land application area it must be replaced with a pump which has a rated capacity that matches the hydraulic characteristics of the irrigation and be capable of discharging at least 50% more than the 30 minute flow rate. For drip irrigation, ensure that drip emitter flow rates do not vary more than 10% from the design rate over the whole of the system when installed on a sloping site.

**Note:** The pump selection is to be based on flow, head loss and pressure requirements.

2.16 Effluent distribution by sub-surface application may be permitted where the *Permit Authority* is satisfied that the application for a *permit* to install the *system* has demonstrated that the:

- (a) effluent can be retained within the authorised land application area
- (b) where applicable the land application has been designed and is capable of being installed and maintained in accordance with AS/NZS 1547
- (c) the location of the land application satisfies the relevant requirements of the State Policy on Water Quality Management 1997, and
- (d) the discharge is capable of satisfying the relevant water quality limits (see 5.1).

### 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. 40/22 AS/NZS 1546.3:2017 Advanced Secondary 1500L/day or 10 EP Level	Date of issue 9/2/2021 Valid 19/08/2020 to 19/08/2025
Global Certification Pty Ltd – Product Certificate Report of Taylex Concrete ABS1500 to AS/NZS 1546.3:2017 Report Number 3180	5/08/2020
Global Certification Pty Ltd – Product of Conformance In-ground AS/NZS 1546.1:2008 Number 040/1 Steel Reinforced Concrete 9,320 Lt	Date of issue 8/2/2021 Valid 19/08/2020 to 19/08/2025
Global Certification Pty Ltd – Product Certificate Report of Taylex Ploy PABS1500 to AS/NZS 1546.3:2017 Report Number 3180/1	5/08/2020
Global Certification Pty Ltd – Product of Conformance In-ground AS/NZS 1546.1:2008 Number 040/7 Polyethylene Tank 7,108 Lt	Date of issue 8/2/2021 Valid 1/08/2010 to 11/06/2025

## 3.0 Installation and Commissioning

3.1 The installation and operation of the *system* must comply with the conditions of accreditation and the *manufacturer's* instructions.

- 3.2 All plumbing work carried out in connection with the *system* installation must satisfy the requirements of the *Building Act 2019* and the Tasmanian Plumbing Regulations and be carried out by a registered plumber with appropriate training and qualifications.
- 3.3 All electrical work must be carried out by a licensed electrician and in accordance with relevant provisions of *AS/NZS 3000*.
- 3.4 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.
- 3.5 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* should 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*.

- 3.6 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.
- 3.7 A report is to be prepared by the *council* approved plumbing contractor detailing the inspection of the installation and the results of the *commissioning* tests and be accompanied by a certificate certifying that the system is operating and performing adequately (see 2.15).
- 3.8 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.
- 3.9 Copies of any report or certificate required by the conditions of accreditation must be made available to the *Director* on request.
- 3.10 The *designer* is to provide a statement warning the user of which items and products that must not be placed in the *system*.
- 3.11 To verify that the plant is commissioned, sampling must be carried out, by a *council* approved person, for *BOD<sub>5</sub>*, *TSS* and Free Residual Chlorine. The samples are to be tested and reported on by a NATA certified laboratory.

## 4.0 Maintenance and monitoring

- 4.1 Each installation must be serviced and monitored at not less than 3 monthly intervals in accordance with the conditions of accreditation, the conditions of *permit* and *manufacturer's* requirements.

### Notes:

- (1) Only a licensed plumber can carry out the maintenance and required monitoring of the *system* other than electrical work unless licensed to do so.
  - (2) The licensed plumber may need to complete training by the *supplier* before carrying out any maintenance on the *system*.
  - (3) The maintenance and monitoring intervals may be combined provided the monitoring frequency remains at 3 month intervals.
- 4.2 The owner of the *system* must enter into and maintain a maintenance contract with the *council*, the *supplier* of the *system*, or other *council* approved plumbing contractor.
  - 4.3 The *system* must be operated and maintained to ensure it performs continuously and without any intervention between inspections carried out by the *council* approved plumbing contractor.

- 4.4 A service report is to be prepared by the plumbing contractor who carried out the work detailing the inspection of the installation and the results of all servicing tests and conditions at the completion of all scheduled or unscheduled services or inspections.
- 4.5 The service report is to be accompanied by a signed certificate certifying that the system is operating and performing adequately.
- 4.6 A copy of the service report and 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*.
- 4.7 Each service must include monitoring the operation of the *system* and associated land application.
- 4.8 Maintenance must be carried out on all mechanical, electrical and functioning components of the *system* as appropriate.
- 4.9 The monitoring, servicing and reporting of the installation must include but not be restricted to the following matters, as appropriate:
- (a) Reporting on weather conditions, ambient temperature, effluent temperature
  - (b) Odour
  - (c) Check and test pump
  - (d) Check and test air blower, fan or air venturi and clean/replace air filters
  - (e) Check and test alarm system
  - (f) Check slime growth on membranes and report the on condition of membranes
  - (g) Check and report operation of sludge return, sludge level and de-sludging;
  - (h) Check and record water meter reading (if fitted)
  - (i) Check and record operation of irrigation area, irrigation fittings
  - (j) Check and clean/replace irrigation filters
  - (k) Check and report on water quality (testing for pH, Turbidity, EC and dissolved oxygen)
  - (l) Check, and replenish chlorine disinfection system
  - (m) Cleaning of the following items at above the waterline:
    - (i) clarifier
    - (ii) pipework
    - (iii) valves
    - (iv) walls of chambers.

## 5.0 Performance

### 5.1 Hydraulic and Organic Loading:

The system is accredited for treatment of domestic wastewater from residential and commercial premises with the following MAXIMUM hydraulic and organic loads:

Model	Hydraulic load (L/day)	Biochemical Oxygen Demand (g/day)
Taylex Concrete ABS 1500 10EP	1500	700
Taylex PABS 1500 10EP	1500	700

Treated effluent from the system must not exceed the following limits (90% of samples):

For sub-surface irrigation:	
5-day Biochemical Oxygen Demand (BOD <sub>5</sub> )	10 g/m <sup>3</sup> (max. 20 g/m <sup>3</sup> )
Total Suspended Solids (TSS)	10 g/m <sup>3</sup> (max. 20 g/m <sup>3</sup> )
Total Nitrogen (TN)	Less than or equal to 25
Total Phosphorous (PH)	Less than or equal to 5
For surface irrigation:	
5-day Biochemical Oxygen Demand (BOD <sub>5</sub> )	10 g/m <sup>3</sup> (max. 20 g/m <sup>3</sup> )
Total Suspended Solids (TSS)	10 g/m <sup>3</sup> (max. 20 g/m <sup>3</sup> )
Total Nitrogen (TN)	Less than or equal to 25
Total Phosphorous (PH)	Less than or equal to 5
E. coli	10 cfu/100 mL (max. 20 cfu/100 mL)
Free Residual Chlorine concentrations	≥ 0.5 g/m <sup>3</sup> and less than 2.0 g/m <sup>3</sup>

## 6.0 On-going management

- 6.1 The mandatory servicing and monitoring is to commence 3 months after the plant is *commissioned*. The servicing and monitoring is to coincide with the *supplier's* required on-going routine scheduled maintenance program.
- 6.2 In the event of failure to comply with the water quality limits set out in these conditions, fortnightly sampling and testing for *BOD<sub>5</sub>*, *TSS* and Free Residual Chlorine must be carried out until the plant is *re-commissioned*.
- 6.3 The method of preserving and the handling of samples taken from the plant must satisfy the relevant requirements of *AS/NZS 5667*.
- 6.4 Copies of the following reports and certificates must be submitted to the *permit authority* and the owner as soon as practicable after the *commissioning* of the system and after each scheduled or unscheduled service for the period specified in the *permit*:
- the initial plant installation and *commissioning* report
  - all laboratory analytical test reports; and
  - all inspection and maintenance reports
- 6.5 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*.
- 6.6 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.
- 6.7 Any waste material removed from the system must be collected and disposed of or utilised by an approved facility or agency.
- 6.8 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.

## 7.0 Permitted uses

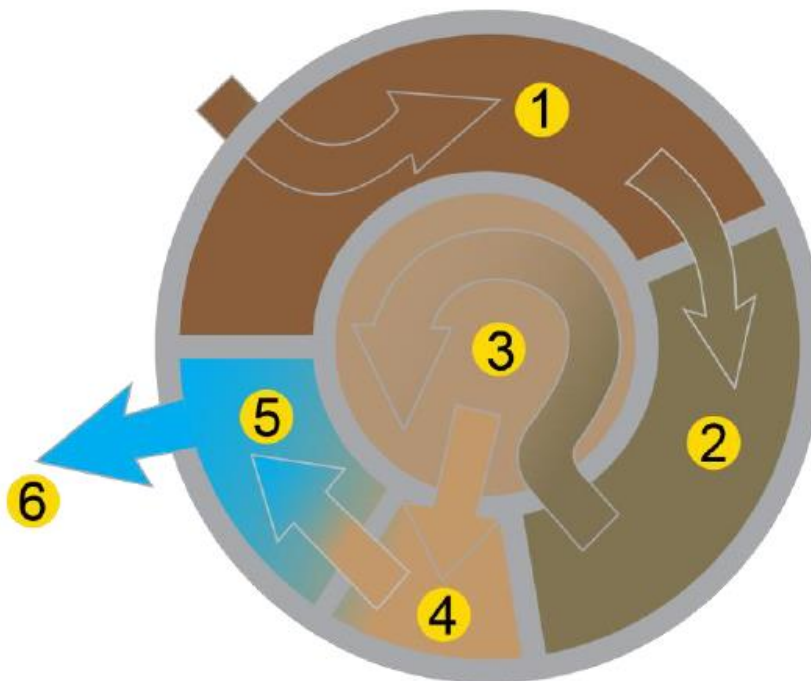
- 7.1 The effluent is suitable for land application by way of the following forms:
- (a) sub-surface by:
    - (i) subsurface drip irrigation in accordance with the relevant provisions of *AS/NZS 1547*
    - (ii) trenches, beds, mounds, evapo-transpiration in accordance with the relevant provisions of *AS/NZS 1547*.
  - (b) above ground by:
    - (i) spray irrigation
    - (ii) surface drip irrigation 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*.
- 7.2 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*.

## Appendix A

### Schematic drawings

#### Taylex ABS 1500

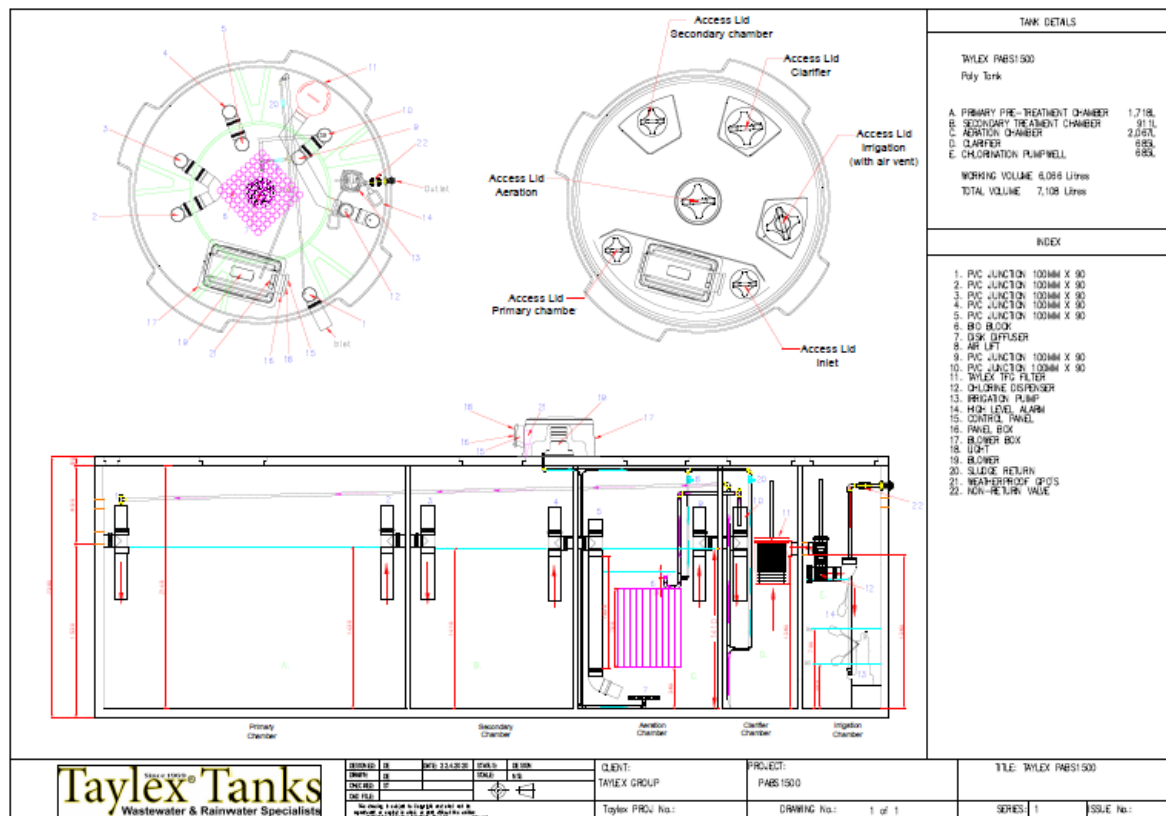
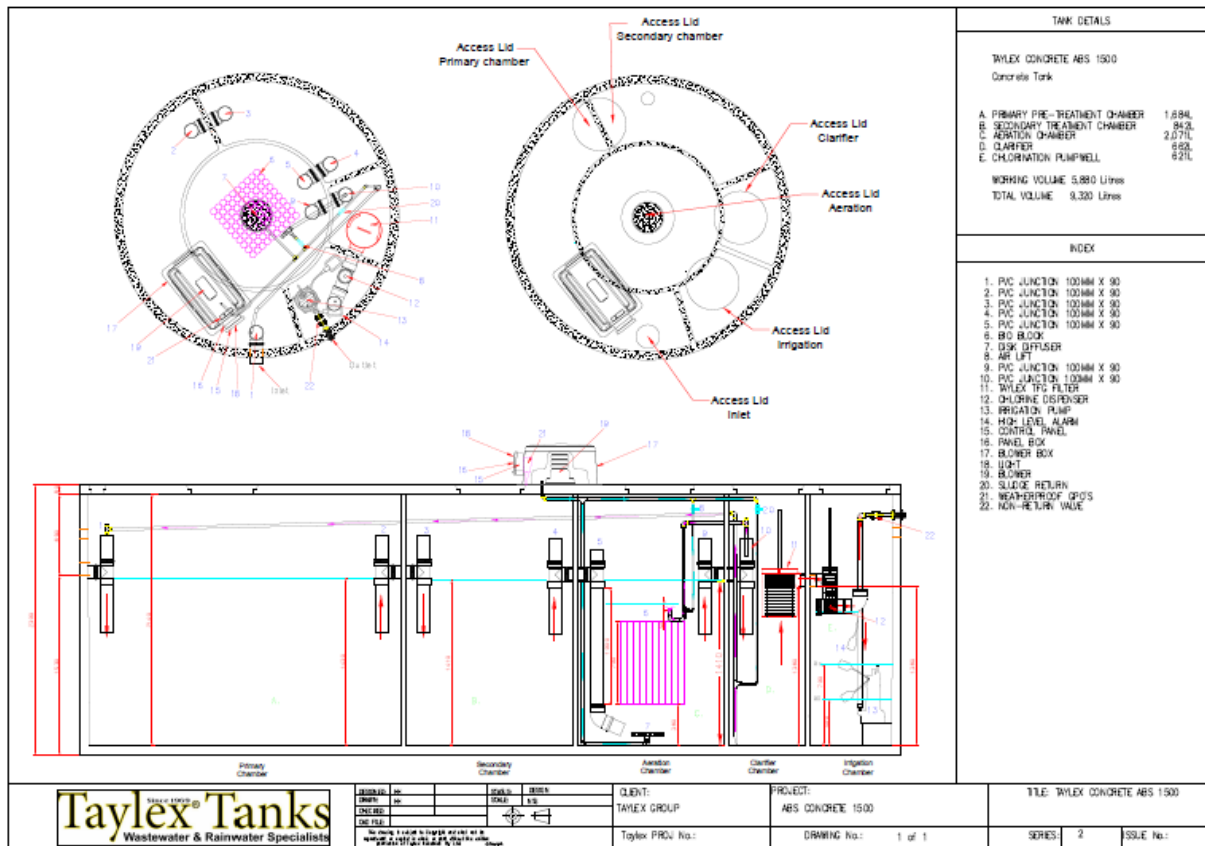
##### The Six Stages to a Taylex® Treatment System



- 1 All Household Waste Enters the Primary Chamber
- 2 Secondary Anaerobic Digestion and Sedimentation Chambers
- 3 Aerobic Biological Digestion begins in the Aeration Chamber
- 4 Final Digestion and Settling occurs in the Clarification Chamber
- 5 Disinfection occurs in the Irrigation Chamber
- 6 Clear Recycled Water for Irrigation

# Appendix B

## Engineering Drawings








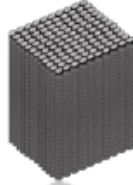
# Appendix C


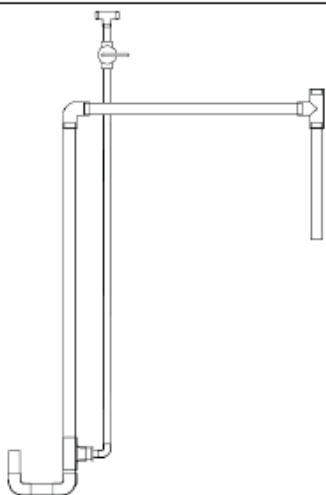


## Component list and specifications

### COMPONENTS LIST AND REPAIR – REPLACEMENT INSTRUCTIONS

- |                       |  |
|-----------------------|--|
| 1. Primary Chamber    | – 100mm inlet Junction   |
| 2. Secondary Chamber  | – 100mm Junction x 2   |
| 3. Aeration Chamber   | – 100mm Junction x 2, BIO Block, Air Lift, Disk Diffuser                                   |
| 4. Clarifier Chamber  | – 100mm Junction, Taylex® Disk Filter, Sludge Return                                       |
| 5. Irrigation Chamber | – 100mm Junction, Chlorine Dispenser, Irrigation Pump, High Level Alarm Float, 100mm Elbow |

### Component List

<p><b>TANK</b></p> <p>Concrete Tank and Lid Made from 32mpa concrete with SL 41Mesh</p> <p><b>Repair / Replacement Details:</b> Replacement lids available from Taylex® Industries or your local Service Agents.</p> <p>Chips and cracks can be repaired using Sika panel patch or mortar.</p>	
<p>1) 100mm Sweep Tee With 400mm dropper pipe and 200mm riser</p> <p>2)</p> <p>3)</p> <p>4) <b>Repair / Replacement Details:</b> Replacement tee and pipe can be purchased from a local plumbing store. Cut 100mm pipe at wall and using a 100mm slab repair coupling install new tee.</p>	
<p>5) 100mm Sweep Tee With 1000mm dropper pipe and 100mm 45° M&amp;F Bend</p> <p><b>Repair / Replacement Details:</b> Replacement tee and pipe can be purchased from a local plumbing store. Cut 100mm pipe at wall and using a 100mm slab repair coupling install new tee.</p>	
<p>6) <b>BIO Block Media</b> Width - 550mm Length - 550mm Height - 700mm Surface Area - 31.65m²</p>	

7)	<b>Diffuser</b> Material – EPDM Diameter – 230mm (9inch)	
Repair / Replacement Details:	Turn the system off. Replace the diffuser by making a new complete aeration pipe assembly fitted with the Diffuser. Cut the main aeration supply line, place the new diffuser in the system, weighed down with a small concrete block and rotate the diffuser under the biomass. Re fix the new aeration pipe assembly complete with a joining socket. Removing the old Diffuser is not required. Turn the system on. Purchase the complete assembly from Taylex®.	
8)	<b>Air Lift / Buffer with Control Valve</b>	
The Air Lift / Buffer has been specifically designed to provide a buffer within the aeration chamber, to allow increased aeration time and to control the transfer of liquid to the Clarification Chamber. The Control Valve must be set to 55 in order for the buffer to function as designed. Using the 'Venturi Principle', air is injected into the base of the assembly to then lift and transfer the liquid. The specific design will stop when the buffer zone reaches the lower level and then restarts as the water level increases. The volume of the liquid transfer varies proportionally to the liquid level in the Aeration Chamber.		
Repair / Replacement Details:	Turn the system off. Replace the Air Lift / Buffer assembly by cutting the main line and installing the new assembly with a joining socket. Turn the system on. Purchase the complete assembly from Taylex®.	
9) 10)	<b>100mm Sweep Tee With 400mm dropper pipe and 200mm riser</b>	
<b>Repair / Replacement Details:</b> Replacement tee and pipe can be purchased from a local plumbing store. Cut 100mm pipe at wall and using a 100mm slab repair coupling install new tee.		
11)	<b>Taylex TFG Disk Filter</b> Material – A.B.S and Nylon Height – 400mm Diameter – 300mm	
<b>Repair / Replacement Details:</b> Replace the TFG filter complete by removing the filter from the housing and inserting the new filter. If Filter Rods require replacement, remove the old rods, one by one, inserting the new rod each time so the filter plates remain assembled. To replace the entire housing, cut and remove the old housing in the transfer pipe, insert a slab repair coupling, re glue and fit the new housing. Ensure the glue is set before re-fitting the TFG filter. Purchase the complete assembly from Taylex®.		

- 12) Chlorine Dispenser**  
 Material – HD Polyethylene  
 Length – 360mm  
 Diameter – 90mm
- The chlorine dispenser is placed in the 100mm Tee located in the irrigation chamber.
- Repair / Replacement Details:**  
 Repairing the Chlorine Dispenser is not recommended. If the Dispenser is damaged, replace it with a new unit. Purchase the complete assembly from Taylex®.



- 13) Irrigation Pump**  
 The irrigation pump is self-controlled via a ball bearing activated float switch. When the according volume is reached in the pump chamber, the ball bearing in the float moves and creates an active connection.  
 The treated effluent is pumped to the approved dispersal zone, as the chamber reaches minimum volume, the float drops and de-activates the pump. The type and capacity of the pump will be in accordance with the land application requirements.

**Repair / Replacement Details:**  
 Turn the system off. Replace the pump by disconnecting the barrel union, be sure not to drop the internal valve assembly. Lift the Pump Assembly out of the tank. Undo the threaded fitting connect to the outlet of the pump. Re apply thread tape and fix the threaded fitting back onto the pump. Return the assembly to the tank and re-connect the barrel union, ensuring the valve is seated correctly. Turn the system on. Purchase the correct pump from Taylex® or a local outlet, ensuring the performance is identical to the pump removed.

DAVEY D25 – 9m Head

Voltage – 220 ~240 IP 68  
 AMPS – 1.9 Phase 1 50hZ  
 Max Flow – 200L/min 7m

DAVEY D42A/B3 – 32m Head

Voltage – 220 ~240 IP 68  
 AMPS – 4.3 Phase 1 50hZ  
 Max Flow – 130L/min 7m



- 14) Alarm System High Water**  
 Material – PVC  
 Length – 20mm  
 Width - 90mm  
 Trigger – High Water  
 Code – 3  
 Visual – Red L.E.D - 3 Flashes  
 Audible – Micro Buzzer  
 Voltage – 12V

**Repair / Replacement Details:**  
 Turn the system off. Replace the float by disconnecting the electrical connection in the terminal block, located in the lower section of the control box. Feed the new float cable into the control box and connect to the terminal block, fixing the screws firmly. Re fix the float to the pipe assembly and loop the lead around the barrel union, to set the float height. Turn the system on. Purchase the float from Taylex®.



- 15) ECO Control Panel**  
 (240v to 12V Power Supply)  
 Length – 160mm  
 Height – 100mm

The Taylex® ECO is a 12V controller powered by the 240v to 12v power supply plug. As the unit is 12V all works including replacements and repairs do not need to be completed by a Licenced Electrician. All service agents can therefore complete all works within the Control Box and on the Taylex® ECO Controllers.

The Taylex® ECO Controller Assembly (complete with Controller, Control Panel Box, 3 x GPO Assembly and Blower Box) is classed as electrical equipment and has been certified to comply with AS/NZS 3820, meeting the Electrical Safety requirements in Australia and New Zealand

**Repair / Replacement Details:**

Turn the system off. Replace the Control Panel by removing the 4 screws in the control box. Disconnect the Loom plug from the rear of the panel. Connect the loom to the new panel; return the new Control Panel to the control box and re fix the 4 screws. Turn the system on. Purchase the Control Panel from Taylex®.



- 16) Control Panel Box**  
 Material – HD Polyethylene  
 Height – 210mm  
 Length – 190mm  
 Width – 85mm

The weather proof control box is fixed to the side of the blower box using stainless steel screws. The control panel is fitted to the inside of this box and is connected to the power, high water alarm and pressure switch, via a gland at the back of the box.

**Repair / Replacement Details:**

Repairing boxes is not recommended. Replacements boxes be purchased from Taylex® or your local service agent.



- 17) Blower Box**  
 Material – HD Polyethylene  
 Height – 350mm  
 Length – 600mm  
 Width – 400mm

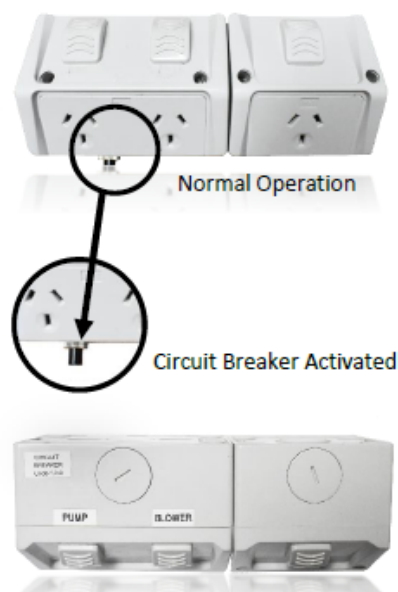
The Blower box is fitted to the lid of the ABS using 4 x 30mm anchors.

**Repair / Replacement Details:**

Repairing boxes is not recommended. Replacement boxes can be purchased from Taylex® or your local service agent.



- 18) Weatherproof GPO's**
- |               |                |
|---------------|----------------|
| Single        | Double         |
| Height – 85mm | Height – 85mm  |
| Length – 85mm | Length – 115mm |
| Width – 80mm  | Width – 80mm   |
- Mains 10amp power is connected through the 25mm coupling provided on the side of the ABS1500 and pulled up through a conduit into the Single GPO. The 12volt power pack plugs into the single GPO to power the control panel. The blower and irrigation pump are plugged into the double GPO.
- The double GPO contains a 5amp circuit breaker, which will activate if either the pump or blower (or both) draw too many amps, indicating a fault with the pump or blower. The breaker can be reset by pushing in the button if activated. The systems normal operation including alarms will continue to function, if the breaker is activated.
- Repair / Replacement Details:**  
Replacing the GPO's can only be completed by a licenced electrician, please refer to the Taylex® Electrical Connection instructions for details. Replacements can be purchased from Taylex® or your local service agent.



- 19) L.E.D Light**
- Height – 30mm  
Length – 20mm
- The LED visual alarm is constructed within the Eco Panel. This LED Red light will flash when an alarm is present. The number of flashes represent the particular code.
- Repair / Replacement Details:**  
Replacement of the LED lights only is not possible; the complete Control Panel must be replaced. Purchase the Control Panel from Taylex®.



- 20) Nitto 80L Blower**
- Material – Alloy / Plastic  
Height – 180mm  
Width – 200mm  
Length – 300mm  
Weight – 4.9kg  
Noise Rating: 40dB(A)  
Capacity – 80L  
Back Pressure Range – 10kpa – 20kpa  
Motor Power – 86 Watts  
Power Source – 240V 50Hz

**Repair / Replacement Details:**  
Purchase replacement Blowers and parts from Taylex®.





**21) Sludge Recirculation System**

This is a typical set up for the transfer of fluids using the 'Venturi Principle'. Air is injected toward the base of a vertical open ended PVC conduit. Continuous displacement occurs as the air moves vertically to the liquid, drawing liquid through the bottom of the conduit. The air/liquid mixture reaches a vertical maximum where it then moves through the 90° bend into the primary chamber. The conduit is arranged in the base of the clarifier so that the residual sludge constitutes the main vacuum target.

**Sludge Base Removal**

Sludge deposit removal is to be scheduled 1 time per 6 years or as determined necessary by a licenced Taylex® Sales Technician or the client or due to mechanical failure.

**Servicing**

Routine maintenance/servicing of the Taylex® ABS1500 is to be scheduled quarterly or as determined necessary by an approved Taylex® Sales Technician or due to mechanical failure.

Refer to Field Service Report sheet for testing requirements.

**Repair / Replacement Details:**

Turn the system off. Replace the Sludge Recirculation Assembly by cutting the main line and installing the new assembly with a joining socket. Turn the system on. Purchase the complete assembly from Taylex®.

**22) Non- Return Valve**

Height – 85mm

Length – 140mm

Width – 85mm

**Repair / Replacement Details:**

Turn the system off. Replace the Non- Return Valve by cutting the pipe in either side of the valve. Re-join the pipe using sockets and glue the Valve and sockets together. Ensure the glue is set before turning the system back on.

