Tasmanian Government

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* and the accreditation of product.

System:	Fuji Clean ACE 3000
Manufacturer or Supplier:	Fuji Clean Australia PTY LTD
Of:	PO box 1230 Oxenford Qld 4210

This is to certify that the Fuji Clean ACE 3000 as described in Schedule 1, has been accredited for use as a **Secondary Treatment System** for the treatment of domestic wastewater generated in association with any class of building defined within the National Construction Code. 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 of the Director of Building Control
Consumer, Building and Occupational Services
Department of Justice

Date of Issue: 14 December 2023 **Certificate Number: DOC/23/82470**

This Certificate of Accreditation is in force until 14 December 2028 unless withdrawn earlier at the discretion of the Director of Building Control

Document Development History

Version date	Certificate number	Approved by	Amendment notes
14 DEC 2023	DOC/23/82470	HH	Original Release

Schedule 1: Specification

Normative

System Description

The Fuji Clean ACE 3000 is an advanced secondary treatment system that incorporates both aerobic and anaerobic technologies to separate, filter and treat domestic wastewater. The treatment process also incorporates a disinfection stage that treats effluent using chlorination to the advanced secondary effluent standard.

Note: This model does not incorporate a pumped discharge. For pressurised irrigation installations, a pump chamber to AS:1546.1 2008, and suitable pump will need to be purchased.

This model has been certified as a Secondary Treatment System compliant with AS1546.3.2017.
This model has been approved by the certifier for use in Climate Zone 7.

Schedule 2: Conditions of Accreditation

Definitions in this schedule:
(Note: referenced Standards and Acts refer to version as per current NCC)
AS/NZS 1547 means the Joint Australian/New Zealand Standard 'AS/NZS 1547 On-site domestic-wastewater management'

AS 1546.3 means the Joint Australian/New Zealand Standard 'AS 1546.3 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 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'

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 STS 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 wastewater management system installations and appropriately licensed under the *Occupational Licensing Act 2005*, with the suitable scope of work.

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'

g/m3 means grams per cubic metre

Manufacturer means 'as listed on Certificate of Accreditation'

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 2016*'

Permit authority means 'a person or body authorised for that purpose by the council of the municipal area in which the on-site wastewater management system is installed'

Secondary Treatment System (STS) is as defined in AS1546.3

Supplier means 'the party as listed on Certificate of Accreditation, that is responsible for ensuring that products meet and, if applicable, continue to meet, the requirements on which the certification is based.'

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 the permit issued by the Permit Authority.

1.3 The supplier must supply the owner and occupier, of each installation, with a user manual setting out the following:

1. the treatment processes
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.

1.4 Any proposed modifications to the system's specified processes, equipment, materials, or fittings, listed as a trigger for a retest under the relevant standard, must provide an updated certificate from the certifying body; prior to consideration for a certificate of accreditation amendment by the Director.

1.5 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.

1.6 This Certificate of Accreditation is valid for five (5) years from the date of issue or until withdrawn by the Director.

1.7 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_5 and TSS and Chlorine residual. The sampling and testing of the selected systems are to be done at the supplier's expense. The following results must be reported to the Director:

- Address of system
- Date inspected and sampled

- Sample identification number
- Chlorine Residual
- BOD5
- TSS, and
- Service history

1.8 Where a system has been found not to operate satisfactorily during its serviceable life, the failure must be reported to the DBC, and as a result require modification to achieve the required water quality limits, all installed systems are to be modified accordingly.

1.9 The *system* must not be deployed to areas where seasonal climatic conditions will negatively affect its proper operation (refer to manufacturer's specifications).

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).

Inspection and Maintenance Report

Maintenance reports cover ongoing inspection and maintenance operations to monitor the operation of the installation. (Refer to AS/NZS 1547).

Any installed pump must have 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.

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 can satisfy the relevant water quality limits (see 5.1).

Product approval documentation

The following documents are referenced as part of this Accreditation:

Document	Document date
Test Report – Global Certification	12/03/2021
Certificate of Conformity – Global Certification #649	12/03/2021

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 All electrical work must be carried out by a licensed electrician and in accordance with relevant provisions of AS/NZS 3000.

2.4 Where a 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 a signed Standard of Work certificate (Form 71b) 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 the results of the commissioning tests 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 advising the user of which items and products that must not be placed in the system.

2.11 To verify that the system is commissioned, sampling must be carried out, by a council approved person, for BOD_5, TSS and Free Residual Chlorine. The samples are to be tested and reported on by a NATA certified laboratory.

3.0 Maintenance and monitoring

3.1 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-monthly intervals.

3.2 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.

3.3 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.

3.4 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.

3.5 The service report is to be accompanied by a signed certificate confirming that the system is operating and performing adequately.

3.6 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.

3.7 Each service must include monitoring the operation of the system and associated land application.

3.8 Maintenance must be carried out on all mechanical, electrical, and functioning components of the system as appropriate.

3.9 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.

4.0 Performance

4.1 Hydraulic and Organic Loading:

The system is accredited for treatment of domestic wastewater from buildings with the following maximum hydraulic and organic loads:

Model	**Hydraulic load (L/day)**	**Biochemical Oxygen Demand (g/day)**
Fuji Clean ACE 3000	3000	1400

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

For sub-surface irrigation:	
5-day Biochemical Oxygen Demand (BOD_5)	10 g/m^3 (max. 20 g/m^3)
Total Suspended Solids (TSS)	10 g/m^3 (max. 20 g/m^3)
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_5)	10 g/m^3 (max. 20 g/m^3)
Total Suspended Solids (TSS)	10 g/m^3 (max. 20 g/m^3)
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 $g/m^3$and less than 2.0 g/m^3

5.0 On-going management

5.1 The mandatory servicing and monitoring are to commence 3 months after the plant is commissioned. The servicing and monitoring are to coincide with the supplier's required on-going routine scheduled maintenance program.

5.2 In the event of failure to comply with the water quality limits set out in these conditions, fortnightly sampling and testing for *BOD_5*, *TSS* and Free Residual Chlorine must be carried out until the system is re-commissioned.

5.3 The method of preserving and the handling of samples taken from the plant must satisfy the relevant requirements of *AS/NZS 5667*.

5.4 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

5.5 The system is to be desludged 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.

5.6 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.

5.7 Any waste material removed from the system must be collected and disposed of or utilised by an approved facility or agency.

5.8 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.

6.0 Permitted uses (remove non-applicable uses)

6.1 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, evapotranspiration 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.

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 the performance requirements of the National Construction Code.